User Input Was möchtest du tun? (t = Trainieren, p = Spielen, b = Beides, d = Löschen): t Bitte gib die Run-Nummer ein: 1 Wie viele Generationen sollen trainiert werden? 1000

```
In [2]: import Exp2NEAT
Exp2NEAT.train(1000, 1)
```

***** Running generation 0 ***** Population's average fitness: -127.48876 stdev: 24.66100 Best fitness: -90.29809 - size: (4, 96) - species 1 - id 205 Average adjusted fitness: 0.719 Mean genetic distance 1.168, standard deviation 0.212 Population of 250 members in 1 species: age size fitness adj fit stag ==== === ===== ===== ==== 250 -90.3 0.719 Total extinctions: 0 Generation time: 24.634 sec ***** Running generation 1 ***** Population's average fitness: -119.45624 stdev: 23.67442 Best fitness: -90.47096 - size: (4, 94) - species 1 - id 411 Average adjusted fitness: 0.798 Mean genetic distance 1.230, standard deviation 0.221 Population of 250 members in 1 species: age size fitness adj fit stag ==== === ===== ===== ==== 250 -90.5 0.798 Total extinctions: 0 Generation time: 10.758 sec (17.696 average) ***** Running generation 2 ***** Population's average fitness: -116.38627 stdev: 20.94856 Best fitness: -77.61854 - size: (4, 95) - species 1 - id 548 Average adjusted fitness: 0.633 Mean genetic distance 1.334, standard deviation 0.193 Population of 250 members in 1 species: age size fitness adj fit stag ==== === ===== ===== ==== 1 2 250 -77.6 0.633 Total extinctions: 0 Generation time: 9.507 sec (14.966 average) ***** Running generation 3 ***** Population's average fitness: -115.61796 stdev: 21.39701 Best fitness: -81.62814 - size: (4, 95) - species 1 - id 548 Average adjusted fitness: 0.698 Mean genetic distance 1.282, standard deviation 0.219 Population of 250 members in 1 species: ID age size fitness adj fit stag ==== === ===== ===== ==== 3 250 -81.6 0.698 1 Total extinctions: 0 Generation time: 8.563 sec (13.365 average) ***** Running generation 4 ***** Population's average fitness: -112.78031 stdev: 18.88317 Best fitness: -82.70302 - size: (4, 95) - species 1 - id 1048 Average adjusted fitness: 0.716 Mean genetic distance 1.294, standard deviation 0.190 Population of 250 members in 1 species: age size fitness adj fit stag

```
==== ====
                 250
        4
                   -82.7
                           0.716
Total extinctions: 0
Generation time: 8.163 sec (12.325 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-4
 ***** Running generation 5 *****
Population's average fitness: -112.55880 stdev: 18.67250
Best fitness: -68.88737 - size: (6, 88) - species 1 - id 1228
Average adjusted fitness: 0.615
Mean genetic distance 1.378, standard deviation 0.201
Population of 250 members in 1 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                   -68.9
                          0.615
         5
            250
Total extinctions: 0
Generation time: 7.403 sec (11.505 average)
***** Running generation 6 *****
Population's average fitness: -115.24882 stdev: 22.65271
Best fitness: -74.28083 - size: (6, 88) - species 1 - id 1228
Average adjusted fitness: 0.730
Mean genetic distance 1.419, standard deviation 0.205
Population of 250 members in 1 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
       6 250
                   -74.3 0.730
Total extinctions: 0
Generation time: 9.176 sec (11.172 average)
***** Running generation 7 *****
Population's average fitness: -111.64920 stdev: 17.50764
Best fitness: -75.91035 - size: (6, 88) - species 1 - id 1228
Average adjusted fitness: 0.669
Mean genetic distance 1.466, standard deviation 0.197
Population of 250 members in 1 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
             250
                   -75.9
                            0.669
Total extinctions: 0
Generation time: 7.343 sec (10.693 average)
***** Running generation 8 *****
Population's average fitness: -111.13437 stdev: 21.63282
Best fitness: -45.82923 - size: (6, 89) - species 1 - id 1966
Average adjusted fitness: 0.545
Mean genetic distance 1.449, standard deviation 0.204
Population of 250 members in 1 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
                 -45.8 0.545
           250
Total extinctions: 0
Generation time: 9.035 sec (10.509 average)
 ***** Running generation 9 *****
```

```
Population's average fitness: -108.22889 stdev: 17.06388
Best fitness: -50.29308 - size: (6, 87) - species 1 - id 2373
Average adjusted fitness: 0.572
Mean genetic distance 1.585, standard deviation 0.204
Population of 250 members in 1 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
                   -50.3
    1 9
           250
                           0.572
Total extinctions: 0
Generation time: 7.125 sec (10.171 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-9
 ***** Running generation 10 *****
Population's average fitness: -104.29779 stdev: 14.86463
Best fitness: -37.41439 - size: (8, 97) - species 1 - id 2556
Average adjusted fitness: 0.537
Mean genetic distance 1.678, standard deviation 0.183
Population of 250 members in 1 species:
      age size fitness adj fit stag
 10
             250 -37.4 0.537
Total extinctions: 0
Generation time: 7.136 sec (8.421 average)
***** Running generation 11 *****
Population's average fitness: -103.50669 stdev: 19.06386
Best fitness: -4.16775 - size: (9, 95) - species 1 - id 2684
Average adjusted fitness: 0.445
Mean genetic distance 1.726, standard deviation 0.189
Population of 250 members in 1 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1
       11 250
                   -4.2 0.445
Total extinctions: 0
Generation time: 7.249 sec (8.070 average)
***** Running generation 12 *****
Population's average fitness: -103.49412 stdev: 27.56360
Best fitness: -2.60842 - size: (9, 95) - species 1 - id 2684
Average adjusted fitness: 0.477
Mean genetic distance 1.827, standard deviation 0.253
Population of 250 members in 1 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
       12
             250
                    -2.6
                            0.477
Total extinctions: 0
Generation time: 9.964 sec (8.116 average)
***** Running generation 13 *****
Population's average fitness: -95.39203 stdev: 34.67786
Best fitness: 3.07643 - size: (8, 98) - species 1 - id 3286
Average adjusted fitness: 0.464
Mean genetic distance 2.056, standard deviation 0.178
Population of 250 members in 1 species:
```

```
age size fitness adj fit stag
  TD
           ==== ====== =====
            250
                    3.1 0.464
       13
Total extinctions: 0
Generation time: 12.310 sec (8.490 average)
 ***** Running generation 14 *****
Population's average fitness: -92.00836 stdev: 39.78393
Best fitness: 2.37417 - size: (8, 93) - species 1 - id 3152
Average adjusted fitness: 0.653
Mean genetic distance 2.168, standard deviation 0.248
Population of 250 members in 1 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1
      14
           250
                    2.4 0.653
Total extinctions: 0
Generation time: 10.094 sec (8.683 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-14
 ***** Running generation 15 *****
Population's average fitness: -79.28905 stdev: 44.42758
Best fitness: 4.57247 - size: (8, 94) - species 1 - id 3833
Average adjusted fitness: 0.565
Mean genetic distance 2.253, standard deviation 0.306
Population of 250 members in 1 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 15
           250
                   4.6 0.565
Total extinctions: 0
Generation time: 13.846 sec (9.328 average)
***** Running generation 16 *****
Population's average fitness: -78.81525 stdev: 45.72113
Best fitness: 22.39094 - size: (8, 96) - species 1 - id 4083
Average adjusted fitness: 0.511
Mean genetic distance 2.045, standard deviation 0.481
Population of 250 members in 1 species:
       age size fitness adj fit stag
  22.4 0.511
    1
       16
            250
Total extinctions: 0
Generation time: 12.604 sec (9.671 average)
***** Running generation 17 *****
Population's average fitness: -72.21712 stdev: 47.01498
Best fitness: 8.22089 - size: (8, 90) - species 1 - id 4225
Average adjusted fitness: 0.574
Mean genetic distance 2.047, standard deviation 0.456
Population of 250 members in 1 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
       17
            250
                     8.2
                           0.574
    1
Total extinctions: 0
Generation time: 14.112 sec (10.347 average)
```

```
***** Running generation 18 *****
Population's average fitness: -74.76056 stdev: 47.87960
Best fitness: 2.51496 - size: (9, 95) - species 1 - id 4402
Average adjusted fitness: 0.567
Mean genetic distance 2.010, standard deviation 0.457
Population of 250 members in 1 species:
       age size fitness adj fit stag
 18
             250
                     2.5
                           0.567
Total extinctions: 0
Generation time: 12.007 sec (10.645 average)
 ***** Running generation 19 *****
Population's average fitness: -71.25352 stdev: 49.77594
Best fitness: 8.13130 - size: (7, 86) - species 1 - id 4643
Average adjusted fitness: 0.580
Mean genetic distance 2.089, standard deviation 0.454
Population of 250 members in 1 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
            250
                     8.1
                            0.580
       19
Total extinctions: 0
Generation time: 13.868 sec (11.319 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-19
 ***** Running generation 20 *****
Population's average fitness: -66.87615 stdev: 49.75762
Best fitness: 6.45001 - size: (7, 86) - species 1 - id 4643
Average adjusted fitness: 0.609
Mean genetic distance 2.108, standard deviation 0.448
Population of 250 members in 1 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
                     6.5
    1
       20
             250
                           0.609
Total extinctions: 0
Generation time: 14.788 sec (12.084 average)
***** Running generation 21 *****
Population's average fitness: -70.43009 stdev: 47.04700
Best fitness: 4.82349 - size: (7, 89) - species 1 - id 5005
Average adjusted fitness: 0.571
Mean genetic distance 2.223, standard deviation 0.393
Population of 250 members in 1 species:
       age size fitness adj fit stag
  4.8
                            0.571
             250
    1
       21
Total extinctions: 0
Generation time: 13.494 sec (12.709 average)
***** Running generation 22 *****
Population's average fitness: -70.32905 stdev: 49.84075
Best fitness: 12.90538 - size: (9, 95) - species 1 - id 5323
Average adjusted fitness: 0.541
Mean genetic distance 2.246, standard deviation 0.386
```

```
Population of 250 members in 1 species:
       age size fitness adj fit stag
       ===
           ==== ====== =====
       22
           250
                    12.9
                            0.541
Total extinctions: 0
Generation time: 13.342 sec (13.047 average)
 ***** Running generation 23 *****
Population's average fitness: -63.00557 stdev: 49.12897
Best fitness: 23.61244 - size: (9, 97) - species 1 - id 5498
Average adjusted fitness: 0.582
Mean genetic distance 2.237, standard deviation 0.424
Population of 250 members in 1 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
       23
             250
                    23.6
                          0.582
Total extinctions: 0
Generation time: 14.959 sec (13.311 average)
***** Running generation 24 *****
Population's average fitness: -66.13541 stdev: 48.27495
Best fitness: 19.04167 - size: (11, 97) - species 1 - id 5768
Average adjusted fitness: 0.490
Mean genetic distance 2.285, standard deviation 0.306
Population of 250 members in 1 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1
       24
            250
                    19.0 0.490
Total extinctions: 0
Generation time: 14.393 sec (13.741 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-24
 ***** Running generation 25 *****
Population's average fitness: -71.21578 stdev: 50.70465
Best fitness: 22.60893 - size: (10, 93) - species 1 - id 5908
Average adjusted fitness: 0.552
Mean genetic distance 2.360, standard deviation 0.347
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1
       25 136
                    22.6
                            0.552
                                     2
    2
        0 114
                     --
Total extinctions: 0
Generation time: 13.674 sec (13.724 average)
 ***** Running generation 26 *****
Population's average fitness: -63.08171 stdev: 51.11266
Best fitness: 32.91699 - size: (9, 86) - species 1 - id 6334
Average adjusted fitness: 0.638
Mean genetic distance 2.370, standard deviation 0.362
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== ===
           ==== ====== =====
                   32.9
    1
        26
           18
                            0.645
                                     0
    2
            232
                   20.2
                            0.630
                                     0
        1
```

```
Total extinctions: 0
Generation time: 14.846 sec (13.948 average)
***** Running generation 27 *****
Population's average fitness: -58.67622 stdev: 52.00133
Best fitness: 37.91011 - size: (9, 95) - species 2 - id 5323
Average adjusted fitness: 0.484
Mean genetic distance 2.390, standard deviation 0.321
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ====== ===== ====
      27
            18
                    -2.8
                            0.418
                    37.9
    2
        2
             232
                            0.550
Total extinctions: 0
Generation time: 15.412 sec (14.078 average)
***** Running generation 28 *****
Population's average fitness: -65.12244 stdev: 50.87837
Best fitness: 28.61210 - size: (9, 95) - species 2 - id 6880
Average adjusted fitness: 0.531
Mean genetic distance 2.317, standard deviation 0.354
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1
       28
           1
                   -1.8 0.505
    2
        3
             249
                    28.6 0.556
Total extinctions: 0
Generation time: 14.994 sec (14.377 average)
***** Running generation 29 *****
Population's average fitness: -59.37215 stdev: 53.17456
Best fitness: 24.10124 - size: (9, 95) - species 2 - id 6880
Average adjusted fitness: 0.514
Mean genetic distance 2.087, standard deviation 0.595
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
      29
           53 -93.2 0.431
    2
       4
           197
                    24.1
                            0.596
                                     2
Total extinctions: 0
Generation time: 16.168 sec (14.607 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-29
***** Running generation 30 *****
Population's average fitness: -52.57233 stdev: 53.87099
Best fitness: 38.57336 - size: (11, 99) - species 2 - id 7306
Average adjusted fitness: 0.655
Mean genetic distance 1.999, standard deviation 0.800
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
       30
            91
                     0.5
                            0.675
    1
    2
         5
             159
                    38.6
                            0.634
Total extinctions: 0
Generation time: 16.218 sec (14.750 average)
```

```
***** Running generation 31 *****
Population's average fitness: -55.34171 stdev: 52.36448
Best fitness: 38.14344 - size: (12, 92) - species 2 - id 7502
Average adjusted fitness: 0.556
Mean genetic distance 1.970, standard deviation 0.776
Population of 250 members in 2 species:
       age size fitness adj fit stag
            ==== ====== =====
       31
                                      5
            114
                     3.6 0.610
                            0.503
         6
             136
                     38.1
Total extinctions: 0
Generation time: 16.445 sec (15.045 average)
 ***** Running generation 32 *****
Population's average fitness: -42.75409 stdev: 52.78726
Best fitness: 39.44162 - size: (7, 72) - species 2 - id 7768
Average adjusted fitness: 0.640
Mean genetic distance 1.980, standard deviation 0.711
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
       32
            121
                     5.5
                            0.660
                                      6
                            0.620
             129
                     39.4
    2
         7
Total extinctions: 0
Generation time: 19.560 sec (15.667 average)
 ***** Running generation 33 *****
Population's average fitness: -45.58710 stdev: 53.15458
Best fitness: 38.10084 - size: (6, 68) - species 2 - id 8063
Average adjusted fitness: 0.661
Mean genetic distance 2.024, standard deviation 0.633
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
       33
             125
                     2.4
                            0.679
             125
                     38.1
                            0.644
                                      1
         8
Total extinctions: 0
Generation time: 18.522 sec (16.023 average)
 ***** Running generation 34 *****
Population's average fitness: -56.42784 stdev: 51.89036
Best fitness: 37.80424 - size: (8, 78) - species 2 - id 8100
Average adjusted fitness: 0.526
Mean genetic distance 1.982, standard deviation 0.653
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
       34
            130
                     3.0
                            0.565
    1
             120
                     37.8
                            0.487
Total extinctions: 0
Generation time: 16.307 sec (16.215 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-34
 ***** Running generation 35 *****
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Population's average fitness: -47.70356 stdev: 51.41088
Best fitness: 43.45297 - size: (12, 92) - species 2 - id 7502
Average adjusted fitness: 0.600
Mean genetic distance 2.017, standard deviation 0.600
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 35
                     4.3
                            0.625
             131
        10
             119
                    43.5
                            0.574
Total extinctions: 0
Generation time: 18.070 sec (16.654 average)
 ***** Running generation 36 *****
Population's average fitness: -51.60755 stdev: 54.15071
Best fitness: 49.37969 - size: (11, 86) - species 2 - id 8730
Average adjusted fitness: 0.562
Mean genetic distance 2.117, standard deviation 0.544
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
                    5.0 0.549
       36 127
                                    10
                    49.4 0.574
       11
           123
Total extinctions: 0
Generation time: 16.607 sec (16.830 average)
***** Running generation 37 *****
Population's average fitness: -50.54084 stdev: 52.40111
Best fitness: 42.90727 - size: (11, 88) - species 2 - id 8970
Average adjusted fitness: 0.501
Mean genetic distance 2.214, standard deviation 0.525
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 37 129
                    5.7 0.525
                                    11
       12 121
                    42.9
                            0.477
    2
                                     1
Total extinctions: 0
Generation time: 16.838 sec (16.973 average)
***** Running generation 38 *****
Population's average fitness: -46.39248 stdev: 56.18971
Best fitness: 53.42031 - size: (12, 90) - species 2 - id 9153
Average adjusted fitness: 0.574
Mean genetic distance 2.213, standard deviation 0.543
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
       38
           127
                     6.5
                            0.572
                                    12
       13
            123
                    53.4
                            0.576
Total extinctions: 0
Generation time: 18.373 sec (17.311 average)
***** Running generation 39 *****
Population's average fitness: -52.01351 stdev: 55.87998
Best fitness: 48.23890 - size: (9, 78) - species 2 - id 9402
Average adjusted fitness: 0.566
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```
Mean genetic distance 2.245, standard deviation 0.520
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
    1 39 128
                    4.6 0.585 13
       14 122
                    48.2 0.547
    2
Total extinctions: 0
Generation time: 16.538 sec (17.348 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-39
***** Running generation 40 *****
Population's average fitness: -44.17262 stdev: 53.36135
Best fitness: 49.50346 - size: (9, 77) - species 2 - id 9626
Average adjusted fitness: 0.534
Mean genetic distance 2.209, standard deviation 0.628
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ---- --- ---- -----
       40
            131
                    4.3
                           0.569
    2 15 119
                    49.5 0.500
                                     2
Total extinctions: 0
Generation time: 17.827 sec (17.509 average)
***** Running generation 41 *****
Population's average fitness: -50.80326 stdev: 55.39301
Best fitness: 51.11787 - size: (11, 83) - species 2 - id 8712
Average adjusted fitness: 0.552
Mean genetic distance 2.261, standard deviation 0.520
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
                    3.9 0.566
      41 130
       16
           120
                    51.1
                           0.537
Total extinctions: 0
Generation time: 17.117 sec (17.576 average)
***** Running generation 42 *****
Population's average fitness: -41.12718 stdev: 52.58815
Best fitness: 46.97443 - size: (10, 81) - species 2 - id 10115
Average adjusted fitness: 0.544
Mean genetic distance 2.268, standard deviation 0.501
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
       42 131
                    3.4 0.571 16
    1
           119
        17
                    47.0
                           0.518
Total extinctions: 0
Generation time: 18.443 sec (17.464 average)
***** Running generation 43 *****
Population's average fitness: -46.96680 stdev: 53.74331
Best fitness: 51.64756 - size: (9, 79) - species 2 - id 10311
Average adjusted fitness: 0.541
Mean genetic distance 2.293, standard deviation 0.493
Population of 250 members in 2 species:
```

```
age size fitness adj fit stag
  TD
           ==== ====== =====
            132
                          0.577
       43
                    4.9
                                    17
    1
    2
       18 118
                   51.6 0.506
                                    5
Total extinctions: 0
Generation time: 17.925 sec (17.404 average)
 ***** Running generation 44 *****
Population's average fitness: -43.43812 stdev: 54.32645
Best fitness: 55.72401 - size: (9, 75) - species 2 - id 10635
Average adjusted fitness: 0.576
Mean genetic distance 2.293, standard deviation 0.520
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
       44
           131
    1
                     4.0
                            0.594
        19 119
                    55.7 0.557
Total extinctions: 0
Generation time: 17.897 sec (17.563 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-44
 ***** Running generation 45 *****
Population's average fitness: -41.28364 stdev: 54.48254
Best fitness: 55.75259 - size: (9, 75) - species 2 - id 10635
Average adjusted fitness: 0.540
Mean genetic distance 2.265, standard deviation 0.607
Population of 250 members in 2 species:
       age size fitness adj fit stag
  TD
 ==== === ===== ===== ====
       45
                    3.2 0.533
           127
                                    19
    1
       20 123
                    55.8
                            0.546
Total extinctions: 0
Generation time: 17.650 sec (17.521 average)
 ***** Running generation 46 *****
Population's average fitness: -45.00232 stdev: 56.05871
Best fitness: 53.89592 - size: (11, 78) - species 2 - id 10865
Average adjusted fitness: 0.579
Mean genetic distance 2.289, standard deviation 0.617
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1
        46
           129
                   14.7
                            0.605
                                    20
        21 121
                    53.9
                            0.554
    2
Total extinctions: 0
Generation time: 18.087 sec (17.669 average)
 ***** Running generation 47 *****
Population's average fitness: -47.38244 stdev: 57.10086
Best fitness: 59.62692 - size: (11, 79) - species 2 - id 11043
Average adjusted fitness: 0.559
Mean genetic distance 2.355, standard deviation 0.548
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
```

```
1
        47
             128
                     16.4
                             0.574
                                      21
    2
        22
             122
                     59.6
                             0.545
                                       a
Total extinctions: 0
Generation time: 17.065 sec (17.692 average)
***** Running generation 48 *****
Population's average fitness: -51.17810 stdev: 58.00920
Best fitness: 46.85793 - size: (11, 79) - species 2 - id 11043
Average adjusted fitness: 0.570
Mean genetic distance 2.322, standard deviation 0.591
Population of 250 members in 2 species:
       age size fitness adj fit stag
                  ======= =====
       ===
            ====
                                      22
    1
       48
             129
                     24.8
                             0.592
    2
        23
            121
                     46.9
                             0.548
                                       1
Total extinctions: 0
Generation time: 16.160 sec (17.471 average)
***** Running generation 49 *****
Population's average fitness: -47.66870 stdev: 55.38343
Best fitness: 48.59053 - size: (9, 67) - species 2 - id 11777
Average adjusted fitness: 0.550
Mean genetic distance 2.385, standard deviation 0.539
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== ===
            ==== ====== =====
        49
             128
                      3.6
                             0.572
                                      23
    1
    2
        24
            122
                     48.6
                             0.528
                                       2
Total extinctions: 0
Generation time: 17.518 sec (17.569 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-49
 ***** Running generation 50 *****
Population's average fitness: -44.98800 stdev: 55.85414
Best fitness: 51.28965 - size: (11, 78) - species 2 - id 10865
Average adjusted fitness: 0.576
Mean genetic distance 2.358, standard deviation 0.582
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ====
       === ====
                 ====== ===== ====
    1
       50
             126
                      2.5
                             0.565
                                      24
    2
        25
             124
                             0.588
                                       3
                     51.3
Total extinctions: 0
Generation time: 17.659 sec (17.552 average)
 ***** Running generation 51 *****
Population's average fitness: -47.87194 stdev: 54.66024
Best fitness: 66.21569 - size: (11, 81) - species 2 - id 12199
Average adjusted fitness: 0.530
Mean genetic distance 2.231, standard deviation 0.596
Population of 250 members in 2 species:
       age size fitness adj fit stag
   ΙD
       ===
            ====
                  =======
                             0.535
    1
        51
             127
                     16.5
                                      25
    2
        26
             123
                     66.2
                             0.526
                                       0
```

```
Total extinctions: 0
Generation time: 17.016 sec (17.542 average)
***** Running generation 52 *****
Population's average fitness: -42.40124 stdev: 58.44831
Best fitness: 55.38829 - size: (11, 81) - species 2 - id 12199
Average adjusted fitness: 0.589
Mean genetic distance 2.203, standard deviation 0.599
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ====== ===== ====
      52
                     27.7
             126
                            0.586
                                     26
    2
        27
            124
                    55.4
                            0.592
Total extinctions: 0
Generation time: 17.861 sec (17.484 average)
***** Running generation 53 *****
Population's average fitness: -45.93014 stdev: 53.40127
Best fitness: 60.15677 - size: (7, 62) - species 2 - id 12466
Average adjusted fitness: 0.502
Mean genetic distance 2.244, standard deviation 0.584
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ====== ====
    1
      53
           129
                   18.7 0.530
                                     27
            121
    2
        28
                    60.2
                           0.474
                                      2
Total extinctions: 0
Generation time: 17.263 sec (17.418 average)
***** Running generation 54 *****
Population's average fitness: -43.67406 stdev: 54.80232
Best fitness: 62.27001 - size: (7, 62) - species 2 - id 12466
Average adjusted fitness: 0.538
Mean genetic distance 2.279, standard deviation 0.553
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
       54
           130
                   24.2 0.554
    2
       29
            120
                     62.3
                            0.522
                                     3
Total extinctions: 0
Generation time: 17.158 sec (17.344 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-54
***** Running generation 55 *****
Population's average fitness: -41.57548 stdev: 57.26248
Best fitness: 54.48856 - size: (11, 69) - species 2 - id 13130
Average adjusted fitness: 0.600
Mean genetic distance 2.309, standard deviation 0.531
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
  ==== === ===== ===== ====
       55
             129
                     30.3
                            0.612
                                     29
    1
    2
        30
            121
                     54.5
                            0.588
Total extinctions: 0
Generation time: 17.662 sec (17.345 average)
```

```
***** Running generation 56 *****
Population's average fitness: -33.06037 stdev: 59.58041
Best fitness: 57.56732 - size: (7, 62) - species 2 - id 12466
Average adjusted fitness: 0.689
Mean genetic distance 2.290, standard deviation 0.530
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== =====
                    19.8 0.648 30
       56
            124
                    57.6
                            0.731
       31
            126
Total extinctions: 0
Generation time: 19.168 sec (17.453 average)
 ***** Running generation 57 *****
Population's average fitness: -38.27214 stdev: 58.30360
Best fitness: 55.07711 - size: (12, 71) - species 2 - id 13574
Average adjusted fitness: 0.577
Mean genetic distance 2.288, standard deviation 0.581
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ---- --- ---- -----
       57
            120
                    34.1
                            0.564
                    55.1
                            0.590
        32
            130
                                      6
    2
Total extinctions: 0
Generation time: 17.850 sec (17.532 average)
 ***** Running generation 58 *****
Population's average fitness: -45.84815 stdev: 58.26416
Best fitness: 50.22510 - size: (12, 72) - species 2 - id 13859
Average adjusted fitness: 0.661
Mean genetic distance 2.280, standard deviation 0.618
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
       58
             123
                    17.7
                            0.669
        33
             127
                     50.2
                            0.652
    2
Total extinctions: 0
Generation time: 16.880 sec (17.604 average)
 ***** Running generation 59 *****
Population's average fitness: -44.14354 stdev: 56.56394
Best fitness: 52.28345 - size: (12, 77) - species 2 - id 14012
Average adjusted fitness: 0.597
Mean genetic distance 2.339, standard deviation 0.609
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
       59
             124
                     7.3
                            0.597
    1
        34
             126
                     52.3
                            0.598
Total extinctions: 0
Generation time: 16.828 sec (17.535 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-59
 ***** Running generation 60 *****
```

```
Population's average fitness: -40.34213 stdev: 58.57922
Best fitness: 66.13652 - size: (13, 87) - species 2 - id 14050
Average adjusted fitness: 0.560
Mean genetic distance 2.390, standard deviation 0.593
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
      60
             125
                    37.2
                            0.565
                                     a
    1
        35
            125
                    66.1
                            0.554
Total extinctions: 0
Generation time: 17.098 sec (17.479 average)
 ***** Running generation 61 *****
Population's average fitness: -39.97241 stdev: 60.41107
Best fitness: 56.55760 - size: (12, 78) - species 2 - id 14315
Average adjusted fitness: 0.597
Mean genetic distance 2.371, standard deviation 0.638
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
                   29.8 0.586
       61 124
                    56.6 0.609
           126
       36
                                    10
Total extinctions: 0
Generation time: 17.632 sec (17.540 average)
***** Running generation 62 *****
Population's average fitness: -44.04957 stdev: 59.36179
Best fitness: 58.17210 - size: (13, 76) - species 2 - id 14463
Average adjusted fitness: 0.578
Mean genetic distance 2.302, standard deviation 0.739
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
      62 125
                    30.6 0.581
       37
           125
                    58.2
                            0.576
    2
                                    11
Total extinctions: 0
Generation time: 17.728 sec (17.527 average)
***** Running generation 63 *****
Population's average fitness: -43.48131 stdev: 61.06335
Best fitness: 56.78489 - size: (12, 71) - species 2 - id 14958
Average adjusted fitness: 0.580
Mean genetic distance 2.379, standard deviation 0.695
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
                    47.6
       63
           125
                            0.550
    1
       38
           125
                    56.8
                            0.609
Total extinctions: 0
Generation time: 17.311 sec (17.532 average)
***** Running generation 64 *****
Population's average fitness: -43.70875 stdev: 59.87766
Best fitness: 61.20825 - size: (12, 82) - species 2 - id 15214
Average adjusted fitness: 0.562
```

```
Mean genetic distance 2.380, standard deviation 0.664
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    1
      64 124
                  43.6 0.555
                                    1
                    61.2 0.568
       39 126
    2
                                    13
Total extinctions: 0
Generation time: 17.801 sec (17.596 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-64
***** Running generation 65 *****
Population's average fitness: -43.71533 stdev: 58.81323
Best fitness: 54.72482 - size: (12, 70) - species 2 - id 15231
Average adjusted fitness: 0.577
Mean genetic distance 2.399, standard deviation 0.637
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ---- --- ---- -----
        65
            127
                    45.4
                           0.599
    2
       40 123
                   54.7 0.555
Total extinctions: 0
Generation time: 17.039 sec (17.534 average)
***** Running generation 66 *****
Population's average fitness: -45.87143 stdev: 61.96459
Best fitness: 61.31237 - size: (13, 77) - species 2 - id 15665
Average adjusted fitness: 0.508
Mean genetic distance 2.392, standard deviation 0.650
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
      66 123
                   49.3 0.485
       41
            127
                    61.3
                           0.531
Total extinctions: 0
Generation time: 16.333 sec (17.250 average)
***** Running generation 67 *****
Population's average fitness: -47.58584 stdev: 62.65083
Best fitness: 55.06957 - size: (13, 79) - species 2 - id 15602
Average adjusted fitness: 0.566
Mean genetic distance 2.451, standard deviation 0.609
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
       67 123
                  51.7 0.554
    1
                                   a
           127
       42
                    55.1
                           0.578
Total extinctions: 0
Generation time: 15.740 sec (17.039 average)
***** Running generation 68 *****
Population's average fitness: -40.00347 stdev: 62.29949
Best fitness: 61.85449 - size: (12, 79) - species 2 - id 16064
Average adjusted fitness: 0.579
Mean genetic distance 2.446, standard deviation 0.619
Population of 250 members in 2 species:
```

```
age size fitness adj fit stag
  TD
           ==== ====== =====
                 55.3
           124
                         0.575
                                     0
    1
       68
    2
       43 126 61.9 0.583
                                    17
Total extinctions: 0
Generation time: 16.705 sec (17.022 average)
 ***** Running generation 69 *****
Population's average fitness: -41.58800 stdev: 63.71830
Best fitness: 55.30929 - size: (11, 78) - species 2 - id 16131
Average adjusted fitness: 0.486
Mean genetic distance 2.506, standard deviation 0.535
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                           0.475
    1
       69
           141
                    46.7
                                     1
        44 109
                    55.3
                           0.497
                                    18
    2
Total extinctions: 0
Generation time: 16.781 sec (17.017 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-69
 ***** Running generation 70 *****
Population's average fitness: -43.84949 stdev: 65.07759
Best fitness: 57.95397 - size: (13, 75) - species 2 - id 16553
Average adjusted fitness: 0.547
Mean genetic distance 2.512, standard deviation 0.548
Population of 250 members in 2 species:
       age size fitness adj fit stag
  TD
 ==== === ===== ===== ====
           110 50.1 0.516
       70
    1
       45 140
                    58.0
                           0.579
Total extinctions: 0
Generation time: 16.433 sec (16.950 average)
 ***** Running generation 71 *****
Population's average fitness: -46.26960 stdev: 64.84274
Best fitness: 57.28543 - size: (12, 80) - species 2 - id 16293
Average adjusted fitness: 0.551
Mean genetic distance 2.457, standard deviation 0.570
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
           118
    1
        71
                   52.1
                         0.555
                                    3
                    57.3
                           0.548
    2
        46 132
Total extinctions: 0
Generation time: 15.772 sec (16.764 average)
 ***** Running generation 72 *****
Population's average fitness: -45.01560 stdev: 65.10231
Best fitness: 52.38310 - size: (11, 74) - species 2 - id 16808
Average adjusted fitness: 0.659
Mean genetic distance 2.385, standard deviation 0.565
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
```

```
1
        72
             119
                     49.0
                             0.625
                                       4
    2
        47
             131
                     52.4
                             0.693
                                      21
Total extinctions: 0
Generation time: 16.028 sec (16.594 average)
***** Running generation 73 *****
Population's average fitness: -49.23914 stdev: 63.66355
Best fitness: 55.59897 - size: (14, 73) - species 2 - id 17199
Average adjusted fitness: 0.517
Mean genetic distance 2.272, standard deviation 0.607
Population of 250 members in 2 species:
       age size fitness adj fit stag
            ====
                  ======= =====
       ===
    1
       73
             123
                     49.3
                             0.522
    2
       48
            127
                     55.6
                             0.512
                                      22
Total extinctions: 0
Generation time: 15.934 sec (16.457 average)
***** Running generation 74 *****
Population's average fitness: -45.36728 stdev: 66.15076
Best fitness: 56.49914 - size: (11, 73) - species 2 - id 17509
Average adjusted fitness: 0.619
Mean genetic distance 2.247, standard deviation 0.637
Population of 250 members in 2 species:
       age size fitness adj fit stag
            ==== ====== =====
        74
                     55.0
                             0.603
    1
             122
                                       6
    2
        49
            128
                     56.5
                             0.634
                                      23
Total extinctions: 0
Generation time: 15.900 sec (16.267 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-74
 ***** Running generation 75 *****
Population's average fitness: -38.97817 stdev: 65.24307
Best fitness: 54.92672 - size: (14, 85) - species 1 - id 17647
Average adjusted fitness: 0.560
Mean genetic distance 2.228, standard deviation 0.685
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ====
       === ====
                 ====== ===== ====
    1
       75
             123
                     54.9
                             0.554
                                       7
    2
             127
        50
                     53.6
                             0.566
                                      24
Total extinctions: 0
Generation time: 16.233 sec (16.186 average)
 ***** Running generation 76 *****
Population's average fitness: -43.15509 stdev: 63.00713
Best fitness: 55.03983 - size: (14, 85) - species 1 - id 17647
Average adjusted fitness: 0.500
Mean genetic distance 2.221, standard deviation 0.707
Population of 250 members in 2 species:
       age size fitness adj fit stag
   ΙD
       ===
            ====
                  =======
                             0.454
                                       8
    1
        76
             118
                     55.0
    2
        51
             132
                     51.6
                             0.545
                                      25
```

```
Total extinctions: 0
Generation time: 16.164 sec (16.169 average)
***** Running generation 77 *****
Population's average fitness: -40.58893 stdev: 64.63200
Best fitness: 56.05250 - size: (15, 87) - species 1 - id 17573
Average adjusted fitness: 0.545
Mean genetic distance 2.212, standard deviation 0.729
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ====== ===== ====
      77
                    56.1
                            0.519
             119
                     55.8
    2
       52
            131
                            0.571
                                     26
Total extinctions: 0
Generation time: 16.161 sec (16.211 average)
***** Running generation 78 *****
Population's average fitness: -42.29872 stdev: 63.58875
Best fitness: 63.58570 - size: (12, 71) - species 2 - id 18101
Average adjusted fitness: 0.503
Mean genetic distance 2.259, standard deviation 0.701
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== =====
    1
       78
           120
                   55.9 0.480
                                    1
            130
    2
       53
                    63.6 0.527
                                     27
Total extinctions: 0
Generation time: 16.220 sec (16.163 average)
***** Running generation 79 *****
Population's average fitness: -40.33717 stdev: 64.58792
Best fitness: 55.18490 - size: (14, 79) - species 2 - id 18664
Average adjusted fitness: 0.546
Mean genetic distance 2.303, standard deviation 0.688
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
       79
            126
                   54.6 0.575
    2
       54
            124
                     55.2
                            0.517
                                     28
Total extinctions: 0
Generation time: 16.640 sec (16.148 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-79
***** Running generation 80 *****
Population's average fitness: -40.30831 stdev: 64.67697
Best fitness: 63.20191 - size: (13, 81) - species 1 - id 18537
Average adjusted fitness: 0.552
Mean genetic distance 2.289, standard deviation 0.723
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
       80
             124
                     63.2
                            0.543
    1
    2
        55
            126
                    57.7
                            0.561
Total extinctions: 0
Generation time: 16.565 sec (16.162 average)
```

```
***** Running generation 81 *****
Population's average fitness: -46.47397 stdev: 63.57065
Best fitness: 61.59320 - size: (13, 81) - species 1 - id 18537
Average adjusted fitness: 0.509
Mean genetic distance 2.250, standard deviation 0.694
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== ====
                                     1
       81
            125
                    61.6 0.511
                    53.7
                            0.506
       56
            125
Total extinctions: 0
Generation time: 15.320 sec (16.116 average)
 ***** Running generation 82 *****
Population's average fitness: -42.13404 stdev: 63.70879
Best fitness: 63.15519 - size: (15, 81) - species 2 - id 19223
Average adjusted fitness: 0.570
Mean genetic distance 2.235, standard deviation 0.692
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ====== ===== ====
        82
            126
                    54.8
                           0.579
                            0.562
        57
            124
                     63.2
    2
                                     31
Total extinctions: 0
Generation time: 16.866 sec (16.200 average)
 ***** Running generation 83 *****
Population's average fitness: -35.38489 stdev: 63.40810
Best fitness: 64.06861 - size: (13, 71) - species 2 - id 19543
Average adjusted fitness: 0.564
Mean genetic distance 2.287, standard deviation 0.630
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
        83
             125
                     59.4
                            0.568
        58
             125
                     64.1
                            0.561
                                     32
    2
Total extinctions: 0
Generation time: 16.853 sec (16.292 average)
 ***** Running generation 84 *****
Population's average fitness: -50.38329 stdev: 65.45838
Best fitness: 62.90453 - size: (13, 71) - species 2 - id 19543
Average adjusted fitness: 0.480
Mean genetic distance 2.347, standard deviation 0.597
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
       84
           120
                     60.4
                            0.441
                                     4
    1
        59
             130
                     62.9
                            0.519
                                     33
Total extinctions: 0
Generation time: 14.311 sec (16.133 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-84
 ***** Running generation 85 *****
```

```
Population's average fitness: -45.32760 stdev: 66.34146
Best fitness: 64.19286 - size: (13, 84) - species 1 - id 19133
Average adjusted fitness: 0.450
Mean genetic distance 2.342, standard deviation 0.651
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 85
                    64.2 0.406
                                    a
             116
        60
            134
                    58.8
                            0.494
                                    34
Total extinctions: 0
Generation time: 14.597 sec (15.970 average)
 ***** Running generation 86 *****
Population's average fitness: -44.10905 stdev: 66.80561
Best fitness: 61.38202 - size: (14, 88) - species 1 - id 20208
Average adjusted fitness: 0.593
Mean genetic distance 2.391, standard deviation 0.634
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
                   61.4 0.621
      86 123
                    59.0 0.564
       61 127
                                    35
Total extinctions: 0
Generation time: 15.274 sec (15.881 average)
***** Running generation 87 *****
Population's average fitness: -46.42613 stdev: 64.00130
Best fitness: 60.17746 - size: (14, 69) - species 2 - id 19970
Average adjusted fitness: 0.499
Mean genetic distance 2.449, standard deviation 0.621
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
      87 124
                   56.4 0.502
       62 126
                    60.2
                            0.497
    2
                                    36
Total extinctions: 0
Generation time: 15.230 sec (15.788 average)
***** Running generation 88 *****
Population's average fitness: -47.63988 stdev: 64.69055
Best fitness: 60.66732 - size: (13, 80) - species 1 - id 19932
Average adjusted fitness: 0.559
Mean genetic distance 2.484, standard deviation 0.651
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
       88
           126
                    60.7
                            0.570
    1
    2
       63
            124
                    58.8
                            0.548
Total extinctions: 0
Generation time: 15.703 sec (15.736 average)
***** Running generation 89 *****
Population's average fitness: -47.88088 stdev: 65.84576
Best fitness: 66.82922 - size: (13, 80) - species 1 - id 19932
Average adjusted fitness: 0.558
```

```
Mean genetic distance 2.542, standard deviation 0.620
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
    1
      89 127
                  66.8 0.573
       64 123
                    61.5 0.542
    2
Total extinctions: 0
Generation time: 14.964 sec (15.568 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-89
***** Running generation 90 *****
Population's average fitness: -46.44556 stdev: 66.78009
Best fitness: 67.93063 - size: (15, 87) - species 1 - id 19916
Average adjusted fitness: 0.541
Mean genetic distance 2.504, standard deviation 0.612
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ---- --- ---- -----
       90
            124
                   67.9
                           0.521
    2 65 126
                  64.2 0.560
Total extinctions: 0
Generation time: 15.818 sec (15.494 average)
***** Running generation 91 *****
Population's average fitness: -31.96108 stdev: 62.82774
Best fitness: 60.93028 - size: (14, 67) - species 2 - id 21238
Average adjusted fitness: 0.647
Mean genetic distance 2.507, standard deviation 0.654
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
      91 123
                  54.1 0.629
       66
           127
                    60.9
                           0.666
Total extinctions: 0
Generation time: 17.897 sec (15.751 average)
***** Running generation 92 *****
Population's average fitness: -55.89623 stdev: 63.12172
Best fitness: 59.11464 - size: (11, 74) - species 2 - id 21639
Average adjusted fitness: 0.395
Mean genetic distance 2.483, standard deviation 0.668
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
       92 126
                  58.1 0.411
                                   2
    1
           124
       67
                    59.1
                           0.380
Total extinctions: 0
Generation time: 13.680 sec (15.433 average)
***** Running generation 93 *****
Population's average fitness: -45.64424 stdev: 64.46573
Best fitness: 62.14340 - size: (11, 74) - species 2 - id 21639
Average adjusted fitness: 0.415
Mean genetic distance 2.454, standard deviation 0.658
Population of 250 members in 2 species:
```

```
age size fitness adj fit stag
  TD
           ==== ====== =====
                 60.3
                         0.390
       93
           122
                                     3
    1
    2
       68 128 62.1 0.440
                                    42
Total extinctions: 0
Generation time: 15.027 sec (15.250 average)
 ***** Running generation 94 *****
Population's average fitness: -57.34121 stdev: 64.31242
Best fitness: 65.91418 - size: (11, 74) - species 2 - id 21639
Average adjusted fitness: 0.463
Mean genetic distance 2.345, standard deviation 0.715
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1
       94
           121
                   61.4
                           0.443
        69 129
                    65.9
                           0.482
                                    43
Total extinctions: 0
Generation time: 13.683 sec (15.187 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-94
 ***** Running generation 95 *****
Population's average fitness: -36.03640 stdev: 62.98668
Best fitness: 60.76823 - size: (16, 95) - species 1 - id 20983
Average adjusted fitness: 0.600
Mean genetic distance 2.412, standard deviation 0.664
Population of 250 members in 2 species:
       age size fitness adj fit stag
  TD
 ==== === ===== ===== ====
       95
           123 60.8 0.600
    1
       70 127
                   57.1
                           0.600
Total extinctions: 0
Generation time: 17.727 sec (15.500 average)
 ***** Running generation 96 *****
Population's average fitness: -30.92878 stdev: 65.52472
Best fitness: 63.11544 - size: (13, 77) - species 1 - id 21783
Average adjusted fitness: 0.522
Mean genetic distance 2.322, standard deviation 0.712
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1
        96
           121
                  63.1
                         0.501
                                    6
        71 129
                    59.8
                           0.543
    2
Total extinctions: 0
Generation time: 17.565 sec (15.729 average)
 ***** Running generation 97 *****
Population's average fitness: -47.28904 stdev: 67.70342
Best fitness: 60.67600 - size: (16, 92) - species 1 - id 22822
Average adjusted fitness: 0.517
Mean genetic distance 2.287, standard deviation 0.727
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
```

```
1
        97
             120
                     60.7
                             0.490
                                       7
    2
        72
             130
                     59.0
                             0.544
                                      46
Total extinctions: 0
Generation time: 14.754 sec (15.682 average)
***** Running generation 98 *****
Population's average fitness: -54.40212 stdev: 66.20831
Best fitness: 59.44591 - size: (16, 94) - species 1 - id 22536
Average adjusted fitness: 0.501
Mean genetic distance 2.293, standard deviation 0.675
Population of 250 members in 2 species:
       age size fitness adj fit stag
                 =======
       ===
            ====
    1
       98
             119
                     59.4
                             0.475
    2
        73
            131
                     58.5
                             0.527
                                      47
Total extinctions: 0
Generation time: 14.039 sec (15.515 average)
***** Running generation 99 *****
Population's average fitness: -48.09209 stdev: 64.31324
Best fitness: 61.03354 - size: (11, 70) - species 2 - id 22888
Average adjusted fitness: 0.479
Mean genetic distance 2.261, standard deviation 0.713
Population of 250 members in 2 species:
       age size fitness adj fit stag
            ====
                 ====== ====
        99
             123
                     60.4
                             0.484
    1
    2
       74
            127
                     61.0
                             0.474
                                      48
Total extinctions: 0
Generation time: 15.106 sec (15.530 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-99
 ***** Running generation 100 *****
Population's average fitness: -50.58296 stdev: 66.02462
Best fitness: 63.78032 - size: (16, 86) - species 1 - id 23299
Average adjusted fitness: 0.495
Mean genetic distance 2.281, standard deviation 0.691
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 100
             122
                     63.8
                             0.479
                                      10
    2
        75
             128
                             0.510
                                      49
                     62.7
Total extinctions: 0
Generation time: 15.056 sec (15.453 average)
 ***** Running generation 101 *****
Population's average fitness: -45.99708 stdev: 65.40168
Best fitness: 67.05406 - size: (10, 68) - species 2 - id 23550
Average adjusted fitness: 0.538
Mean genetic distance 2.349, standard deviation 0.731
Population of 250 members in 2 species:
       age size fitness adj fit stag
   ΙD
       ===
            ====
                  =======
    1
      101
             121
                     60.7
                             0.516
                                      11
    2
        76
             129
                     67.1
                             0.560
                                       0
```

```
Total extinctions: 0
Generation time: 15.852 sec (15.249 average)
***** Running generation 102 *****
Population's average fitness: -53.70284 stdev: 66.02563
Best fitness: 64.25770 - size: (11, 70) - species 2 - id 23970
Average adjusted fitness: 0.496
Mean genetic distance 2.368, standard deviation 0.667
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    1 102
            117
                    56.9
                            0.451
                    64.3
    2
       77
            133
                            0.541
Total extinctions: 0
Generation time: 14.283 sec (15.309 average)
***** Running generation 103 *****
Population's average fitness: -46.53940 stdev: 64.84796
Best fitness: 60.04723 - size: (16, 76) - species 2 - id 24190
Average adjusted fitness: 0.489
Mean genetic distance 2.395, standard deviation 0.622
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 103
           122 56.6 0.496 13
           128
    2
       78
                    60.0 0.483
                                     2
Total extinctions: 0
Generation time: 14.731 sec (15.280 average)
***** Running generation 104 *****
Population's average fitness: -55.86293 stdev: 63.85541
Best fitness: 64.54567 - size: (18, 80) - species 2 - id 24420
Average adjusted fitness: 0.462
Mean genetic distance 2.421, standard deviation 0.661
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 104
           128 61.9 0.492 14
       79
    2
           122
                    64.5
                            0.431
                                    3
Total extinctions: 0
Generation time: 14.319 sec (15.343 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-104
***** Running generation 105 *****
Population's average fitness: -50.98001 stdev: 68.78489
Best fitness: 67.75711 - size: (18, 77) - species 2 - id 24660
Average adjusted fitness: 0.604
Mean genetic distance 2.509, standard deviation 0.598
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 105
           123
                    64.4
                            0.572
    2
       80
            127
                    67.8
                            0.636
Total extinctions: 0
Generation time: 15.566 sec (15.127 average)
```

```
***** Running generation 106 *****
Population's average fitness: -53.29816 stdev: 68.78124
Best fitness: 63.26865 - size: (17, 73) - species 2 - id 24824
Average adjusted fitness: 0.536
Mean genetic distance 2.509, standard deviation 0.656
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== =====
                   55.6 0.515
    1 106
            122
                                  16
                    63.3
                            0.558
       81
           128
Total extinctions: 0
Generation time: 13.996 sec (14.770 average)
 ***** Running generation 107 *****
Population's average fitness: -41.30273 stdev: 65.26174
Best fitness: 69.67501 - size: (13, 80) - species 1 - id 24986
Average adjusted fitness: 0.443
Mean genetic distance 2.469, standard deviation 0.693
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ---- --- ---- -----
    1 107
            120
                    69.7
                            0.416
                    58.1
                            0.470
       82
            130
    2
Total extinctions: 0
Generation time: 15.636 sec (14.858 average)
 ***** Running generation 108 *****
Population's average fitness: -47.22066 stdev: 66.82110
Best fitness: 63.83825 - size: (17, 74) - species 2 - id 25140
Average adjusted fitness: 0.541
Mean genetic distance 2.493, standard deviation 0.636
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    1 108
            118
                    56.6
                            0.504
        83
             132
                    63.8
                            0.578
    2
Total extinctions: 0
Generation time: 14.406 sec (14.895 average)
 ***** Running generation 109 *****
Population's average fitness: -47.11359 stdev: 69.21540
Best fitness: 68.83318 - size: (18, 78) - species 2 - id 25540
Average adjusted fitness: 0.481
Mean genetic distance 2.478, standard deviation 0.667
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 109
           123
                    64.6
                            0.493
        84
             127
                    68.8
                            0.469
Total extinctions: 0
Generation time: 14.435 sec (14.828 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-109
 ***** Running generation 110 *****
```

```
Population's average fitness: -42.04127 stdev: 67.60697
Best fitness: 69.68507 - size: (12, 83) - species 1 - id 25663
Average adjusted fitness: 0.473
Mean genetic distance 2.474, standard deviation 0.681
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 110
                    69.7
                            0.473
                                     a
             124
        85
            126
                    63.6
                            0.472
Total extinctions: 0
Generation time: 14.763 sec (14.799 average)
 ***** Running generation 111 *****
Population's average fitness: -45.48173 stdev: 67.12655
Best fitness: 65.64430 - size: (18, 74) - species 2 - id 25869
Average adjusted fitness: 0.550
Mean genetic distance 2.552, standard deviation 0.622
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
                   59.1 0.579
    1 111 128
                    65.6 0.521
           122
       86
Total extinctions: 0
Generation time: 14.885 sec (14.702 average)
***** Running generation 112 *****
Population's average fitness: -45.59295 stdev: 67.88187
Best fitness: 91.03629 - size: (17, 71) - species 2 - id 26244
Average adjusted fitness: 0.392
Mean genetic distance 2.513, standard deviation 0.657
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 112 124
                   64.4 0.374
       87 126
                    91.0
                            0.410
    2
Total extinctions: 0
Generation time: 14.781 sec (14.752 average)
***** Running generation 113 *****
Population's average fitness: -46.68662 stdev: 68.26607
Best fitness: 72.96450 - size: (18, 79) - species 2 - id 26410
Average adjusted fitness: 0.460
Mean genetic distance 2.479, standard deviation 0.685
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 113 125
                    63.4
                            0.459
    2
       88
           125
                    73.0
                            0.462
Total extinctions: 0
Generation time: 14.786 sec (14.757 average)
***** Running generation 114 *****
Population's average fitness: -35.31882 stdev: 68.82608
Best fitness: 82.89153 - size: (18, 79) - species 2 - id 26410
Average adjusted fitness: 0.499
```

```
Mean genetic distance 2.501, standard deviation 0.702
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    1 114 124
                   78.6 0.490
       89 126
                  82.9 0.508
    2
Total extinctions: 0
Generation time: 16.217 sec (14.947 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-114
***** Running generation 115 *****
Population's average fitness: -42.47619 stdev: 66.26628
Best fitness: 67.85119 - size: (17, 74) - species 2 - id 26924
Average adjusted fitness: 0.482
Mean genetic distance 2.459, standard deviation 0.720
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    1 115
            127
                    66.0
                           0.501
    2 90 123
                   67.9 0.462
Total extinctions: 0
Generation time: 15.210 sec (14.911 average)
***** Running generation 116 *****
Population's average fitness: -36.24017 stdev: 65.58600
Best fitness: 71.36216 - size: (17, 76) - species 2 - id 27120
Average adjusted fitness: 0.521
Mean genetic distance 2.466, standard deviation 0.754
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
    1 116 128
                   65.0
                         0.531
       91
            122
                    71.4
                           0.510
Total extinctions: 0
Generation time: 16.513 sec (15.163 average)
***** Running generation 117 *****
Population's average fitness: -43.74136 stdev: 68.00960
Best fitness: 73.25800 - size: (20, 81) - species 2 - id 27353
Average adjusted fitness: 0.502
Mean genetic distance 2.461, standard deviation 0.765
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 117 122
                  68.7 0.465
           128
       92
                    73.3
                            0.539
Total extinctions: 0
Generation time: 15.175 sec (15.117 average)
***** Running generation 118 *****
Population's average fitness: -41.21742 stdev: 66.43498
Best fitness: 67.37788 - size: (17, 73) - species 2 - id 27365
Average adjusted fitness: 0.466
Mean genetic distance 2.445, standard deviation 0.769
Population of 250 members in 2 species:
```

```
age size fitness adj fit stag
  TD
           ==== ====== =====
                         0.438
           120 65.5
    1 118
    2
       93 130 67.4 0.494
                                     6
Total extinctions: 0
Generation time: 15.215 sec (15.198 average)
 ***** Running generation 119 *****
Population's average fitness: -41.17058 stdev: 68.35252
Best fitness: 66.50590 - size: (17, 73) - species 2 - id 27365
Average adjusted fitness: 0.509
Mean genetic distance 2.475, standard deviation 0.737
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 119
           118
                           0.476
                   64.5
       94 132
                   66.5 0.542
Total extinctions: 0
Generation time: 15.222 sec (15.277 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-119
 ***** Running generation 120 *****
Population's average fitness: -48.27108 stdev: 65.77127
Best fitness: 70.14018 - size: (16, 70) - species 2 - id 27849
Average adjusted fitness: 0.471
Mean genetic distance 2.451, standard deviation 0.724
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 120 121 63.0 0.470
      95 129
                   70.1
                           0.472
Total extinctions: 0
Generation time: 14.610 sec (15.261 average)
 ***** Running generation 121 *****
Population's average fitness: -48.83684 stdev: 66.43671
Best fitness: 65.51230 - size: (16, 76) - species 2 - id 28292
Average adjusted fitness: 0.499
Mean genetic distance 2.446, standard deviation 0.731
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    1 121
           124
                 61.5
                         0.508
                                    7
       96 126
                   65.5
                           0.490
Total extinctions: 0
Generation time: 14.382 sec (15.211 average)
 ***** Running generation 122 *****
Population's average fitness: -33.60975 stdev: 66.97191
Best fitness: 70.15747 - size: (14, 81) - species 1 - id 26792
Average adjusted fitness: 0.646
Mean genetic distance 2.352, standard deviation 0.806
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
```

```
8
    1 122
             123
                     70.2
                             0.636
    2
        97
             127
                     66.8
                            0.656
                                     10
Total extinctions: 0
Generation time: 16.634 sec (15.396 average)
***** Running generation 123 *****
Population's average fitness: -52.02079 stdev: 64.37291
Best fitness: 72.75368 - size: (16, 74) - species 2 - id 28567
Average adjusted fitness: 0.478
Mean genetic distance 2.385, standard deviation 0.817
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ======
    1 123
            125
                     61.4
                            0.483
    2
       98
            125
                     72.8
                            0.473
                                     11
Total extinctions: 0
Generation time: 14.494 sec (15.367 average)
***** Running generation 124 *****
Population's average fitness: -39.56925 stdev: 67.15977
Best fitness: 66.25986 - size: (15, 74) - species 2 - id 28950
Average adjusted fitness: 0.468
Mean genetic distance 2.329, standard deviation 0.868
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== =====
  ==== ===
            122
                     62.7
                            0.444
    1 124
                                     10
    2
       99
            128
                     66.3
                            0.492
                                     12
Total extinctions: 0
Generation time: 15.590 sec (15.305 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-124
 ***** Running generation 125 *****
Population's average fitness: -36.58055 stdev: 68.08196
Best fitness: 63.20880 - size: (14, 70) - species 2 - id 29011
Average adjusted fitness: 0.577
Mean genetic distance 2.398, standard deviation 0.832
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 125
             123
                     61.5
                            0.568
                                     11
    2 100
                            0.586
             127
                     63.2
                                     13
Total extinctions: 0
Generation time: 15.862 sec (15.370 average)
 ***** Running generation 126 *****
Population's average fitness: -36.47751 stdev: 66.95829
Best fitness: 71.03686 - size: (16, 73) - species 2 - id 29410
Average adjusted fitness: 0.579
Mean genetic distance 2.444, standard deviation 0.810
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
       === ====
                 ====== =====
                            0.551
    1 126
             121
                     61.8
                                     12
    2 101
             129
                     71.0
                            0.607
                                     14
```

```
Total extinctions: 0
Generation time: 16.333 sec (15.352 average)
***** Running generation 127 *****
Population's average fitness: -40.71397 stdev: 68.89486
Best fitness: 70.04692 - size: (17, 71) - species 2 - id 29721
Average adjusted fitness: 0.489
Mean genetic distance 2.465, standard deviation 0.820
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 127
            125
                    63.0
                            0.505
                                  13
                    70.0
    2 102
           125
                            0.473
                                    15
Total extinctions: 0
Generation time: 14.471 sec (15.281 average)
***** Running generation 128 *****
Population's average fitness: -33.52034 stdev: 67.80612
Best fitness: 63.66598 - size: (16, 71) - species 2 - id 29889
Average adjusted fitness: 0.487
Mean genetic distance 2.497, standard deviation 0.778
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 128
           128 61.6 0.509
                                  14
           122
    2 103
                    63.7 0.464
                                    16
Total extinctions: 0
Generation time: 15.880 sec (15.348 average)
***** Running generation 129 *****
Population's average fitness: -42.32754 stdev: 67.66309
Best fitness: 68.90874 - size: (17, 78) - species 2 - id 30149
Average adjusted fitness: 0.421
Mean genetic distance 2.463, standard deviation 0.745
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 129
           121
                   65.1 0.383 15
    2 104
           129
                    68.9
                            0.458
                                    17
Total extinctions: 0
Generation time: 15.050 sec (15.331 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-129
***** Running generation 130 *****
Population's average fitness: -35.50675 stdev: 68.36409
Best fitness: 69.67078 - size: (16, 68) - species 2 - id 30127
Average adjusted fitness: 0.544
Mean genetic distance 2.454, standard deviation 0.716
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 130
            122
                    59.9
                            0.536
                                    16
    2 105
            128
                    69.7
                            0.552
Total extinctions: 0
Generation time: 16.403 sec (15.510 average)
```

```
***** Running generation 131 *****
Population's average fitness: -38.97645 stdev: 66.63889
Best fitness: 68.53765 - size: (17, 78) - species 2 - id 30149
Average adjusted fitness: 0.483
Mean genetic distance 2.523, standard deviation 0.745
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
                   57.7 0.487
    1 131
           124
                                    17
                    68.5
                            0.478
    2 106 126
Total extinctions: 0
Generation time: 15.476 sec (15.619 average)
 ***** Running generation 132 *****
Population's average fitness: -42.91879 stdev: 69.10288
Best fitness: 67.72920 - size: (16, 77) - species 2 - id 30338
Average adjusted fitness: 0.686
Mean genetic distance 2.448, standard deviation 0.766
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ---- --- ---- -----
    1 132
            125
                    62.2
                           0.687
                                    18
    2 107
                    67.7
                            0.686
            125
                                     20
Total extinctions: 0
Generation time: 15.188 sec (15.475 average)
 ***** Running generation 133 *****
Population's average fitness: -40.67735 stdev: 65.98678
Best fitness: 73.32289 - size: (16, 72) - species 2 - id 30133
Average adjusted fitness: 0.500
Mean genetic distance 2.425, standard deviation 0.781
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    1 133
            124
                    62.9
                            0.499
                                     19
    2 108
            126
                    73.3
                            0.501
                                    21
Total extinctions: 0
Generation time: 16.052 sec (15.630 average)
 ***** Running generation 134 *****
Population's average fitness: -44.13977 stdev: 68.47942
Best fitness: 74.44224 - size: (14, 65) - species 2 - id 31310
Average adjusted fitness: 0.527
Mean genetic distance 2.447, standard deviation 0.790
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 134
                                    20
           125
                    61.6
                            0.528
      109
             125
                    74.4
                            0.527
                                     22
Total extinctions: 0
Generation time: 14.926 sec (15.564 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-134
 ***** Running generation 135 *****
```

```
Population's average fitness: -26.97107 stdev: 68.40343
Best fitness: 69.43736 - size: (14, 76) - species 1 - id 31418
Average adjusted fitness: 0.500
Mean genetic distance 2.528, standard deviation 0.699
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 135
            122
                   69.4
                           0.472
                                    21
    2 110
            128
                    66.7
                           0.528
                                    23
Total extinctions: 0
Generation time: 16.943 sec (15.672 average)
 ***** Running generation 136 *****
Population's average fitness: -27.99850 stdev: 71.36891
Best fitness: 69.81982 - size: (14, 65) - species 2 - id 31598
Average adjusted fitness: 0.516
Mean genetic distance 2.585, standard deviation 0.714
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
                  64.7 0.503
    1 136 121
                    69.8 0.530
    2 111 129
                                    24
Total extinctions: 0
Generation time: 16.151 sec (15.654 average)
***** Running generation 137 *****
Population's average fitness: -37.25417 stdev: 68.20602
Best fitness: 73.43192 - size: (13, 79) - species 1 - id 31812
Average adjusted fitness: 0.433
Mean genetic distance 2.609, standard deviation 0.666
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 137 120
                   73.4 0.414
                                    23
    2 112 130
                    70.5
                           0.452
                                    25
Total extinctions: 0
Generation time: 15.602 sec (15.767 average)
***** Running generation 138 *****
Population's average fitness: -38.65964 stdev: 70.78211
Best fitness: 73.95604 - size: (12, 55) - species 2 - id 32019
Average adjusted fitness: 0.469
Mean genetic distance 2.614, standard deviation 0.655
Population of 250 members in 2 species:
       age size fitness adj fit stag
  0.472
    1 138 123
                    65.6
    2 113
            127
                    74.0
                           0.465
Total extinctions: 0
Generation time: 14.940 sec (15.673 average)
***** Running generation 139 *****
Population's average fitness: -41.00087 stdev: 70.53562
Best fitness: 74.30719 - size: (11, 49) - species 2 - id 32382
Average adjusted fitness: 0.566
```

```
Mean genetic distance 2.570, standard deviation 0.709
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    1 139 122
                   74.0 0.546 25
    2 114 128
                           0.585
                   74.3
Total extinctions: 0
Generation time: 15.123 sec (15.681 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-139
***** Running generation 140 *****
Population's average fitness: -28.23960 stdev: 67.75243
Best fitness: 75.60495 - size: (17, 72) - species 2 - id 32627
Average adjusted fitness: 0.508
Mean genetic distance 2.521, standard deviation 0.696
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ===== ===== ====
    1 140
            121
                    63.2
                           0.495
    2 115 129
                   75.6 0.522
                                    28
Total extinctions: 0
Generation time: 16.735 sec (15.714 average)
***** Running generation 141 *****
Population's average fitness: -39.19921 stdev: 67.51538
Best fitness: 71.61705 - size: (16, 72) - species 2 - id 32947
Average adjusted fitness: 0.484
Mean genetic distance 2.524, standard deviation 0.700
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
    1 141 122
                   64.7 0.472
                                    27
    2 116
           128
                    71.6
                            0.495
Total extinctions: 0
Generation time: 15.353 sec (15.701 average)
***** Running generation 142 *****
Population's average fitness: -46.88753 stdev: 67.94616
Best fitness: 70.51806 - size: (15, 67) - species 2 - id 33153
Average adjusted fitness: 0.479
Mean genetic distance 2.557, standard deviation 0.725
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 142 125
                  64.1 0.493 28
           125
    2 117
                    70.5
                            0.465
Total extinctions: 0
Generation time: 14.513 sec (15.634 average)
***** Running generation 143 *****
Population's average fitness: -40.50610 stdev: 68.88112
Best fitness: 70.53186 - size: (16, 66) - species 2 - id 33393
Average adjusted fitness: 0.530
Mean genetic distance 2.465, standard deviation 0.766
Population of 250 members in 2 species:
```

```
age size fitness adj fit stag
  TD
           ==== ====== =====
           123
                 62.3
                         0.509
    1 143
                                    29
    2 118 127
                   70.5 0.551
                                    31
Total extinctions: 0
Generation time: 14.873 sec (15.516 average)
 ***** Running generation 144 *****
Population's average fitness: -33.19717 stdev: 68.61583
Best fitness: 73.84114 - size: (13, 63) - species 2 - id 33343
Average adjusted fitness: 0.488
Mean genetic distance 2.491, standard deviation 0.766
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 144
           122
                    68.5
                           0.471
                                    30
    2 119 128
                    73.8 0.505
                                    32
Total extinctions: 0
Generation time: 15.908 sec (15.614 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-144
 ***** Running generation 145 *****
Population's average fitness: -42.19265 stdev: 67.69870
Best fitness: 78.55813 - size: (12, 57) - species 2 - id 33629
Average adjusted fitness: 0.489
Mean genetic distance 2.502, standard deviation 0.784
Population of 250 members in 2 species:
       age size fitness adj fit stag
  TD
 ==== === ===== ===== ====
                                   31
    1 145 128 69.6 0.525
    2 120 122
                   78.6
                           0.452
Total extinctions: 0
Generation time: 15.032 sec (15.423 average)
 ***** Running generation 146 *****
Population's average fitness: -37.57972 stdev: 71.52847
Best fitness: 80.34486 - size: (16, 69) - species 2 - id 33802
Average adjusted fitness: 0.466
Mean genetic distance 2.504, standard deviation 0.722
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    1 146 127
                   70.6
                         0.469
                                    32
    2 121 123
                    80.3
                           0.464
Total extinctions: 0
Generation time: 15.015 sec (15.310 average)
 ***** Running generation 147 *****
Population's average fitness: -35.04170 stdev: 71.07302
Best fitness: 82.94737 - size: (16, 71) - species 2 - id 34321
Average adjusted fitness: 0.481
Mean genetic distance 2.468, standard deviation 0.713
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
```

```
1 147
             129
                     67.8
                            0.501
                                     33
    2
       122
             121
                     82.9
                            0.461
                                     35
Total extinctions: 0
Generation time: 15.893 sec (15.339 average)
***** Running generation 148 *****
Population's average fitness: -33.97448 stdev: 69.61733
Best fitness: 82.75348 - size: (16, 69) - species 2 - id 34455
Average adjusted fitness: 0.456
Mean genetic distance 2.441, standard deviation 0.826
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
                                     34
    1 148
            134
                     71.5
                            0.505
    2 123
           116
                     82.8
                            0.408
                                     36
Total extinctions: 0
Generation time: 15.715 sec (15.416 average)
***** Running generation 149 *****
Population's average fitness: -48.07266 stdev: 70.48189
Best fitness: 68.53585 - size: (17, 72) - species 2 - id 34754
Average adjusted fitness: 0.557
Mean genetic distance 2.493, standard deviation 0.816
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 149
             128
                     60.6
                            0.547
    2 124
            122
                     68.5
                            0.568
                                     37
Total extinctions: 0
Generation time: 14.230 sec (15.327 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-149
 ***** Running generation 150 *****
Population's average fitness: -39.54767 stdev: 71.96022
Best fitness: 120.57707 - size: (15, 79) - species 1 - id 34902
Average adjusted fitness: 0.487
Mean genetic distance 2.558, standard deviation 0.743
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 150
            127
                    120.6
                            0.498
                                      a
    2 125
                     75.6
                            0.475
             123
                                     38
Total extinctions: 0
Generation time: 14.970 sec (15.150 average)
 ***** Running generation 151 *****
Population's average fitness: -42.93754 stdev: 69.87491
Best fitness: 111.42704 - size: (15, 79) - species 1 - id 34902
Average adjusted fitness: 0.495
Mean genetic distance 2.546, standard deviation 0.713
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
       === ====
                 =======
                 111.4
                            0.466
    1 151
             122
                                      1
    2 126
             128
                    86.1
                            0.524
                                     39
```

```
Total extinctions: 0
Generation time: 14.767 sec (15.092 average)
***** Running generation 152 *****
Population's average fitness: -37.53300 stdev: 67.99027
Best fitness: 129.28407 - size: (15, 79) - species 1 - id 34902
Average adjusted fitness: 0.410
Mean genetic distance 2.544, standard deviation 0.725
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ===== ===== ====
    1 152
            127
                   129.3
                            0.434
    2 127
           123
                   78.2
                            0.386
                                    40
Total extinctions: 0
Generation time: 15.504 sec (15.191 average)
***** Running generation 153 *****
Population's average fitness: -38.00668 stdev: 69.26914
Best fitness: 115.34301 - size: (15, 79) - species 1 - id 34902
Average adjusted fitness: 0.487
Mean genetic distance 2.610, standard deviation 0.705
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 153
           125 115.3 0.483
                                    1
           125
    2 128
                   71.7 0.492
                                    41
Total extinctions: 0
Generation time: 15.415 sec (15.245 average)
***** Running generation 154 *****
Population's average fitness: -30.43132 stdev: 68.73997
Best fitness: 116.31597 - size: (15, 79) - species 1 - id 34902
Average adjusted fitness: 0.392
Mean genetic distance 2.576, standard deviation 0.723
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 154
           119 116.3 0.352
    2 129
           131
                   72.9
                            0.431
                                    42
Total extinctions: 0
Generation time: 16.214 sec (15.276 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-154
***** Running generation 155 *****
Population's average fitness: -45.22209 stdev: 70.17729
Best fitness: 107.71134 - size: (13, 66) - species 1 - id 36085
Average adjusted fitness: 0.446
Mean genetic distance 2.516, standard deviation 0.689
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 155
           125
                   107.7
                            0.467
                                     3
    2 130
            125
                    70.1
                            0.426
                                    43
Total extinctions: 0
Generation time: 14.420 sec (15.214 average)
```

```
***** Running generation 156 *****
Population's average fitness: -38.47082 stdev: 69.80796
Best fitness: 112.89259 - size: (13, 66) - species 1 - id 36085
Average adjusted fitness: 0.489
Mean genetic distance 2.509, standard deviation 0.641
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
                 112.9 0.485
    1 156
           124
                   77.7
                            0.493
    2 131 126
Total extinctions: 0
Generation time: 14.895 sec (15.202 average)
 ***** Running generation 157 *****
Population's average fitness: -44.66224 stdev: 70.98827
Best fitness: 113.52409 - size: (15, 79) - species 1 - id 34902
Average adjusted fitness: 0.417
Mean genetic distance 2.513, standard deviation 0.662
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ====== ===== ====
                  113.5
    1 157
            121
                            0.391
                            0.443
    2 132
           129
                    74.2
                                     45
Total extinctions: 0
Generation time: 14.354 sec (15.048 average)
 ***** Running generation 158 *****
Population's average fitness: -43.20220 stdev: 67.84398
Best fitness: 78.51710 - size: (13, 65) - species 1 - id 36760
Average adjusted fitness: 0.506
Mean genetic distance 2.524, standard deviation 0.739
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    1 158
            122
                    78.5
                            0.499
    2 133
            128
                    72.5
                            0.514
                                     46
Total extinctions: 0
Generation time: 14.788 sec (14.956 average)
 ***** Running generation 159 *****
Population's average fitness: -38.60050 stdev: 69.99944
Best fitness: 134.20255 - size: (13, 65) - species 1 - id 36760
Average adjusted fitness: 0.437
Mean genetic distance 2.493, standard deviation 0.833
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 159
            126
                  134.2
                            0.454
      134
             124
                    74.7
                            0.419
                                     47
Total extinctions: 0
Generation time: 14.735 sec (15.006 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-159
 ***** Running generation 160 *****
```

```
Population's average fitness: -42.39874 stdev: 72.09496
Best fitness: 134.28547 - size: (13, 65) - species 1 - id 36760
Average adjusted fitness: 0.352
Mean genetic distance 2.532, standard deviation 0.824
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 160
             127
                  134.3
                            0.357
                                    a
    2 135
            123
                    71.7
                            0.347
                                    48
Total extinctions: 0
Generation time: 14.557 sec (14.965 average)
 ***** Running generation 161 *****
Population's average fitness: -36.53492 stdev: 72.93988
Best fitness: 133.32424 - size: (13, 65) - species 1 - id 36760
Average adjusted fitness: 0.491
Mean genetic distance 2.538, standard deviation 0.806
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 161 124 133.3 0.474
                                    49
           126
                   72.7 0.508
    2 136
Total extinctions: 0
Generation time: 14.810 sec (14.969 average)
***** Running generation 162 *****
Population's average fitness: -39.55382 stdev: 73.93001
Best fitness: 133.72712 - size: (13, 68) - species 1 - id 37078
Average adjusted fitness: 0.369
Mean genetic distance 2.563, standard deviation 0.772
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 162 122 133.7 0.353
    2 137 128
                    87.3
                            0.386
                                    50
Total extinctions: 0
Generation time: 14.320 sec (14.851 average)
***** Running generation 163 *****
Population's average fitness: -49.48896 stdev: 74.55106
Best fitness: 140.54450 - size: (13, 71) - species 1 - id 37934
Average adjusted fitness: 0.303
Mean genetic distance 2.648, standard deviation 0.736
Population of 250 members in 2 species:
       age size fitness adj fit stag
      === ==== ===== ====
                 140.5
           124
                            0.304
    1 163
    2 138
           126
                   72.1
                            0.303
Total extinctions: 0
Generation time: 12.807 sec (14.590 average)
***** Running generation 164 *****
Population's average fitness: -41.06246 stdev: 79.64194
Best fitness: 151.72218 - size: (13, 71) - species 1 - id 38236
Average adjusted fitness: 0.425
```

```
Mean genetic distance 2.654, standard deviation 0.711
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    1 164 122 151.7 0.407
    2 139 128
                   76.1
                           0.442
Total extinctions: 0
Generation time: 14.499 sec (14.418 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-164
***** Running generation 165 *****
Population's average fitness: -39.54070 stdev: 81.88126
Best fitness: 147.33427 - size: (12, 58) - species 1 - id 38414
Average adjusted fitness: 0.423
Mean genetic distance 2.494, standard deviation 0.751
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ===== ===== ====
    1 165
            121
                   147.3
                           0.413
    2 140 129
                   78.5 0.433
Total extinctions: 0
Generation time: 13.092 sec (14.286 average)
***** Running generation 166 *****
Population's average fitness: -37.17782 stdev: 83.13142
Best fitness: 159.60337 - size: (12, 58) - species 1 - id 38595
Average adjusted fitness: 0.333
Mean genetic distance 2.428, standard deviation 0.811
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
    1 166 127 159.6 0.353
    2 141
           123
                   75.4
                           0.313
Total extinctions: 0
Generation time: 14.127 sec (14.209 average)
***** Running generation 167 *****
Population's average fitness: -39.06059 stdev: 81.50595
Best fitness: 157.96188 - size: (13, 71) - species 1 - id 38236
Average adjusted fitness: 0.364
Mean genetic distance 2.443, standard deviation 0.815
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 167 132 158.0 0.401
                                    1
           118
    2 142
                   81.2
                            0.327
Total extinctions: 0
Generation time: 14.681 sec (14.241 average)
***** Running generation 168 *****
Population's average fitness: -38.27340 stdev: 88.26449
Best fitness: 184.43779 - size: (12, 58) - species 1 - id 38414
Average adjusted fitness: 0.384
Mean genetic distance 2.403, standard deviation 0.814
Population of 250 members in 2 species:
```

```
age size fitness adj fit stag
  TD
           ==== ====== =====
                 184.4
           133
                         0.408
                                     0
    1 168
    2 143 117
                   78.0 0.360
                                    56
Total extinctions: 0
Generation time: 14.255 sec (14.188 average)
 ***** Running generation 169 *****
Population's average fitness: -24.58127 stdev: 91.82271
Best fitness: 183.00291 - size: (13, 67) - species 1 - id 39344
Average adjusted fitness: 0.426
Mean genetic distance 2.376, standard deviation 0.810
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 169
           129
                  183.0
                           0.426
    2 144 121
                   79.0 0.426
                                    57
Total extinctions: 0
Generation time: 15.134 sec (14.228 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-169
 ***** Running generation 170 *****
Population's average fitness: -26.48126 stdev: 90.09207
Best fitness: 177.57173 - size: (13, 67) - species 1 - id 39344
Average adjusted fitness: 0.387
Mean genetic distance 2.386, standard deviation 0.830
Population of 250 members in 2 species:
       age size fitness adj fit stag
  TD
 ==== === ===== ===== ====
    1 170 133 177.6 0.425
                                     2
    2 145 117
                  81.8
                           0.348
Total extinctions: 0
Generation time: 15.598 sec (14.332 average)
 ***** Running generation 171 *****
Population's average fitness: -21.60475 stdev: 89.29927
Best fitness: 180.00610 - size: (12, 55) - species 1 - id 39748
Average adjusted fitness: 0.375
Mean genetic distance 2.515, standard deviation 0.791
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
                 180.0
    1 171 137
                          0.421
                                    3
    2 146 113
                   78.6
                           0.329
Total extinctions: 0
Generation time: 15.943 sec (14.445 average)
 ***** Running generation 172 *****
Population's average fitness: -28.99555 stdev: 90.00979
Best fitness: 180.86944 - size: (13, 67) - species 1 - id 39344
Average adjusted fitness: 0.368
Mean genetic distance 2.529, standard deviation 0.783
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
```

```
1 172
             138
                    180.9
                             0.407
                                      4
    2
      147
             112
                     79.4
                            0.329
                                     60
Total extinctions: 0
Generation time: 15.263 sec (14.540 average)
***** Running generation 173 *****
Population's average fitness: -17.37003 stdev: 91.85671
Best fitness: 194.33670 - size: (13, 67) - species 1 - id 40283
Average adjusted fitness: 0.370
Mean genetic distance 2.475, standard deviation 0.736
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ======
    1 173
            139
                    194.3
                            0.409
    2 148 111
                     75.9
                            0.331
                                     61
Total extinctions: 0
Generation time: 16.247 sec (14.884 average)
***** Running generation 174 *****
Population's average fitness: -21.48962 stdev: 96.35098
Best fitness: 200.42650 - size: (14, 67) - species 1 - id 40531
Average adjusted fitness: 0.327
Mean genetic distance 2.427, standard deviation 0.741
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
             141
                    200.4
                            0.373
    1 174
    2 149
            109
                   81.5
                            0.282
                                     62
Total extinctions: 0
Generation time: 15.816 sec (15.016 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-174
 ***** Running generation 175 *****
Population's average fitness: -17.30617 stdev: 97.96782
Best fitness: 202.72406 - size: (14, 63) - species 1 - id 40027
Average adjusted fitness: 0.457
Mean genetic distance 2.364, standard deviation 0.740
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    1 175
             138
                    202.7
                            0.494
                                      a
    2 150
                     75.8
                            0.420
             112
                                     63
Total extinctions: 0
Generation time: 16.106 sec (15.317 average)
 ***** Running generation 176 *****
Population's average fitness: -22.95992 stdev: 94.35756
Best fitness: 234.79236 - size: (14, 65) - species 1 - id 40429
Average adjusted fitness: 0.325
Mean genetic distance 2.465, standard deviation 0.718
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
       === ====
                 =======
    1 176
             136
                    234.8
                            0.348
                                      0
    2 151
             114
                    81.5
                            0.302
                                     64
```

```
Total extinctions: 0
Generation time: 16.038 sec (15.508 average)
***** Running generation 177 *****
Population's average fitness: -14.01135 stdev: 100.19364
Best fitness: 201.66908 - size: (13, 66) - species 1 - id 41181
Average adjusted fitness: 0.414
Mean genetic distance 2.577, standard deviation 0.726
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 177
           138
                  201.7
                            0.465
                    84.6
    2 152
            112
                            0.363
Total extinctions: 0
Generation time: 15.940 sec (15.634 average)
***** Running generation 178 *****
Population's average fitness: -11.12920 stdev: 100.44547
Best fitness: 211.30801 - size: (13, 66) - species 1 - id 41181
Average adjusted fitness: 0.338
Mean genetic distance 2.565, standard deviation 0.786
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 178
           150
                 211.3 0.436
                                     2
           100
    2 153
                   81.5
                            0.241
                                    66
Total extinctions: 0
Generation time: 16.651 sec (15.874 average)
***** Running generation 179 *****
Population's average fitness: -5.55228 stdev: 95.39286
Best fitness: 212.87253 - size: (13, 66) - species 1 - id 41181
Average adjusted fitness: 0.363
Mean genetic distance 2.541, standard deviation 0.755
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 179
           147 212.9 0.415
    2 154
           103
                   83.3
                            0.310
                                    67
Total extinctions: 0
Generation time: 18.217 sec (16.182 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-179
***** Running generation 180 *****
Population's average fitness: -17.37265 stdev: 95.94535
Best fitness: 199.91710 - size: (13, 60) - species 1 - id 41635
Average adjusted fitness: 0.331
Mean genetic distance 2.532, standard deviation 0.686
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 180
             151
                   199.9
                            0.412
    2 155
            99
                    84.1
                            0.250
Total extinctions: 0
Generation time: 16.082 sec (16.230 average)
```

```
***** Running generation 181 *****
Population's average fitness: -9.72814 stdev: 93.50878
Best fitness: 206.33580 - size: (13, 64) - species 1 - id 42025
Average adjusted fitness: 0.357
Mean genetic distance 2.538, standard deviation 0.671
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== =====
                 206.3 0.382
    1 181
           142
                    83.9
                            0.331
    2 156 108
Total extinctions: 0
Generation time: 17.405 sec (16.376 average)
 ***** Running generation 182 *****
Population's average fitness: -26.46370 stdev: 89.97746
Best fitness: 218.78867 - size: (13, 64) - species 1 - id 41420
Average adjusted fitness: 0.445
Mean genetic distance 2.552, standard deviation 0.686
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ---- --- ---- -----
                  218.8
    1 182
            136
                            0.461
                                    6
                    80.1
                            0.429
    2 157 114
                                    70
Total extinctions: 0
Generation time: 15.314 sec (16.382 average)
 ***** Running generation 183 *****
Population's average fitness: -7.62703 stdev: 94.18942
Best fitness: 215.18746 - size: (12, 60) - species 1 - id 42338
Average adjusted fitness: 0.348
Mean genetic distance 2.525, standard deviation 0.695
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                  215.2
    1 183
            142
                            0.410
                                     7
    2 158
            108
                    78.4
                            0.285
                                    71
Total extinctions: 0
Generation time: 16.713 sec (16.428 average)
 ***** Running generation 184 *****
Population's average fitness: -19.78447 stdev: 97.49806
Best fitness: 222.52311 - size: (14, 69) - species 1 - id 42781
Average adjusted fitness: 0.350
Mean genetic distance 2.435, standard deviation 0.706
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 184
                   222.5
           140
                            0.387
                                     8
      159
             110
                    77.8
                            0.312
                                    72
Total extinctions: 0
Generation time: 15.798 sec (16.426 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-184
 ***** Running generation 185 *****
```

```
Population's average fitness: -15.54944 stdev: 98.22458
Best fitness: 207.96655 - size: (13, 64) - species 1 - id 43002
Average adjusted fitness: 0.421
Mean genetic distance 2.402, standard deviation 0.756
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 185
                                    9
             141 208.0
                            0.475
    2 160
            109
                    85.1
                            0.368
                                    73
Total extinctions: 0
Generation time: 15.854 sec (16.401 average)
 ***** Running generation 186 *****
Population's average fitness: -28.72161 stdev: 91.56405
Best fitness: 228.26898 - size: (14, 68) - species 1 - id 43216
Average adjusted fitness: 0.379
Mean genetic distance 2.358, standard deviation 0.752
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 186 138 228.3 0.409
                   84.8 0.350
    2 161 112
                                    74
Total extinctions: 0
Generation time: 15.375 sec (16.335 average)
***** Running generation 187 *****
Population's average fitness: -15.53510 stdev: 91.53635
Best fitness: 205.39665 - size: (14, 68) - species 1 - id 43216
Average adjusted fitness: 0.346
Mean genetic distance 2.465, standard deviation 0.761
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 187 139 205.4 0.390
                                    11
                    74.8
                            0.302
                                    75
    2 162 111
Total extinctions: 0
Generation time: 16.222 sec (16.363 average)
***** Running generation 188 *****
Population's average fitness: -19.50548 stdev: 95.48555
Best fitness: 215.87807 - size: (14, 68) - species 1 - id 43216
Average adjusted fitness: 0.319
Mean genetic distance 2.461, standard deviation 0.785
Population of 250 members in 2 species:
       age size fitness adj fit stag
      === ==== ===== ====
    1 188
             142
                 215.9
                            0.370
                                    12
    2 163
             108
                   79.5
                            0.267
Total extinctions: 0
Generation time: 16.247 sec (16.323 average)
***** Running generation 189 *****
Population's average fitness: -17.98735 stdev: 96.72865
Best fitness: 235.49833 - size: (13, 54) - species 1 - id 43937
Average adjusted fitness: 0.302
```

```
Mean genetic distance 2.528, standard deviation 0.708
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    1 189 143 235.5 0.343
    2 164 107
                   77.3 0.260
                                    77
Total extinctions: 0
Generation time: 16.049 sec (16.106 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-189
***** Running generation 190 *****
Population's average fitness: -21.94653 stdev: 97.38194
Best fitness: 208.58140 - size: (14, 61) - species 1 - id 44127
Average adjusted fitness: 0.345
Mean genetic distance 2.467, standard deviation 0.665
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ===== ===== ====
    1 190
            146
                   208.6
                           0.408
    2 165 104
                   77.5 0.281
Total extinctions: 0
Generation time: 15.172 sec (16.015 average)
***** Running generation 191 *****
Population's average fitness: -21.56968 stdev: 94.28528
Best fitness: 217.45658 - size: (14, 61) - species 1 - id 44127
Average adjusted fitness: 0.340
Mean genetic distance 2.441, standard deviation 0.676
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
    1 191 142 217.5 0.373
    2 166
           108
                   74.8
                           0.307
Total extinctions: 0
Generation time: 16.374 sec (15.912 average)
***** Running generation 192 *****
Population's average fitness: -17.05150 stdev: 100.10974
Best fitness: 214.26325 - size: (14, 61) - species 1 - id 44127
Average adjusted fitness: 0.369
Mean genetic distance 2.491, standard deviation 0.658
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 192 146 214.3 0.440
                                    3
            104
    2 167
                   77.5
                            0.298
Total extinctions: 0
Generation time: 15.733 sec (15.954 average)
***** Running generation 193 *****
Population's average fitness: -26.43578 stdev: 98.41710
Best fitness: 246.25630 - size: (11, 57) - species 1 - id 43425
Average adjusted fitness: 0.318
Mean genetic distance 2.507, standard deviation 0.699
Population of 250 members in 2 species:
```

```
age size fitness adj fit stag
  TD
           ==== ====== =====
                 246.3
           141
                         0.346
    1 193
                                     0
    2 168 109
                  78.0 0.291
                                    81
Total extinctions: 0
Generation time: 15.146 sec (15.797 average)
 ***** Running generation 194 *****
Population's average fitness: -22.08639 stdev: 91.73824
Best fitness: 214.73407 - size: (12, 62) - species 1 - id 45065
Average adjusted fitness: 0.341
Mean genetic distance 2.552, standard deviation 0.740
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 194
           139
                  214.7
                           0.371
    2 169 111
                   74.0
                           0.310
                                    82
Total extinctions: 0
Generation time: 15.867 sec (15.804 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-194
 ***** Running generation 195 *****
Population's average fitness: -17.44226 stdev: 101.08690
Best fitness: 207.55982 - size: (11, 57) - species 1 - id 43425
Average adjusted fitness: 0.414
Mean genetic distance 2.535, standard deviation 0.721
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 195 136 207.6 0.442
                                     2
    2 170 114
                   79.3
                           0.385
Total extinctions: 0
Generation time: 15.392 sec (15.758 average)
 ***** Running generation 196 *****
Population's average fitness: -29.06803 stdev: 96.77909
Best fitness: 228.71625 - size: (15, 63) - species 1 - id 45272
Average adjusted fitness: 0.410
Mean genetic distance 2.536, standard deviation 0.711
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
                 228.7
    1 196 135
                           0.438
                                    3
    2 171 115
                   79.2
                           0.382
Total extinctions: 0
Generation time: 14.958 sec (15.716 average)
 ***** Running generation 197 *****
Population's average fitness: -27.02275 stdev: 92.53776
Best fitness: 210.22442 - size: (11, 55) - species 1 - id 45754
Average adjusted fitness: 0.375
Mean genetic distance 2.545, standard deviation 0.752
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
```

```
1 197
             136
                    210.2
                            0.412
                                      4
    2
       172
             114
                     80.1
                            0.337
                                     85
Total extinctions: 0
Generation time: 16.402 sec (15.734 average)
***** Running generation 198 *****
Population's average fitness: -20.88805 stdev: 95.33346
Best fitness: 205.93656 - size: (11, 58) - species 1 - id 46029
Average adjusted fitness: 0.379
Mean genetic distance 2.589, standard deviation 0.733
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ======
    1 198
            137
                    205.9
                            0.413
    2 173 113
                     80.6
                            0.344
                                     86
Total extinctions: 0
Generation time: 15.708 sec (15.680 average)
***** Running generation 199 *****
Population's average fitness: -24.53979 stdev: 96.62226
Best fitness: 218.95851 - size: (10, 54) - species 1 - id 46241
Average adjusted fitness: 0.415
Mean genetic distance 2.618, standard deviation 0.698
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== =====
  ==== ===
             136
                    219.0
                            0.450
    1 199
                                      6
    2 174
            114
                   80.2
                            0.380
                                     87
Total extinctions: 0
Generation time: 16.128 sec (15.688 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-199
 ***** Running generation 200 *****
Population's average fitness: -24.86251 stdev: 92.38135
Best fitness: 218.04677 - size: (10, 54) - species 1 - id 46241
Average adjusted fitness: 0.320
Mean genetic distance 2.636, standard deviation 0.676
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 200
            135
                    218.0
                            0.342
                                      7
    2 175
                            0.297
             115
                     82.0
                                     88
Total extinctions: 0
Generation time: 14.915 sec (15.662 average)
 ***** Running generation 201 *****
Population's average fitness: -23.01425 stdev: 96.41028
Best fitness: 249.94181 - size: (12, 59) - species 1 - id 46289
Average adjusted fitness: 0.350
Mean genetic distance 2.623, standard deviation 0.669
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
       === ====
                 =======
                    249.9
    1 201
             139
                            0.399
                                      0
    2
      176
             111
                    79.1
                            0.301
                                     89
```

```
Total extinctions: 0
Generation time: 15.541 sec (15.579 average)
***** Running generation 202 *****
Population's average fitness: -22.66871 stdev: 94.73144
Best fitness: 213.50964 - size: (10, 54) - species 1 - id 46241
Average adjusted fitness: 0.341
Mean genetic distance 2.592, standard deviation 0.684
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 202
            142
                   213.5
                            0.395
    2 177
            108
                   78.0
                            0.288
                                    90
Total extinctions: 0
Generation time: 15.691 sec (15.575 average)
***** Running generation 203 *****
Population's average fitness: -11.18988 stdev: 98.55477
Best fitness: 216.93650 - size: (11, 54) - species 1 - id 47111
Average adjusted fitness: 0.344
Mean genetic distance 2.640, standard deviation 0.644
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 203
           141 216.9 0.390
                                    2
           109
                   85.7 0.298
    2 178
                                    91
Total extinctions: 0
Generation time: 16.120 sec (15.672 average)
***** Running generation 204 *****
Population's average fitness: -27.68972 stdev: 93.49036
Best fitness: 208.33444 - size: (11, 54) - species 1 - id 46922
Average adjusted fitness: 0.369
Mean genetic distance 2.583, standard deviation 0.673
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 204 140 208.3 0.411
    2 179
           110
                    79.1
                            0.327
                                    92
Total extinctions: 0
Generation time: 15.199 sec (15.605 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-204
***** Running generation 205 *****
Population's average fitness: -15.17173 stdev: 101.37015
Best fitness: 237.53397 - size: (11, 54) - species 1 - id 47111
Average adjusted fitness: 0.358
Mean genetic distance 2.526, standard deviation 0.703
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 205
           142
                   237.5
                            0.412
    2 180
            108
                   86.6
                            0.303
                                    93
Total extinctions: 0
Generation time: 16.062 sec (15.672 average)
```

```
***** Running generation 206 *****
Population's average fitness: -9.37629 stdev: 98.54317
Best fitness: 207.56076 - size: (12, 55) - species 1 - id 47786
Average adjusted fitness: 0.354
Mean genetic distance 2.555, standard deviation 0.641
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                 207.6 0.417
    1 206
           145
                   77.9
                            0.291
    2 181 105
Total extinctions: 0
Generation time: 16.527 sec (15.829 average)
 ***** Running generation 207 *****
Population's average fitness: -14.14924 stdev: 102.07449
Best fitness: 242.08906 - size: (12, 53) - species 1 - id 48070
Average adjusted fitness: 0.391
Mean genetic distance 2.488, standard deviation 0.673
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ---- --- ---- -----
    1 207
                  242.1
            144
                            0.447
                                    6
                    77.1
                            0.335
    2 182
           106
                                     95
Total extinctions: 0
Generation time: 15.564 sec (15.745 average)
 ***** Running generation 208 *****
Population's average fitness: -7.65410 stdev: 96.64178
Best fitness: 208.11453 - size: (10, 54) - species 1 - id 48084
Average adjusted fitness: 0.364
Mean genetic distance 2.443, standard deviation 0.712
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                  208.1
    1 208
            139
                            0.387
    2 183
            111
                    82.9
                            0.340
                                     96
Total extinctions: 0
Generation time: 16.830 sec (15.858 average)
 ***** Running generation 209 *****
Population's average fitness: -8.90091 stdev: 98.61739
Best fitness: 234.93108 - size: (11, 54) - species 1 - id 47111
Average adjusted fitness: 0.364
Mean genetic distance 2.414, standard deviation 0.748
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 209
           137
                 234.9
                            0.391
                                     8
      184
             113
                    84.8
                            0.337
                                     97
Total extinctions: 0
Generation time: 16.770 sec (15.922 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-209
 ***** Running generation 210 *****
```

```
Population's average fitness: -15.99065 stdev: 99.98386
Best fitness: 215.83108 - size: (11, 51) - species 1 - id 48589
Average adjusted fitness: 0.333
Mean genetic distance 2.439, standard deviation 0.748
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 210
             144
                 215.8
                            0.403
                                    9
    2 185
            106
                    79.6
                            0.264
                                    98
Total extinctions: 0
Generation time: 15.406 sec (15.971 average)
 ***** Running generation 211 *****
Population's average fitness: -7.24426 stdev: 101.05281
Best fitness: 209.59551 - size: (11, 52) - species 1 - id 49033
Average adjusted fitness: 0.407
Mean genetic distance 2.422, standard deviation 0.678
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 211 143 209.6 0.465
           107
    2 186
                   78.8 0.349
                                    99
Total extinctions: 0
Generation time: 16.544 sec (16.071 average)
***** Running generation 212 *****
Population's average fitness: -13.55479 stdev: 99.42594
Best fitness: 232.33115 - size: (10, 49) - species 1 - id 49217
Average adjusted fitness: 0.438
Mean genetic distance 2.419, standard deviation 0.593
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 212 144 232.3 0.502
                                    11
    2 187 106
                    81.2
                            0.375 100
Total extinctions: 0
Generation time: 16.048 sec (16.107 average)
***** Running generation 213 *****
Population's average fitness: -8.82673 stdev: 106.63786
Best fitness: 228.42868 - size: (12, 53) - species 1 - id 48070
Average adjusted fitness: 0.409
Mean genetic distance 2.512, standard deviation 0.592
Population of 250 members in 2 species:
       age size fitness adj fit stag
       === ==== ===== ====
    1 213
           146
                 228.4
                            0.483
                                    12
    2 188
            104
                 110.6
                            0.334
Total extinctions: 0
Generation time: 15.533 sec (16.048 average)
***** Running generation 214 *****
Population's average fitness: -9.95932 stdev: 103.43401
Best fitness: 222.58213 - size: (11, 51) - species 1 - id 49709
Average adjusted fitness: 0.374
```

```
Mean genetic distance 2.573, standard deviation 0.662
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    1 214 148 222.6 0.451 13
    2 189 102
                  81.2 0.297
Total extinctions: 0
Generation time: 15.934 sec (16.122 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-214
***** Running generation 215 *****
Population's average fitness: -13.21249 stdev: 103.34886
Best fitness: 245.30150 - size: (10, 49) - species 1 - id 49926
Average adjusted fitness: 0.301
Mean genetic distance 2.607, standard deviation 0.688
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ===== ===== ====
    1 215
            144
                   245.3
                           0.337
    2 190 106
                   75.2 0.266
                                     2
Total extinctions: 0
Generation time: 15.619 sec (16.078 average)
***** Running generation 216 *****
Population's average fitness: -8.98747 stdev: 100.79203
Best fitness: 210.38438 - size: (11, 51) - species 1 - id 50181
Average adjusted fitness: 0.361
Mean genetic distance 2.623, standard deviation 0.698
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
    1 216 142 210.4 0.403
    2 191
           108
                   84.0
                           0.319
Total extinctions: 0
Generation time: 15.779 sec (16.003 average)
***** Running generation 217 *****
Population's average fitness: -8.42719 stdev: 99.81873
Best fitness: 224.21513 - size: (10, 50) - species 1 - id 49438
Average adjusted fitness: 0.381
Mean genetic distance 2.613, standard deviation 0.672
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 217 143 224.2 0.440 16
    2 192
           107
                   80.9
                            0.321
Total extinctions: 0
Generation time: 16.328 sec (16.079 average)
***** Running generation 218 *****
Population's average fitness: -13.87340 stdev: 105.84636
Best fitness: 247.21298 - size: (11, 51) - species 1 - id 50181
Average adjusted fitness: 0.374
Mean genetic distance 2.634, standard deviation 0.584
Population of 250 members in 2 species:
```

```
age size fitness adj fit stag
  TD
  ==== ===
           ==== ====== ====
           144
                 247.2 0.436
    1 218
                                    17
    2 193 106 81.8 0.312
                                    5
Total extinctions: 0
Generation time: 15.323 sec (15.928 average)
 ***** Running generation 219 *****
Population's average fitness: 3.28910 stdev: 109.45559
Best fitness: 236.67400 - size: (10, 47) - species 1 - id 50763
Average adjusted fitness: 0.411
Mean genetic distance 2.422, standard deviation 0.641
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 219
           147
                  236.7
                           0.494
    2 194 103
                   78.6 0.328
Total extinctions: 0
Generation time: 16.393 sec (15.891 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-219
 ***** Running generation 220 *****
Population's average fitness: -23.30757 stdev: 98.24959
Best fitness: 220.34152 - size: (11, 53) - species 1 - id 49960
Average adjusted fitness: 0.328
Mean genetic distance 2.374, standard deviation 0.691
Population of 250 members in 2 species:
       age size fitness adj fit stag
  TD
 ==== === ===== ===== ====
    1 220 148 220.3 0.391
                                    19
    2 195 102
                  80.7
                           0.266
Total extinctions: 0
Generation time: 16.148 sec (15.965 average)
 ***** Running generation 221 *****
Population's average fitness: -20.50815 stdev: 104.10010
Best fitness: 238.25837 - size: (11, 50) - species 1 - id 51100
Average adjusted fitness: 0.378
Mean genetic distance 2.439, standard deviation 0.738
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
                 238.3
           144
    1 221
                         0.426
                                    20
    2 196 106
                   77.0
                           0.330
Total extinctions: 0
Generation time: 15.167 sec (15.827 average)
 ***** Running generation 222 *****
Population's average fitness: -14.62534 stdev: 99.79708
Best fitness: 237.47750 - size: (10, 50) - species 1 - id 49438
Average adjusted fitness: 0.415
Mean genetic distance 2.421, standard deviation 0.772
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
```

```
1 222
             140
                    237.5
                            0.454
                                     21
    2
      197
             110
                     73.6
                            0.376
                                      9
Total extinctions: 0
Generation time: 15.922 sec (15.815 average)
***** Running generation 223 *****
Population's average fitness: -15.13893 stdev: 100.45717
Best fitness: 211.89021 - size: (11, 50) - species 1 - id 50542
Average adjusted fitness: 0.392
Mean genetic distance 2.370, standard deviation 0.790
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
                                     22
    1 223
             142
                    211.9
                            0.453
    2 198
           108
                     74.4
                            0.332
                                     10
Total extinctions: 0
Generation time: 15.582 sec (15.820 average)
***** Running generation 224 *****
Population's average fitness: -9.29522 stdev: 96.29993
Best fitness: 224.99700 - size: (10, 48) - species 1 - id 51524
Average adjusted fitness: 0.415
Mean genetic distance 2.449, standard deviation 0.741
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
            139
                    225.0
                            0.449
                                     23
    1 224
    2 199
            111
                   82.7
                            0.382
                                     11
Total extinctions: 0
Generation time: 15.987 sec (15.825 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-224
 ***** Running generation 225 *****
Population's average fitness: -6.89226 stdev: 98.50080
Best fitness: 207.88620 - size: (9, 49) - species 1 - id 52260
Average adjusted fitness: 0.346
Mean genetic distance 2.459, standard deviation 0.677
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 225
             145
                    207.9
                            0.420
                                     24
    2 200
                     85.8
                            0.272
             105
                                     12
Total extinctions: 0
Generation time: 16.111 sec (15.874 average)
 ***** Running generation 226 *****
Population's average fitness: -6.64853 stdev: 101.89316
Best fitness: 236.88639 - size: (10, 49) - species 1 - id 52163
Average adjusted fitness: 0.450
Mean genetic distance 2.477, standard deviation 0.637
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
       === ====
                 ====== =====
    1 226
             143
                    236.9
                            0.512
                                     25
    2 201
                    80.5
                            0.389
                                     13
             107
```

```
Total extinctions: 0
Generation time: 16.255 sec (15.922 average)
***** Running generation 227 *****
Population's average fitness: -12.22004 stdev: 105.54861
Best fitness: 218.21688 - size: (10, 49) - species 1 - id 52163
Average adjusted fitness: 0.417
Mean genetic distance 2.536, standard deviation 0.672
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 227
           144
                   218.2 0.485
                   75.9
    2 202
            106
                            0.349
Total extinctions: 0
Generation time: 15.990 sec (15.888 average)
***** Running generation 228 *****
Population's average fitness: -12.89566 stdev: 101.39993
Best fitness: 211.00209 - size: (12, 54) - species 1 - id 52650
Average adjusted fitness: 0.419
Mean genetic distance 2.550, standard deviation 0.715
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 228
           141 211.0 0.464
                                  27
           109
                   83.7 0.374
    2 203
                                    15
Total extinctions: 0
Generation time: 16.441 sec (16.000 average)
***** Running generation 229 *****
Population's average fitness: -13.99604 stdev: 98.55548
Best fitness: 221.75713 - size: (11, 50) - species 1 - id 52219
Average adjusted fitness: 0.409
Mean genetic distance 2.457, standard deviation 0.751
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 229 138 221.8 0.442 28
    2 204 112
                   78.9
                            0.376 16
Total extinctions: 0
Generation time: 16.079 sec (15.968 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-229
***** Running generation 230 *****
Population's average fitness: -13.91081 stdev: 97.65407
Best fitness: 228.10246 - size: (11, 49) - species 1 - id 53340
Average adjusted fitness: 0.416
Mean genetic distance 2.481, standard deviation 0.720
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 230
           136
                   228.1 0.446
                                    29
                  83.6
    2 205
            114
                            0.386
                                    17
Total extinctions: 0
Generation time: 16.281 sec (15.981 average)
```

```
***** Running generation 231 *****
Population's average fitness: -16.92193 stdev: 97.87485
Best fitness: 216.35789 - size: (12, 52) - species 1 - id 53572
Average adjusted fitness: 0.376
Mean genetic distance 2.540, standard deviation 0.683
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
                 216.4 0.428
    1 231
           139
                                  30
                    82.2
                            0.324
    2 206 111
Total extinctions: 0
Generation time: 15.932 sec (16.058 average)
 ***** Running generation 232 *****
Population's average fitness: -11.41946 stdev: 104.85469
Best fitness: 232.46085 - size: (12, 52) - species 1 - id 53572
Average adjusted fitness: 0.357
Mean genetic distance 2.604, standard deviation 0.680
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ---- --- ---- -----
                  232.5
    1 232
            144
                          0.427
                                    31
    2 207
                    80.2
                            0.287
           106
                                    19
Total extinctions: 0
Generation time: 15.623 sec (16.028 average)
 ***** Running generation 233 *****
Population's average fitness: -21.27221 stdev: 100.75106
Best fitness: 230.53250 - size: (12, 49) - species 1 - id 53314
Average adjusted fitness: 0.324
Mean genetic distance 2.607, standard deviation 0.688
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                  230.5
    1 233
            148
                            0.394
                                    32
    2 208
            102
                    75.5
                            0.255
                                    20
Total extinctions: 0
Generation time: 15.379 sec (16.008 average)
 ***** Running generation 234 *****
Population's average fitness: -20.21283 stdev: 95.76686
Best fitness: 241.27482 - size: (12, 52) - species 1 - id 54287
Average adjusted fitness: 0.400
Mean genetic distance 2.575, standard deviation 0.663
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 234
                                    33
           136
                 241.3
                            0.399
      209
             114
                    81.5
                            0.402
Total extinctions: 0
Generation time: 15.485 sec (15.958 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-234
 ***** Running generation 235 *****
```

```
Population's average fitness: -13.48433 stdev: 98.60893
Best fitness: 219.78392 - size: (11, 50) - species 1 - id 53759
Average adjusted fitness: 0.441
Mean genetic distance 2.581, standard deviation 0.611
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 235
             135
                 219.8
                            0.471
                                    34
    2 210
            115
                    78.4
                            0.411
                                    22
Total extinctions: 0
Generation time: 17.028 sec (16.049 average)
 ***** Running generation 236 *****
Population's average fitness: -8.08138 stdev: 106.36136
Best fitness: 238.42191 - size: (12, 52) - species 1 - id 54287
Average adjusted fitness: 0.410
Mean genetic distance 2.549, standard deviation 0.632
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 236 141 238.4 0.481
    2 211 109
                   90.3 0.339
                                    23
Total extinctions: 0
Generation time: 15.977 sec (16.021 average)
***** Running generation 237 *****
Population's average fitness: -17.70990 stdev: 99.45637
Best fitness: 242.59969 - size: (12, 52) - species 1 - id 54287
Average adjusted fitness: 0.418
Mean genetic distance 2.535, standard deviation 0.635
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 237 137 242.6 0.446
                                    36
    2 212 113
                    90.2
                            0.390
                                    24
Total extinctions: 0
Generation time: 16.230 sec (16.046 average)
***** Running generation 238 *****
Population's average fitness: -24.66548 stdev: 101.62363
Best fitness: 234.83560 - size: (12, 52) - species 1 - id 54287
Average adjusted fitness: 0.396
Mean genetic distance 2.533, standard deviation 0.699
Population of 250 members in 2 species:
       age size fitness adj fit stag
       === ==== ===== ====
                            0.425
    1 238
           136
                 234.8
                                    37
    2 213
            114
                   77.7
                            0.367
Total extinctions: 0
Generation time: 15.446 sec (15.946 average)
***** Running generation 239 *****
Population's average fitness: -15.34604 stdev: 102.41053
Best fitness: 209.63668 - size: (12, 51) - species 1 - id 55383
Average adjusted fitness: 0.413
```

```
Mean genetic distance 2.533, standard deviation 0.651
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    1 239 140 209.6 0.474 38
    2 214 110
                   73.4
                           0.351
                                    26
Total extinctions: 0
Generation time: 15.080 sec (15.846 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-239
***** Running generation 240 *****
Population's average fitness: -9.18281 stdev: 97.92822
Best fitness: 212.00681 - size: (11, 49) - species 1 - id 55718
Average adjusted fitness: 0.436
Mean genetic distance 2.587, standard deviation 0.585
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ===== ===== ====
    1 240
            138
                   212.0
                           0.469
    2 215 112
                   73.0 0.404
                                    27
Total extinctions: 0
Generation time: 16.147 sec (15.833 average)
***** Running generation 241 *****
Population's average fitness: -21.71125 stdev: 97.32166
Best fitness: 214.38013 - size: (11, 53) - species 1 - id 55846
Average adjusted fitness: 0.376
Mean genetic distance 2.599, standard deviation 0.600
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
    1 241 137 214.4 0.412
                                    40
    2 216 113
                   79.6
                           0.340
Total extinctions: 0
Generation time: 15.455 sec (15.785 average)
***** Running generation 242 *****
Population's average fitness: -28.88880 stdev: 98.29830
Best fitness: 225.42918 - size: (12, 55) - species 1 - id 56060
Average adjusted fitness: 0.348
Mean genetic distance 2.625, standard deviation 0.637
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 242 139 225.4 0.392 41
           111
    2 217
                   80.7
                            0.304
Total extinctions: 0
Generation time: 14.101 sec (15.633 average)
***** Running generation 243 *****
Population's average fitness: -18.54580 stdev: 99.03012
Best fitness: 229.02869 - size: (12, 55) - species 1 - id 56060
Average adjusted fitness: 0.312
Mean genetic distance 2.621, standard deviation 0.630
Population of 250 members in 2 species:
```

```
age size fitness adj fit stag
  TD
  ==== ===
           ==== ====== =====
                 229.0
           141
                         0.354
    1 243
                                    42
    2 218 109 80.6 0.269
                                    30
Total extinctions: 0
Generation time: 15.530 sec (15.648 average)
 ***** Running generation 244 *****
Population's average fitness: -9.90099 stdev: 98.72354
Best fitness: 223.45572 - size: (12, 52) - species 1 - id 56580
Average adjusted fitness: 0.423
Mean genetic distance 2.579, standard deviation 0.660
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 244 140
                  223.5
                           0.470
                                    43
    2 219 110
                   76.4 0.376
                                    31
Total extinctions: 0
Generation time: 16.373 sec (15.737 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-244
 ***** Running generation 245 *****
Population's average fitness: -9.43747 stdev: 102.98048
Best fitness: 227.18613 - size: (11, 49) - species 1 - id 56862
Average adjusted fitness: 0.360
Mean genetic distance 2.626, standard deviation 0.659
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 245 141 227.2 0.407
                                   44
    2 220 109
                   79.9 0.313
Total extinctions: 0
Generation time: 16.840 sec (15.718 average)
 ***** Running generation 246 *****
Population's average fitness: -15.49261 stdev: 97.58882
Best fitness: 208.03997 - size: (11, 45) - species 1 - id 57022
Average adjusted fitness: 0.388
Mean genetic distance 2.682, standard deviation 0.667
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 246 140 208.0
                         0.434
                                    45
                   84.1
                           0.342
    2 221 110
Total extinctions: 0
Generation time: 15.464 sec (15.667 average)
 ***** Running generation 247 *****
Population's average fitness: -17.46643 stdev: 97.15922
Best fitness: 218.64207 - size: (12, 46) - species 1 - id 56520
Average adjusted fitness: 0.405
Mean genetic distance 2.607, standard deviation 0.697
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
```

```
1
      247
             136
                    218.6
                             0.426
                                     46
    2
       222
             114
                     88.7
                            0.385
                                     34
Total extinctions: 0
Generation time: 15.080 sec (15.552 average)
***** Running generation 248 *****
Population's average fitness: -19.90678 stdev: 100.25700
Best fitness: 226.40625 - size: (12, 54) - species 1 - id 57556
Average adjusted fitness: 0.451
Mean genetic distance 2.621, standard deviation 0.683
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
                            0.490
    1 248
            135
                    226.4
                                     47
    2 223 115
                     78.9
                            0.411
                                     35
Total extinctions: 0
Generation time: 15.578 sec (15.565 average)
***** Running generation 249 *****
Population's average fitness: -17.91570 stdev: 102.02285
Best fitness: 230.84575 - size: (11, 45) - species 1 - id 57022
Average adjusted fitness: 0.367
Mean genetic distance 2.596, standard deviation 0.665
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== ===
           ==== ====== =====
    1 249
             139
                    230.8
                            0.417
                                     48
    2 224
            111
                    79.1
                            0.318
                                     36
Total extinctions: 0
Generation time: 15.139 sec (15.571 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-249
 ***** Running generation 250 *****
Population's average fitness: -25.17956 stdev: 99.43364
Best fitness: 218.29009 - size: (12, 48) - species 1 - id 57992
Average adjusted fitness: 0.387
Mean genetic distance 2.516, standard deviation 0.718
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 250
             140
                    218.3
                            0.431
                                     49
    2 225
                            0.343
             110
                     81.1
                                     37
Total extinctions: 0
Generation time: 14.859 sec (15.442 average)
 ***** Running generation 251 *****
Population's average fitness: -23.04700 stdev: 96.23897
Best fitness: 243.33310 - size: (10, 42) - species 1 - id 58226
Average adjusted fitness: 0.386
Mean genetic distance 2.533, standard deviation 0.709
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
       === ====
                 ====== =====
                            0.424
    1 251
             139
                    243.3
                                     50
    2
      226
             111
                    77.4
                            0.348
                                     38
```

```
Total extinctions: 0
Generation time: 15.130 sec (15.409 average)
***** Running generation 252 *****
Population's average fitness: -20.42660 stdev: 99.91868
Best fitness: 219.31746 - size: (8, 50) - species 1 - id 58224
Average adjusted fitness: 0.402
Mean genetic distance 2.468, standard deviation 0.771
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 252
            136
                   219.3
                            0.425
                                    51
    2 227
            114
                    82.4
                            0.379
Total extinctions: 0
Generation time: 15.840 sec (15.583 average)
***** Running generation 253 *****
Population's average fitness: -18.64546 stdev: 97.97136
Best fitness: 222.44279 - size: (11, 49) - species 1 - id 58472
Average adjusted fitness: 0.405
Mean genetic distance 2.506, standard deviation 0.750
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 253
           137 222.4 0.450 52
           113
    2 228
                   82.2 0.360
                                    40
Total extinctions: 0
Generation time: 14.766 sec (15.507 average)
***** Running generation 254 *****
Population's average fitness: -20.07026 stdev: 94.36115
Best fitness: 210.95220 - size: (12, 45) - species 1 - id 58411
Average adjusted fitness: 0.407
Mean genetic distance 2.563, standard deviation 0.714
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 254 134
                 211.0 0.427 53
                    79.2
    2 229
           116
                            0.388
                                    41
Total extinctions: 0
Generation time: 15.559 sec (15.426 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-254
***** Running generation 255 *****
Population's average fitness: -16.81361 stdev: 98.07357
Best fitness: 223.17511 - size: (10, 42) - species 1 - id 58226
Average adjusted fitness: 0.489
Mean genetic distance 2.520, standard deviation 0.686
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 255
           133
                   223.2
                            0.518
                                    54
    2 230
            117
                   81.1
                            0.461
Total extinctions: 0
Generation time: 15.709 sec (15.312 average)
```

```
***** Running generation 256 *****
Population's average fitness: -29.36816 stdev: 93.63309
Best fitness: 212.42268 - size: (11, 48) - species 1 - id 57707
Average adjusted fitness: 0.384
Mean genetic distance 2.462, standard deviation 0.669
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
                 212.4 0.402
                                    55
    1 256
           132
                   86.4
                            0.365
    2 231 118
Total extinctions: 0
Generation time: 14.040 sec (15.170 average)
 ***** Running generation 257 *****
Population's average fitness: -18.95243 stdev: 98.56154
Best fitness: 212.67325 - size: (11, 43) - species 1 - id 59629
Average adjusted fitness: 0.403
Mean genetic distance 2.489, standard deviation 0.712
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ---- --- ---- -----
                  212.7
    1 257
            137
                            0.455
    2 232
                    84.8
                            0.350
           113
                                    44
Total extinctions: 0
Generation time: 14.296 sec (15.092 average)
 ***** Running generation 258 *****
Population's average fitness: -21.15695 stdev: 100.03840
Best fitness: 228.11600 - size: (10, 39) - species 1 - id 59854
Average adjusted fitness: 0.408
Mean genetic distance 2.384, standard deviation 0.802
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                  228.1
    1 258
            138
                            0.453
                                    57
    2 233
            112
                    77.0
                            0.364
                                    45
Total extinctions: 0
Generation time: 14.414 sec (14.975 average)
 ***** Running generation 259 *****
Population's average fitness: -7.83383 stdev: 104.10280
Best fitness: 229.03141 - size: (10, 41) - species 1 - id 60005
Average adjusted fitness: 0.416
Mean genetic distance 2.442, standard deviation 0.750
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 259
                 229.0
           139
                            0.464
                                    58
      234
             111
                    85.9
                            0.367
                                    46
Total extinctions: 0
Generation time: 15.088 sec (14.970 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-259
 ***** Running generation 260 *****
```

```
Population's average fitness: -19.75788 stdev: 99.36412
Best fitness: 207.78112 - size: (10, 43) - species 1 - id 59972
Average adjusted fitness: 0.411
Mean genetic distance 2.496, standard deviation 0.757
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 260
             137
                  207.8
                            0.445
                                    59
    2 235
            113
                    79.1
                            0.377
                                    47
Total extinctions: 0
Generation time: 15.050 sec (14.989 average)
 ***** Running generation 261 *****
Population's average fitness: -22.40969 stdev: 95.02924
Best fitness: 234.32226 - size: (12, 45) - species 1 - id 58411
Average adjusted fitness: 0.327
Mean genetic distance 2.489, standard deviation 0.727
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 261 133 234.3 0.338
           117
                    75.5 0.317
    2 236
                                    48
Total extinctions: 0
Generation time: 14.529 sec (14.929 average)
***** Running generation 262 *****
Population's average fitness: -4.87856 stdev: 101.23576
Best fitness: 227.78796 - size: (14, 54) - species 1 - id 60226
Average adjusted fitness: 0.414
Mean genetic distance 2.403, standard deviation 0.749
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 262 136 227.8 0.458
                                    61
    2 237
           114
                    81.2
                            0.370
                                    49
Total extinctions: 0
Generation time: 15.812 sec (14.926 average)
***** Running generation 263 *****
Population's average fitness: -20.42518 stdev: 91.43957
Best fitness: 202.47031 - size: (11, 45) - species 1 - id 60737
Average adjusted fitness: 0.365
Mean genetic distance 2.426, standard deviation 0.730
Population of 250 members in 2 species:
       age size fitness adj fit stag
       === ==== ===== ====
           127
                  202.5
                            0.347
                                    62
    1 263
    2 238
            123
                   78.4
                            0.384
Total extinctions: 0
Generation time: 15.495 sec (14.999 average)
***** Running generation 264 *****
Population's average fitness: -21.16601 stdev: 92.38356
Best fitness: 209.61196 - size: (9, 41) - species 1 - id 61161
Average adjusted fitness: 0.443
```

```
Mean genetic distance 2.426, standard deviation 0.681
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    1 264 130 209.6 0.471 63
    2 239 120
                  82.5 0.415
                                   51
Total extinctions: 0
Generation time: 15.056 sec (14.949 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-264
***** Running generation 265 *****
Population's average fitness: -20.04628 stdev: 93.76999
Best fitness: 219.88826 - size: (10, 44) - species 1 - id 61451
Average adjusted fitness: 0.380
Mean genetic distance 2.457, standard deviation 0.703
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ===== ===== ====
                 219.9
    1 265
            128
                           0.383
    2 240 122 80.3 0.377
                                   52
Total extinctions: 0
Generation time: 14.702 sec (14.848 average)
***** Running generation 266 *****
Population's average fitness: -16.49141 stdev: 90.26206
Best fitness: 203.93984 - size: (12, 47) - species 1 - id 61439
Average adjusted fitness: 0.414
Mean genetic distance 2.437, standard deviation 0.683
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
    1 266 129 203.9 0.432 65
    2 241
           121
                   77.1 0.396
Total extinctions: 0
Generation time: 15.536 sec (14.998 average)
***** Running generation 267 *****
Population's average fitness: -22.57499 stdev: 93.97299
Best fitness: 210.54744 - size: (12, 45) - species 1 - id 61889
Average adjusted fitness: 0.446
Mean genetic distance 2.425, standard deviation 0.675
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 267 134 210.5 0.499 66
           116
    2 242
                   77.5
                           0.394
Total extinctions: 0
Generation time: 15.526 sec (15.121 average)
***** Running generation 268 *****
Population's average fitness: -10.57040 stdev: 97.54168
Best fitness: 221.98811 - size: (12, 45) - species 1 - id 61889
Average adjusted fitness: 0.367
Mean genetic distance 2.456, standard deviation 0.680
Population of 250 members in 2 species:
```

```
age size fitness adj fit stag
  TD
  ==== === ===== ===== ====
                         0.404
    1 268
           136 222.0
                                    67
    2 243 114
                  75.3 0.331
                                    55
Total extinctions: 0
Generation time: 15.583 sec (15.238 average)
 ***** Running generation 269 *****
Population's average fitness: -18.32287 stdev: 95.24574
Best fitness: 212.75951 - size: (14, 51) - species 1 - id 62315
Average adjusted fitness: 0.403
Mean genetic distance 2.455, standard deviation 0.678
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 269
           130
                  212.8
                           0.401
                                    68
    2 244 120
                   81.7 0.406
                                    56
Total extinctions: 0
Generation time: 14.678 sec (15.197 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-269
 ***** Running generation 270 *****
Population's average fitness: -17.57801 stdev: 98.39476
Best fitness: 222.26319 - size: (12, 45) - species 1 - id 61889
Average adjusted fitness: 0.399
Mean genetic distance 2.400, standard deviation 0.692
Population of 250 members in 2 species:
       age size fitness adj fit stag
  TD
 ==== === ===== ===== ====
    1 270 131 222.3 0.424
                                    69
    2 245 119
                  81.2 0.373
Total extinctions: 0
Generation time: 14.646 sec (15.156 average)
 ***** Running generation 271 *****
Population's average fitness: -13.69530 stdev: 99.96398
Best fitness: 221.63021 - size: (12, 45) - species 1 - id 61889
Average adjusted fitness: 0.423
Mean genetic distance 2.397, standard deviation 0.669
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 271 132 221.6
                         0.453
                                    70
    2 246 118
                  81.2
                           0.393
                                    58
Total extinctions: 0
Generation time: 15.674 sec (15.271 average)
 ***** Running generation 272 *****
Population's average fitness: -20.29989 stdev: 93.73699
Best fitness: 217.98467 - size: (12, 49) - species 1 - id 62331
Average adjusted fitness: 0.401
Mean genetic distance 2.443, standard deviation 0.628
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
```

```
1 272
             130
                    218.0
                             0.413
                                     71
    2
      247
             120
                     87.4
                             0.389
                                     59
Total extinctions: 0
Generation time: 15.009 sec (15.191 average)
***** Running generation 273 *****
Population's average fitness: -19.01780 stdev: 95.95927
Best fitness: 213.85043 - size: (12, 45) - species 1 - id 61889
Average adjusted fitness: 0.343
Mean genetic distance 2.493, standard deviation 0.685
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
                                     72
    1 273
             135
                    213.9
                            0.382
    2 248
           115
                     85.7
                            0.303
                                     60
Total extinctions: 0
Generation time: 15.894 sec (15.230 average)
***** Running generation 274 *****
Population's average fitness: -1.72886 stdev: 104.38082
Best fitness: 231.52282 - size: (10, 38) - species 1 - id 62810
Average adjusted fitness: 0.364
Mean genetic distance 2.530, standard deviation 0.775
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== ===
           ==== ====== =====
    1 274
             134
                    231.5
                            0.386
                                     73
    2 249
            116
                     80.0
                            0.342
                                     61
Total extinctions: 0
Generation time: 15.701 sec (15.295 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-274
 ***** Running generation 275 *****
Population's average fitness: -3.43191 stdev: 98.84627
Best fitness: 202.33965 - size: (11, 43) - species 1 - id 63659
Average adjusted fitness: 0.456
Mean genetic distance 2.605, standard deviation 0.753
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 275
            135
                    202.3
                            0.493
                                     74
    2 250
                            0.420
             115
                     83.3
                                     62
Total extinctions: 0
Generation time: 16.671 sec (15.492 average)
 ***** Running generation 276 *****
Population's average fitness: -11.57166 stdev: 100.95528
Best fitness: 209.03826 - size: (14, 47) - species 1 - id 63491
Average adjusted fitness: 0.395
Mean genetic distance 2.650, standard deviation 0.756
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
       === ====
                 =======
                            0.445
    1 276
             138
                    209.0
                                     75
    2
      251
             112
                    83.1
                            0.345
                                     63
```

```
Total extinctions: 0
Generation time: 15.188 sec (15.457 average)
***** Running generation 277 *****
Population's average fitness: -8.64042 stdev: 97.93268
Best fitness: 231.10726 - size: (13, 43) - species 1 - id 63891
Average adjusted fitness: 0.363
Mean genetic distance 2.643, standard deviation 0.857
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 277
           137
                   231.1 0.401
                                   76
                    87.6
    2 252
            113
                            0.326
                                    64
Total extinctions: 0
Generation time: 15.941 sec (15.498 average)
***** Running generation 278 *****
Population's average fitness: -10.56841 stdev: 96.78324
Best fitness: 214.87485 - size: (14, 47) - species 1 - id 63491
Average adjusted fitness: 0.333
Mean genetic distance 2.597, standard deviation 0.952
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 278 136 214.9 0.364 77
           114
                   85.4 0.303
    2 253
                                    65
Total extinctions: 0
Generation time: 15.802 sec (15.520 average)
***** Running generation 279 *****
Population's average fitness: 2.93453 stdev: 101.08125
Best fitness: 216.38594 - size: (12, 47) - species 1 - id 64211
Average adjusted fitness: 0.449
Mean genetic distance 2.577, standard deviation 0.950
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 279 138 216.4 0.501 78
           112
    2 254
                   85.4
                            0.398
                                    66
Total extinctions: 0
Generation time: 16.874 sec (15.740 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-279
***** Running generation 280 *****
Population's average fitness: -16.97194 stdev: 95.76330
Best fitness: 205.08468 - size: (13, 42) - species 1 - id 64567
Average adjusted fitness: 0.387
Mean genetic distance 2.600, standard deviation 0.927
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 280
           134
                   205.1
                            0.402
                                    79
    2 255
            116
                   82.4
                            0.372
Total extinctions: 0
Generation time: 15.275 sec (15.803 average)
```

```
***** Running generation 281 *****
Population's average fitness: -16.93792 stdev: 95.29150
Best fitness: 215.84317 - size: (12, 43) - species 1 - id 65145
Average adjusted fitness: 0.379
Mean genetic distance 2.579, standard deviation 0.893
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
           136 215.8 0.417
    1 281
                                    80
                    84.1
                            0.341
    2 256 114
Total extinctions: 0
Generation time: 15.363 sec (15.772 average)
 ***** Running generation 282 *****
Population's average fitness: -9.73919 stdev: 97.85664
Best fitness: 225.38474 - size: (12, 43) - species 1 - id 65080
Average adjusted fitness: 0.367
Mean genetic distance 2.663, standard deviation 0.850
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ---- --- ---- -----
                  225.4
    1 282
            137
                            0.402
                                    81
    2 257
                    83.1
           113
                            0.332
                                    69
Total extinctions: 0
Generation time: 15.744 sec (15.845 average)
 ***** Running generation 283 *****
Population's average fitness: -7.92741 stdev: 105.61073
Best fitness: 232.27574 - size: (12, 43) - species 1 - id 65080
Average adjusted fitness: 0.395
Mean genetic distance 2.699, standard deviation 0.872
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                  232.3
    1 283
            139
                            0.442
                                    82
    2 258
            111
                    86.5
                            0.347
                                    70
Total extinctions: 0
Generation time: 15.012 sec (15.757 average)
 ***** Running generation 284 *****
Population's average fitness: -17.61028 stdev: 100.37699
Best fitness: 246.14627 - size: (12, 43) - species 1 - id 65080
Average adjusted fitness: 0.304
Mean genetic distance 2.669, standard deviation 0.885
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 284
                                    83
           145
                   246.1
                            0.365
      259
             105
                    74.2
                            0.243
Total extinctions: 0
Generation time: 14.818 sec (15.669 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-284
 ***** Running generation 285 *****
```

```
Population's average fitness: -4.58492 stdev: 100.44654
Best fitness: 237.99336 - size: (12, 43) - species 1 - id 65080
Average adjusted fitness: 0.416
Mean genetic distance 2.632, standard deviation 0.844
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 285
             142 238.0
                            0.463
                                    84
    2 260
            108
                    77.9
                            0.368
                                    72
Total extinctions: 0
Generation time: 16.141 sec (15.616 average)
 ***** Running generation 286 *****
Population's average fitness: -9.90349 stdev: 100.66410
Best fitness: 197.06788 - size: (13, 40) - species 1 - id 66236
Average adjusted fitness: 0.398
Mean genetic distance 2.594, standard deviation 0.806
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 286 141 197.1 0.450
    2 261 109
                    81.2 0.346
                                    73
Total extinctions: 0
Generation time: 15.355 sec (15.633 average)
***** Running generation 287 *****
Population's average fitness: -7.85462 stdev: 101.05633
Best fitness: 236.08240 - size: (13, 42) - species 1 - id 66276
Average adjusted fitness: 0.396
Mean genetic distance 2.622, standard deviation 0.813
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 287 143 236.1 0.457
                                    86
    2 262 107
                    78.6
                            0.335
                                    74
Total extinctions: 0
Generation time: 16.200 sec (15.658 average)
***** Running generation 288 *****
Population's average fitness: 0.48377 stdev: 106.05920
Best fitness: 228.61582 - size: (16, 48) - species 1 - id 66706
Average adjusted fitness: 0.455
Mean genetic distance 2.669, standard deviation 0.801
Population of 250 members in 2 species:
       age size fitness adj fit stag
       === ==== ===== ====
    1 288
             141
                 228.6
                            0.504
                                    87
    2 263
             109
                   82.7
                            0.405
                                    75
Total extinctions: 0
Generation time: 16.103 sec (15.689 average)
***** Running generation 289 *****
Population's average fitness: -0.83215 stdev: 105.68135
Best fitness: 235.59494 - size: (16, 49) - species 1 - id 66735
Average adjusted fitness: 0.391
```

```
Mean genetic distance 2.702, standard deviation 0.851
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    1 289 146 235.6 0.470
                                    88
                   79.3 0.311
    2 264 104
Total extinctions: 0
Generation time: 16.021 sec (15.603 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-289
***** Running generation 290 *****
Population's average fitness: 3.74870 stdev: 106.84333
Best fitness: 223.01095 - size: (16, 48) - species 1 - id 67208
Average adjusted fitness: 0.361
Mean genetic distance 2.715, standard deviation 0.822
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ===== ===== ====
                 223.0
    1 290
            145
                           0.420
    2 265 105
                  81.8 0.301
                                   77
Total extinctions: 0
Generation time: 16.182 sec (15.694 average)
***** Running generation 291 *****
Population's average fitness: -9.28700 stdev: 101.49065
Best fitness: 227.80718 - size: (12, 40) - species 1 - id 67132
Average adjusted fitness: 0.361
Mean genetic distance 2.682, standard deviation 0.839
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
    1 291 141 227.8 0.398
                                    90
    2 266
           109
                  83.5
                           0.324
Total extinctions: 0
Generation time: 15.538 sec (15.711 average)
***** Running generation 292 *****
Population's average fitness: -10.50032 stdev: 103.64783
Best fitness: 225.49779 - size: (12, 39) - species 1 - id 67365
Average adjusted fitness: 0.390
Mean genetic distance 2.627, standard deviation 0.898
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 292 143 225.5 0.452
                                    91
            107
    2 267
                   85.3
                           0.327
Total extinctions: 0
Generation time: 14.894 sec (15.626 average)
***** Running generation 293 *****
Population's average fitness: -8.42656 stdev: 105.08006
Best fitness: 225.13156 - size: (16, 52) - species 1 - id 67906
Average adjusted fitness: 0.407
Mean genetic distance 2.634, standard deviation 0.884
Population of 250 members in 2 species:
```

```
age size fitness adj fit stag
  TD
  ==== ===
           ==== ====== =====
           141
                 225.1 0.456
    1 293
                                    92
    2 268 109
                  83.7 0.359
                                    80
Total extinctions: 0
Generation time: 15.281 sec (15.653 average)
 ***** Running generation 294 *****
Population's average fitness: -21.01259 stdev: 105.99053
Best fitness: 250.54449 - size: (16, 49) - species 1 - id 67874
Average adjusted fitness: 0.427
Mean genetic distance 2.675, standard deviation 0.813
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 294
           137
                  250.5
                           0.451
    2 269 113
                    80.6 0.402
                                    81
Total extinctions: 0
Generation time: 14.184 sec (15.590 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-294
 ***** Running generation 295 *****
Population's average fitness: -8.23766 stdev: 102.86048
Best fitness: 204.57306 - size: (12, 38) - species 1 - id 68261
Average adjusted fitness: 0.452
Mean genetic distance 2.656, standard deviation 0.861
Population of 250 members in 2 species:
       age size fitness adj fit stag
  TD
 ==== === ===== ===== ====
    1 295 136 204.6 0.485
                                     1
    2 270 114
                  85.0
                           0.418
Total extinctions: 0
Generation time: 15.312 sec (15.507 average)
 ***** Running generation 296 *****
Population's average fitness: -17.82661 stdev: 104.59684
Best fitness: 245.23550 - size: (16, 49) - species 1 - id 68578
Average adjusted fitness: 0.350
Mean genetic distance 2.750, standard deviation 0.855
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
                 245.2 0.409
    1 296 141
                                     2
    2 271 109
                   84.9
                           0.290
Total extinctions: 0
Generation time: 14.405 sec (15.412 average)
 ***** Running generation 297 *****
Population's average fitness: -4.40581 stdev: 106.39879
Best fitness: 228.36260 - size: (16, 49) - species 1 - id 68768
Average adjusted fitness: 0.343
Mean genetic distance 2.783, standard deviation 0.905
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
```

```
1 297
             144
                    228.4
                             0.404
                                      3
    2
       272
             106
                     80.3
                             0.281
                                     84
Total extinctions: 0
Generation time: 15.312 sec (15.323 average)
***** Running generation 298 *****
Population's average fitness: -5.19248 stdev: 105.95615
Best fitness: 244.72193 - size: (16, 49) - species 1 - id 69046
Average adjusted fitness: 0.358
Mean genetic distance 2.795, standard deviation 0.894
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== ====
                 =======
    1 298
             143
                    244.7
                            0.409
    2 273 107
                     81.0
                            0.308
                                     85
Total extinctions: 0
Generation time: 15.572 sec (15.270 average)
***** Running generation 299 *****
Population's average fitness: 4.64693 stdev: 110.17214
Best fitness: 230.32728 - size: (16, 47) - species 1 - id 68482
Average adjusted fitness: 0.432
Mean genetic distance 2.839, standard deviation 0.841
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== =====
  ==== ===
    1 299
             141
                    230.3
                            0.483
                                      5
    2 274
            109
                    89.0
                            0.381
                                     86
Total extinctions: 0
Generation time: 15.403 sec (15.208 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-299
 ***** Running generation 300 *****
Population's average fitness: -2.21742 stdev: 107.89557
Best fitness: 239.53732 - size: (16, 47) - species 1 - id 68482
Average adjusted fitness: 0.374
Mean genetic distance 2.812, standard deviation 0.865
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    1 300
             145
                    239.5
                            0.443
                                      6
    2 275
                     79.4
                            0.304
             105
                                     87
Total extinctions: 0
Generation time: 14.756 sec (15.066 average)
 ***** Running generation 301 *****
Population's average fitness: -5.73267 stdev: 106.58026
Best fitness: 235.93365 - size: (16, 45) - species 1 - id 69704
Average adjusted fitness: 0.338
Mean genetic distance 2.802, standard deviation 0.874
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
       ===
           ====
                 =======
                    235.9
                                      7
    1 301
             149
                            0.416
    2 276
             101
                    84.4
                            0.260
                                     88
```

```
Total extinctions: 0
Generation time: 14.984 sec (15.010 average)
***** Running generation 302 *****
Population's average fitness: -9.87850 stdev: 108.39593
Best fitness: 229.31193 - size: (17, 49) - species 1 - id 69636
Average adjusted fitness: 0.413
Mean genetic distance 2.877, standard deviation 0.845
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    1 302
            144
                  229.3 0.459
                   84.6
    2 277
            106
                            0.367
                                    89
Total extinctions: 0
Generation time: 14.362 sec (14.957 average)
***** Running generation 303 *****
Population's average fitness: -14.56468 stdev: 106.51681
Best fitness: 247.45339 - size: (14, 46) - species 1 - id 70090
Average adjusted fitness: 0.312
Mean genetic distance 2.953, standard deviation 0.837
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 303
           150 247.5 0.389
           100
    2 278
                   83.8 0.235
                                    90
Total extinctions: 0
Generation time: 14.168 sec (14.846 average)
***** Running generation 304 *****
Population's average fitness: -15.85689 stdev: 101.78682
Best fitness: 216.07697 - size: (17, 48) - species 1 - id 70354
Average adjusted fitness: 0.481
Mean genetic distance 2.965, standard deviation 0.831
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 304
           141
                 216.1 0.511 10
    2 279
           109
                    80.7
                            0.450
                                    91
Total extinctions: 0
Generation time: 14.770 sec (14.904 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-304
***** Running generation 305 *****
Population's average fitness: -6.68520 stdev: 105.68854
Best fitness: 229.60174 - size: (17, 48) - species 1 - id 70660
Average adjusted fitness: 0.382
Mean genetic distance 2.909, standard deviation 0.837
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 305
            143
                   229.6
                            0.444
                                    11
    2 280
            107
                    80.4
                            0.319
Total extinctions: 0
Generation time: 15.391 sec (14.912 average)
```

```
***** Running generation 306 *****
Population's average fitness: -6.41627 stdev: 106.43185
Best fitness: 245.95402 - size: (17, 46) - species 1 - id 70804
Average adjusted fitness: 0.347
Mean genetic distance 2.852, standard deviation 0.845
Population of 250 members in 2 species:
       age size fitness adj fit stag
       === ==== ===== ====
                  246.0
           147
    1 306
                          0.421
                                    12
                   77.0
                            0.272
    2 281 103
Total extinctions: 0
Generation time: 14.958 sec (14.968 average)
 ***** Running generation 307 *****
Population's average fitness: 2.81240 stdev: 105.92893
Best fitness: 233.33480 - size: (13, 42) - species 1 - id 71013
Average adjusted fitness: 0.382
Mean genetic distance 2.855, standard deviation 0.856
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ---- --- ---- -----
                 233.3
    1 307
            145
                          0.436
                                    13
                    82.7
    2 282
           105
                            0.329
                                    94
Total extinctions: 0
Generation time: 15.635 sec (15.000 average)
 ***** Running generation 308 *****
Population's average fitness: -10.50289 stdev: 106.09499
Best fitness: 246.14474 - size: (16, 45) - species 1 - id 71342
Average adjusted fitness: 0.406
Mean genetic distance 2.935, standard deviation 0.811
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 308
            143
                   246.1
                            0.458
                                    14
    2 283
            107
                    78.0
                            0.354
                                    95
Total extinctions: 0
Generation time: 14.810 sec (14.924 average)
 ***** Running generation 309 *****
Population's average fitness: -17.06449 stdev: 104.01077
Best fitness: 234.89711 - size: (16, 49) - species 1 - id 71097
Average adjusted fitness: 0.422
Mean genetic distance 2.983, standard deviation 0.777
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 309
                   234.9
                            0.469
                                    15
             141
      284
             109
                    86.0
                            0.374
                                    96
Total extinctions: 0
Generation time: 14.668 sec (14.850 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-309
 ***** Running generation 310 *****
```

```
Population's average fitness: -13.82014 stdev: 104.02280
Best fitness: 235.97435 - size: (19, 53) - species 1 - id 71690
Average adjusted fitness: 0.390
Mean genetic distance 3.055, standard deviation 0.781
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 310
           143 236.0
                           0.452
                                    16
    2 285
            107
                    81.1
                           0.329
                                    97
Total extinctions: 0
Generation time: 14.799 sec (14.854 average)
 ***** Running generation 311 *****
Population's average fitness: -13.06006 stdev: 111.99895
Best fitness: 239.80306 - size: (19, 51) - species 1 - id 72009
Average adjusted fitness: 0.362
Mean genetic distance 2.910, standard deviation 0.798
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 311 144 239.8 0.420
                                    17
                   91.0 0.304
    2 286
           106
                                    98
Total extinctions: 0
Generation time: 13.981 sec (14.754 average)
***** Running generation 312 *****
Population's average fitness: -3.00333 stdev: 107.82789
Best fitness: 229.40204 - size: (17, 48) - species 1 - id 72265
Average adjusted fitness: 0.368
Mean genetic distance 2.805, standard deviation 0.789
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 312 142 229.4 0.410
                                    18
    2 287 108
                    86.6
                           0.327
Total extinctions: 0
Generation time: 15.323 sec (14.850 average)
***** Running generation 313 *****
Population's average fitness: 1.58264 stdev: 111.74878
Best fitness: 250.93990 - size: (17, 48) - species 1 - id 72265
Average adjusted fitness: 0.337
Mean genetic distance 2.805, standard deviation 0.766
Population of 250 members in 2 species:
       age size fitness adj fit stag
      === ==== ===== ====
                 250.9
            151
                            0.432
    1 313
    2 288
            99
                   78.2
                            0.242
                                  100
Total extinctions: 0
Generation time: 14.974 sec (14.931 average)
***** Running generation 314 *****
Population's average fitness: -2.28710 stdev: 111.89560
Best fitness: 271.54410 - size: (17, 48) - species 1 - id 72265
Average adjusted fitness: 0.336
```

```
Mean genetic distance 2.799, standard deviation 0.693
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 314 149 271.5 0.396
    2 289 101
                   89.1
                            0.277
                                   101
Total extinctions: 0
Generation time: 14.501 sec (14.904 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-314
***** Running generation 315 *****
Population's average fitness: 1.28937 stdev: 111.08027
Best fitness: 254.88914 - size: (18, 49) - species 1 - id 72834
Average adjusted fitness: 0.318
Mean genetic distance 2.844, standard deviation 0.722
Population of 250 members in 3 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 315
            79
                   254.9
                            0.386
             100 85.8 0.250
    2 290
                                   102
    3
         0 71
                            -- 0
Total extinctions: 0
Generation time: 15.104 sec (14.875 average)
***** Running generation 316 *****
Population's average fitness: -9.80747 stdev: 111.09303
Best fitness: 251.34567 - size: (17, 48) - species 1 - id 72718
Species 2 with 100 members is stagnated: removing it
Average adjusted fitness: 0.444
Mean genetic distance 2.117, standard deviation 0.374
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 316
           56
                   251.3
                            0.475
                                     2
    3
       1
             194
                   218.4
                            0.414
Total extinctions: 0
Generation time: 14.231 sec (14.802 average)
***** Running generation 317 *****
Population's average fitness: 2.57886 stdev: 112.42963
Best fitness: 243.36856 - size: (19, 51) - species 3 - id 73419
Average adjusted fitness: 0.422
Mean genetic distance 1.963, standard deviation 0.298
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 317
           102
                 199.6
                            0.403
    3
         2 148
                   243.4
                            0.441
Total extinctions: 0
Generation time: 16.208 sec (14.860 average)
***** Running generation 318 *****
Population's average fitness: 15.03617 stdev: 121.53928
Best fitness: 246.77454 - size: (17, 46) - species 3 - id 73151
```

```
Average adjusted fitness: 0.458
Mean genetic distance 1.965, standard deviation 0.322
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                   210.5
                            0.462
    1 318
             104
    3
         3
           146 246.8 0.454
Total extinctions: 0
Generation time: 16.205 sec (14.999 average)
***** Running generation 319 *****
Population's average fitness: 13.09919 stdev: 113.31712
Best fitness: 237.97821 - size: (18, 46) - species 3 - id 73845
Average adjusted fitness: 0.412
Mean genetic distance 1.969, standard deviation 0.321
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    1 319 95 204.9 0.403
           155
    3
       4
                 238.0
                            0.422
Total extinctions: 0
Generation time: 17.356 sec (15.268 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-319
***** Running generation 320 *****
Population's average fitness: 14.12375 stdev: 118.19526
Best fitness: 247.15977 - size: (20, 52) - species 3 - id 74020
Average adjusted fitness: 0.399
Mean genetic distance 1.983, standard deviation 0.333
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 320
            110
                   217.7
                            0.403
                                     6
    3 5 140 247.2 0.395
Total extinctions: 0
Generation time: 16.518 sec (15.440 average)
***** Running generation 321 *****
Population's average fitness: 20.72582 stdev: 117.74702
Best fitness: 245.90793 - size: (19, 46) - species 3 - id 74306
Average adjusted fitness: 0.436
Mean genetic distance 1.986, standard deviation 0.352
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
                   231.4
                            0.451
    1 321
            120
           130 245.9
                            0.422
    3
         6
                                     1
Total extinctions: 0
Generation time: 17.773 sec (15.819 average)
***** Running generation 322 *****
Population's average fitness: 1.27610 stdev: 124.47550
Best fitness: 241.10446 - size: (17, 49) - species 1 - id 74355
Average adjusted fitness: 0.415
Mean genetic distance 2.020, standard deviation 0.343
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 322
           120 241.1 0.403
    3
       7 130 237.7 0.427
Total extinctions: 0
Generation time: 14.941 sec (15.781 average)
***** Running generation 323 *****
Population's average fitness: 26.89387 stdev: 123.87918
Best fitness: 240.23997 - size: (18, 48) - species 1 - id 74805
Average adjusted fitness: 0.478
Mean genetic distance 2.057, standard deviation 0.370
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    1 323
           113 240.2 0.466
       8 137 236.2 0.490
    3
Total extinctions: 0
Generation time: 16.697 sec (15.953 average)
 ***** Running generation 324 *****
Population's average fitness: 15.04507 stdev: 121.22869
Best fitness: 250.03721 - size: (20, 50) - species 3 - id 74605
Average adjusted fitness: 0.472
Mean genetic distance 2.094, standard deviation 0.313
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 324
           125
                  230.4
                           0.473
                   250.0
         9
            125
                            0.471
    3
Total extinctions: 0
Generation time: 16.497 sec (16.153 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-324
***** Running generation 325 *****
Population's average fitness: 11.15634 stdev: 123.36428
Best fitness: 233.97252 - size: (20, 52) - species 3 - id 74582
Average adjusted fitness: 0.513
Mean genetic distance 2.026, standard deviation 0.329
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
           128 232.9 0.539
    1 325
    3
       10
           122
                 234.0
                            0.487
Total extinctions: 0
Generation time: 16.042 sec (16.247 average)
***** Running generation 326 *****
Population's average fitness: 21.37909 stdev: 119.55386
Best fitness: 232.73234 - size: (17, 49) - species 1 - id 74979
Average adjusted fitness: 0.495
Mean genetic distance 1.974, standard deviation 0.372
Population of 250 members in 2 species:
       age size fitness adj fit stag
```

```
====
                 1 326
             126
                   232.7
                            0.503
                                    12
        11
            124
                   224.9
                            0.488
                                     2
Total extinctions: 0
Generation time: 17.296 sec (16.553 average)
 ***** Running generation 327 *****
Population's average fitness: 15.63781 stdev: 119.45143
Best fitness: 234.49508 - size: (18, 48) - species 1 - id 75284
Average adjusted fitness: 0.470
Mean genetic distance 2.058, standard deviation 0.349
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 327
           123 234.5
                           0.499
                                    13
                   225.8 0.441
        12
           127
Total extinctions: 0
Generation time: 17.246 sec (16.657 average)
***** Running generation 328 *****
Population's average fitness: 7.11229 stdev: 119.88713
Best fitness: 250.90518 - size: (16, 46) - species 1 - id 75909
Average adjusted fitness: 0.433
Mean genetic distance 2.026, standard deviation 0.360
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 328 134 250.9 0.483 14
       13 116 241.5 0.383
    3
Total extinctions: 0
Generation time: 16.512 sec (16.688 average)
***** Running generation 329 *****
Population's average fitness: 13.82733 stdev: 122.51874
Best fitness: 242.83540 - size: (16, 46) - species 3 - id 76036
Average adjusted fitness: 0.439
Mean genetic distance 2.041, standard deviation 0.371
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
      === ==== ===== ====
    1 329
           125 224.1
                           0.449
                                    15
                   242.8
    3
       14
            125
                            0.430
Total extinctions: 0
Generation time: 16.318 sec (16.584 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-329
 ***** Running generation 330 *****
Population's average fitness: 8.35689 stdev: 122.31061
Best fitness: 239.55703 - size: (20, 52) - species 3 - id 74582
Average adjusted fitness: 0.437
Mean genetic distance 2.102, standard deviation 0.341
Population of 250 members in 2 species:
       age size fitness adj fit stag
       === ==== ===== ====
 ====
    1 330
            126
                 230.0
                            0.433
                                    16
```

```
15
            124
                   239.6
                           0.440
Total extinctions: 0
Generation time: 15.564 sec (16.489 average)
***** Running generation 331 *****
Population's average fitness: 5.41756 stdev: 115.06376
Best fitness: 251.97205 - size: (21, 52) - species 3 - id 76601
Average adjusted fitness: 0.433
Mean genetic distance 2.142, standard deviation 0.312
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
           119
    1 331
                  228.1
                           0.452
                                    17
       16 131 252.0 0.414
Total extinctions: 0
Generation time: 16.288 sec (16.340 average)
***** Running generation 332 *****
Population's average fitness: 3.55706 stdev: 116.22358
Best fitness: 251.93940 - size: (19, 53) - species 1 - id 76713
Average adjusted fitness: 0.410
Mean genetic distance 2.118, standard deviation 0.293
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 332
            112
                  251.9
                           0.400
    3
       17
            138
                 241.5
                           0.419
Total extinctions: 0
Generation time: 16.004 sec (16.446 average)
***** Running generation 333 *****
Population's average fitness: 4.39466 stdev: 119.22124
Best fitness: 226.11170 - size: (16, 40) - species 1 - id 76656
Average adjusted fitness: 0.435
Mean genetic distance 2.134, standard deviation 0.323
Population of 250 members in 2 species:
      age size fitness adj fit stag
  1 333 117 226.1 0.462
                                   19
                   225.3
                           0.408
       18
            133
Total extinctions: 0
Generation time: 16.597 sec (16.436 average)
 ***** Running generation 334 *****
Population's average fitness: 14.39231 stdev: 119.00001
Best fitness: 244.26869 - size: (20, 52) - species 3 - id 74582
Average adjusted fitness: 0.407
Mean genetic distance 2.117, standard deviation 0.325
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
                 241.0 0.369 20
    1 334
           104
                   244.3
                           0.444
    3
       19
            146
Total extinctions: 0
Generation time: 17.075 sec (16.494 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
```

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Exp2NEAT walker_Run1\neat-checkpoint-334 ***** Running generation 335 ***** Population's average fitness: 7.98840 stdev: 119.41009 Best fitness: 261.07782 - size: (20, 49) - species 3 - id 77528 Average adjusted fitness: 0.368 Mean genetic distance 2.098, standard deviation 0.292 Population of 250 members in 2 species: age size fitness adj fit stag ==== === ====== ===== ==== 1 335 120 224.0 0.349 130 261.1 3 20 0.386 Total extinctions: 0 Generation time: 16.450 sec (16.535 average) ***** Running generation 336 ***** Population's average fitness: 18.12281 stdev: 119.17284 Best fitness: 250.69109 - size: (20, 53) - species 3 - id 77726 Average adjusted fitness: 0.404 Mean genetic distance 2.147, standard deviation 0.323 Population of 250 members in 2 species: age size fitness adj fit stag ID ==== === ===== ===== ==== 122 230.7 0.382 22 1 336 3 21 128 250.7 0.425 Total extinctions: 0 Generation time: 17.033 sec (16.509 average) ***** Running generation 337 ***** Population's average fitness: 23.77855 stdev: 122.05369 Best fitness: 251.15251 - size: (19, 45) - species 3 - id 77549 Average adjusted fitness: 0.406 Mean genetic distance 2.097, standard deviation 0.389 Population of 250 members in 2 species: age size fitness adj fit stag ==== === ===== ===== ==== 244.4 0.389 23 1 337 121 22 129 251.2 0.424 3 Total extinctions: 0 Generation time: 17.458 sec (16.530 average)

***** Running generation 338 *****

Population's average fitness: 15.29168 stdev: 124.48213 Best fitness: 252.26322 - size: (21, 53) - species 3 - id 78172 Average adjusted fitness: 0.444

Mean genetic distance 2.035, standard deviation 0.400

Population of 250 members in 2 species:

age size fitness adj fit stag ==== === ===== ===== ==== 1 338 119 248.6 0.404 131 252.3 0.483 3 23

Total extinctions: 0

Generation time: 16.720 sec (16.551 average)

***** Running generation 339 *****

```
Population's average fitness: 18.63063 stdev: 124.34007
Best fitness: 249.17114 - size: (19, 49) - species 3 - id 78489
Average adjusted fitness: 0.411
Mean genetic distance 2.057, standard deviation 0.403
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 339
           117
                 224.5
                            0.380
                                    25
    3
       24 133
                   249.2
                            0.442
                                     4
Total extinctions: 0
Generation time: 16.663 sec (16.585 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-339
 ***** Running generation 340 *****
Population's average fitness: 29.67484 stdev: 122.09159
Best fitness: 250.11142 - size: (19, 49) - species 3 - id 78489
Average adjusted fitness: 0.439
Mean genetic distance 2.043, standard deviation 0.396
Population of 250 members in 2 species:
       age size fitness adj fit stag
 1 340 117
                            0.413
                   231.7
                                     26
    3
        25
           133
                   250.1
                            0.464
Total extinctions: 0
Generation time: 17.873 sec (16.816 average)
 ***** Running generation 341 *****
Population's average fitness: 27.15120 stdev: 120.90164
Best fitness: 275.40665 - size: (20, 51) - species 1 - id 78124
Average adjusted fitness: 0.416
Mean genetic distance 2.101, standard deviation 0.378
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 341 123
                   275.4
                            0.412
                                     a
    3
        26
           127
                   245.0
                            0.420
                                     6
Total extinctions: 0
Generation time: 17.759 sec (16.963 average)
***** Running generation 342 *****
Population's average fitness: 26.31831 stdev: 124.10094
Best fitness: 250.22501 - size: (19, 47) - species 3 - id 79021
Average adjusted fitness: 0.428
Mean genetic distance 2.167, standard deviation 0.393
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 342 125
                   232.0
                            0.433
    3
       27
           125
                   250.2
                            0.422
                                     7
Total extinctions: 0
Generation time: 17.699 sec (17.133 average)
***** Running generation 343 *****
Population's average fitness: 16.29930 stdev: 124.04647
Best fitness: 245.98269 - size: (19, 51) - species 1 - id 76748
```

```
Average adjusted fitness: 0.453
Mean genetic distance 2.240, standard deviation 0.402
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                   246.0
                            0.440
    1 343
             123
           127 244.7
                            0.467
                                     8
    3
       28
Total extinctions: 0
Generation time: 17.168 sec (17.190 average)
***** Running generation 344 *****
Population's average fitness: 11.95067 stdev: 118.50893
Best fitness: 246.13421 - size: (19, 47) - species 3 - id 79021
Average adjusted fitness: 0.428
Mean genetic distance 2.272, standard deviation 0.408
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 344 122 231.5 0.414
    3
       29
           128
                   246.1
                            0.443
Total extinctions: 0
Generation time: 16.908 sec (17.173 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-344
***** Running generation 345 *****
Population's average fitness: 9.74820 stdev: 124.52586
Best fitness: 239.00979 - size: (18, 48) - species 3 - id 79470
Average adjusted fitness: 0.437
Mean genetic distance 2.239, standard deviation 0.379
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 345
            120
                   236.6
                            0.413
    3
       30 130 239.0
                            0.461
                                    10
Total extinctions: 0
Generation time: 16.767 sec (17.205 average)
***** Running generation 346 *****
Population's average fitness: 6.14907 stdev: 116.84472
Best fitness: 249.45796 - size: (22, 50) - species 3 - id 80024
Average adjusted fitness: 0.421
Mean genetic distance 2.242, standard deviation 0.379
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    1 346
             121
                   218.1
                            0.415
                                    5
           129 249.5
                            0.428
    3
       31
                                    11
Total extinctions: 0
Generation time: 16.733 sec (17.175 average)
***** Running generation 347 *****
Population's average fitness: 21.57844 stdev: 122.88989
Best fitness: 251.13541 - size: (18, 47) - species 3 - id 80272
Average adjusted fitness: 0.410
Mean genetic distance 2.312, standard deviation 0.393
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 347
           124 236.8 0.417
    3
      32
           126 251.1 0.403
                                    12
Total extinctions: 0
Generation time: 17.462 sec (17.175 average)
***** Running generation 348 *****
Population's average fitness: 29.59331 stdev: 123.16465
Best fitness: 253.40907 - size: (19, 49) - species 3 - id 78175
Average adjusted fitness: 0.483
Mean genetic distance 2.285, standard deviation 0.381
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    1 348
           121 226.1 0.456
                                    7
    3 33 129 253.4 0.510
                                    13
Total extinctions: 0
Generation time: 17.957 sec (17.299 average)
 ***** Running generation 349 *****
Population's average fitness: 16.36540 stdev: 120.86201
Best fitness: 229.37380 - size: (19, 50) - species 3 - id 80731
Average adjusted fitness: 0.492
Mean genetic distance 2.234, standard deviation 0.345
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 349
           118
                  217.6
                           0.472
                   229.4
       34
            132
                           0.511
    3
Total extinctions: 0
Generation time: 16.788 sec (17.312 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-349
***** Running generation 350 *****
Population's average fitness: 11.42623 stdev: 124.80105
Best fitness: 245.20606 - size: (18, 51) - species 3 - id 80917
Average adjusted fitness: 0.400
Mean genetic distance 2.302, standard deviation 0.333
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
           119 238.2 0.397
    1 350
    3
       35
           131
                 245.2
                           0.402
                                    15
Total extinctions: 0
Generation time: 17.035 sec (17.228 average)
***** Running generation 351 *****
Population's average fitness: 5.36237 stdev: 118.61330
Best fitness: 224.55579 - size: (18, 49) - species 3 - id 81202
Average adjusted fitness: 0.416
Mean genetic distance 2.344, standard deviation 0.386
Population of 250 members in 2 species:
       age size fitness adj fit stag
```

```
====
                 1 351
            120
                   221.2
                           0.400
                                    10
                   224.6
        36
            130
                           0.432
                                    16
Total extinctions: 0
Generation time: 15.852 sec (17.037 average)
 ***** Running generation 352 *****
Population's average fitness: 14.70513 stdev: 125.96954
Best fitness: 247.19095 - size: (21, 50) - species 3 - id 80952
Average adjusted fitness: 0.501
Mean genetic distance 2.374, standard deviation 0.384
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 352 121 216.3
                           0.515
                                    11
                 247.2 0.488
            129
        37
                                    17
Total extinctions: 0
Generation time: 16.169 sec (16.884 average)
***** Running generation 353 *****
Population's average fitness: 8.00148 stdev: 120.68950
Best fitness: 250.92452 - size: (22, 48) - species 3 - id 81657
Average adjusted fitness: 0.440
Mean genetic distance 2.385, standard deviation 0.400
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 353 130 236.8 0.447
                                   12
       38 120 250.9 0.433
    3
                                    18
Total extinctions: 0
Generation time: 16.050 sec (16.772 average)
***** Running generation 354 *****
Population's average fitness: -6.89736 stdev: 117.19746
Best fitness: 242.07857 - size: (23, 47) - species 3 - id 81847
Average adjusted fitness: 0.401
Mean genetic distance 2.356, standard deviation 0.446
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
      === ==== ===== ====
    1 354
           130 238.6
                           0.402
                                    13
    3
       39
            120
                   242.1
                           0.401
Total extinctions: 0
Generation time: 14.479 sec (16.529 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-354
 ***** Running generation 355 *****
Population's average fitness: 9.01554 stdev: 116.05257
Best fitness: 228.38253 - size: (20, 49) - species 1 - id 80846
Average adjusted fitness: 0.422
Mean genetic distance 2.396, standard deviation 0.450
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 355
            137
                 228.4
                           0.431
                                    14
```

```
40
           113
                   219.4
                           0.412
Total extinctions: 0
Generation time: 16.479 sec (16.500 average)
***** Running generation 356 *****
Population's average fitness: -0.45671 stdev: 113.56424
Best fitness: 246.07649 - size: (21, 50) - species 1 - id 82363
Average adjusted fitness: 0.395
Mean genetic distance 2.453, standard deviation 0.388
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== =====
           153
    1 356
                   246.1
                           0.386
                                    15
       41 97 220.0 0.405
    3
                                   21
Total extinctions: 0
Generation time: 16.074 sec (16.434 average)
***** Running generation 357 *****
Population's average fitness: 16.37455 stdev: 115.83474
Best fitness: 239.47362 - size: (19, 48) - species 1 - id 82429
Average adjusted fitness: 0.448
Mean genetic distance 2.367, standard deviation 0.396
Population of 250 members in 2 species:
     age size fitness adj fit stag
 ==== === ===== ===== ====
           178
    1 357
                 239.5
                           0.390
       42
           72 205.5
                           0.506
Total extinctions: 0
Generation time: 16.320 sec (16.320 average)
***** Running generation 358 *****
Population's average fitness: 12.57623 stdev: 119.33862
Best fitness: 244.30203 - size: (21, 54) - species 1 - id 82534
Average adjusted fitness: 0.474
Mean genetic distance 2.316, standard deviation 0.483
Population of 250 members in 2 species:
      age size fitness adj fit stag
  1 358 153
                  244.3 0.483
                                   17
            97
                   222.6
                           0.464
       43
Total extinctions: 0
Generation time: 16.980 sec (16.223 average)
 ***** Running generation 359 *****
Population's average fitness: 4.40546 stdev: 112.74815
Best fitness: 241.01381 - size: (19, 48) - species 1 - id 82729
Average adjusted fitness: 0.496
Mean genetic distance 2.291, standard deviation 0.564
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== ==== ====== ===== ====
    1 359 137 241.0 0.483 18
    3
           113
                   237.6
                           0.510
       44
Total extinctions: 0
Generation time: 17.140 sec (16.258 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
```

```
walker_Run1\neat-checkpoint-359
```

***** Running generation 360 *****

Population's average fitness: 9.29602 stdev: 118.60686

Best fitness: 240.92611 - size: (22, 50) - species 3 - id 83092

Average adjusted fitness: 0.397

Mean genetic distance 2.315, standard deviation 0.573

Population of 250 members in 2 species:

Total extinctions: 0

Generation time: 16.566 sec (16.211 average)

***** Running generation 361 *****

Population's average fitness: 15.67107 stdev: 117.40155 Best fitness: 234.17553 - size: (23, 57) - species 3 - id 83530

Average adjusted fitness: 0.423

Mean genetic distance 2.278, standard deviation 0.618

Population of 250 members in 2 species:

Total extinctions: 0

Generation time: 17.061 sec (16.332 average)

***** Running generation 362 *****

Population's average fitness: 24.09700 stdev: 118.41201

Best fitness: 258.69701 - size: (19, 45) - species 1 - id 83567

Average adjusted fitness: 0.459

Mean genetic distance 2.354, standard deviation 0.618

Population of 250 members in 2 species:

Total extinctions: 0

Generation time: 17.472 sec (16.462 average)

***** Running generation 363 *****

Population's average fitness: 24.86457 stdev: 116.99557

Best fitness: 241.56982 - size: (21, 54) - species 1 - id 83584

Average adjusted fitness: 0.435

Mean genetic distance 2.376, standard deviation 0.590

Population of 250 members in 2 species:

Total extinctions: 0

Generation time: 17.343 sec (16.591 average)

***** Running generation 364 *****

```
Population's average fitness: 18.09673 stdev: 113.12902
Best fitness: 240.92839 - size: (19, 43) - species 1 - id 84225
Average adjusted fitness: 0.430
Mean genetic distance 2.383, standard deviation 0.561
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    1 364
            125
                 240.9
                            0.433
                                     23
    3
       49 125
                    221.7
                            0.427
                                     29
Total extinctions: 0
Generation time: 16.657 sec (16.809 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-364
 ***** Running generation 365 *****
Population's average fitness: 0.29558 stdev: 114.96341
Best fitness: 228.26327 - size: (21, 45) - species 3 - id 84093
Average adjusted fitness: 0.385
Mean genetic distance 2.401, standard deviation 0.532
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    1 365 121
                    224.0
                            0.363
                                     24
    3
       50
           129
                    228.3
                            0.407
Total extinctions: 0
Generation time: 15.901 sec (16.751 average)
 ***** Running generation 366 *****
Population's average fitness: 17.45553 stdev: 117.52629
Best fitness: 236.32381 - size: (22, 55) - species 1 - id 84392
Average adjusted fitness: 0.421
Mean genetic distance 2.336, standard deviation 0.547
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 366 121
                            0.413
                                     25
                    236.3
    3
       51
           129
                    235.3
                            0.429
                                     31
Total extinctions: 0
Generation time: 16.736 sec (16.818 average)
***** Running generation 367 *****
Population's average fitness: 19.38788 stdev: 121.57099
Best fitness: 244.49062 - size: (23, 51) - species 3 - id 84696
Average adjusted fitness: 0.486
Mean genetic distance 2.323, standard deviation 0.552
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    1 367
           122
                   240.7
                            0.474
                                     26
    3
       52 128
                    244.5
                            0.499
                                     32
Total extinctions: 0
Generation time: 16.439 sec (16.830 average)
 ***** Running generation 368 *****
Population's average fitness: 18.00442 stdev: 116.17763
Best fitness: 244.46149 - size: (22, 48) - species 3 - id 85099
```

```
Average adjusted fitness: 0.449
Mean genetic distance 2.319, standard deviation 0.541
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                   224.1
                            0.429
    1 368
             121
    3
       53
           129 244.5 0.469
                                    33
Total extinctions: 0
Generation time: 16.846 sec (16.816 average)
***** Running generation 369 *****
Population's average fitness: 19.02440 stdev: 117.07269
Best fitness: 254.23968 - size: (21, 45) - species 3 - id 84093
Average adjusted fitness: 0.415
Mean genetic distance 2.313, standard deviation 0.540
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 369 122 250.4 0.408 28
    3
       54
           128
                 254.2
                            0.421
                                    34
Total extinctions: 0
Generation time: 16.563 sec (16.758 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-369
***** Running generation 370 *****
Population's average fitness: 15.23706 stdev: 117.03349
Best fitness: 221.45685 - size: (23, 52) - species 3 - id 85296
Average adjusted fitness: 0.431
Mean genetic distance 2.317, standard deviation 0.552
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 370
            123
                   206.6
                            0.422
    3
       55 127 221.5
                            0.441
                                    35
Total extinctions: 0
Generation time: 16.631 sec (16.765 average)
***** Running generation 371 *****
Population's average fitness: 18.73336 stdev: 124.17478
Best fitness: 252.29196 - size: (23, 53) - species 3 - id 85818
Average adjusted fitness: 0.422
Mean genetic distance 2.406, standard deviation 0.504
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                   235.1
    1 371
             118
                            0.384
           132 252.3
                            0.459
    3
       56
                                    36
Total extinctions: 0
Generation time: 16.360 sec (16.695 average)
***** Running generation 372 *****
Population's average fitness: 27.64838 stdev: 122.79017
Best fitness: 236.39501 - size: (20, 48) - species 3 - id 85826
Average adjusted fitness: 0.452
Mean genetic distance 2.420, standard deviation 0.549
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== =====
    1 372
           119 233.7 0.433 31
    3
      57
           131
                 236.4
                           0.470
                                    37
Total extinctions: 0
Generation time: 16.933 sec (16.641 average)
***** Running generation 373 *****
Population's average fitness: 24.59410 stdev: 124.85405
Best fitness: 241.53981 - size: (20, 50) - species 1 - id 86122
Average adjusted fitness: 0.478
Mean genetic distance 2.306, standard deviation 0.647
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 373
           120 241.5 0.459
           130 238.0 0.497
    3 58
Total extinctions: 0
Generation time: 16.487 sec (16.555 average)
 ***** Running generation 374 *****
Population's average fitness: 1.71978 stdev: 120.16874
Best fitness: 237.03508 - size: (23, 47) - species 3 - id 85794
Average adjusted fitness: 0.407
Mean genetic distance 2.309, standard deviation 0.634
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    1 374
           119
                  232.8
                           0.383
                   237.0
                           0.431
       59
            131
    3
Total extinctions: 0
Generation time: 14.745 sec (16.364 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-374
***** Running generation 375 *****
Population's average fitness: 13.89433 stdev: 120.88999
Best fitness: 241.69028 - size: (23, 50) - species 3 - id 86739
Average adjusted fitness: 0.401
Mean genetic distance 2.247, standard deviation 0.662
Population of 250 members in 2 species:
       age size fitness adj fit stag
      === ==== ===== ====
                 215.3 0.354 34
    1 375
           115
    3
       60
           135
                 241.7
                           0.448
                                    40
Total extinctions: 0
Generation time: 17.000 sec (16.474 average)
***** Running generation 376 *****
Population's average fitness: 27.05371 stdev: 125.67230
Best fitness: 272.90202 - size: (23, 49) - species 3 - id 86649
Average adjusted fitness: 0.419
Mean genetic distance 2.255, standard deviation 0.648
Population of 250 members in 2 species:
       age size fitness adj fit stag
```

```
====
                 ======
    1 376
             114
                   227.3
                            0.377
                                     35
            136
                   272.9
                            0.461
        61
Total extinctions: 0
Generation time: 16.281 sec (16.428 average)
 ***** Running generation 377 *****
Population's average fitness: 9.11662 stdev: 128.72366
Best fitness: 246.59969 - size: (22, 49) - species 3 - id 86891
Average adjusted fitness: 0.417
Mean genetic distance 2.264, standard deviation 0.577
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 377
           112 238.5
                           0.366
                                    36
                   246.6 0.469
       62
            138
Total extinctions: 0
Generation time: 15.413 sec (16.326 average)
***** Running generation 378 *****
Population's average fitness: 12.70367 stdev: 116.53739
Best fitness: 245.10447 - size: (23, 49) - species 3 - id 87442
Average adjusted fitness: 0.372
Mean genetic distance 2.256, standard deviation 0.527
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 378 110 209.5 0.320
                                    37
       63 140 245.1 0.424
    3
                                     2
Total extinctions: 0
Generation time: 16.160 sec (16.257 average)
***** Running generation 379 *****
Population's average fitness: 21.78257 stdev: 126.09072
Best fitness: 272.43360 - size: (23, 50) - species 3 - id 87621
Average adjusted fitness: 0.384
Mean genetic distance 2.238, standard deviation 0.542
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
       === ==== ===== ====
    1 379
           109 224.5 0.336
                                    38
                   272.4
    3
       64
            141
                            0.432
Total extinctions: 0
Generation time: 16.706 sec (16.272 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-379
 ***** Running generation 380 *****
Population's average fitness: 34.70239 stdev: 121.85446
Best fitness: 259.87368 - size: (21, 53) - species 3 - id 87389
Average adjusted fitness: 0.417
Mean genetic distance 2.211, standard deviation 0.566
Population of 250 members in 2 species:
       age size fitness adj fit stag
       === ==== ===== ====
 ====
    1 380
            113
                 212.6
                            0.392
                                    39
```

```
65
           137
                   259.9
                           0.443
Total extinctions: 0
Generation time: 17.936 sec (16.402 average)
***** Running generation 381 *****
Population's average fitness: 37.01645 stdev: 119.59120
Best fitness: 263.86952 - size: (23, 49) - species 3 - id 87442
Average adjusted fitness: 0.446
Mean genetic distance 2.191, standard deviation 0.632
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ======
           118
    1 381
                  207.6
                           0.439
                                    40
       66 132 263.9 0.454
    3
                                   5
Total extinctions: 0
Generation time: 18.293 sec (16.595 average)
***** Running generation 382 *****
Population's average fitness: 19.55419 stdev: 124.29055
Best fitness: 258.03291 - size: (24, 52) - species 3 - id 88341
Average adjusted fitness: 0.452
Mean genetic distance 2.221, standard deviation 0.572
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 382
           119
                 236.5
                           0.428
                                   41
    3
       67 131 258.0
                           0.475
Total extinctions: 0
Generation time: 16.232 sec (16.525 average)
***** Running generation 383 *****
Population's average fitness: 11.91890 stdev: 126.04122
Best fitness: 259.26279 - size: (24, 55) - species 3 - id 88544
Average adjusted fitness: 0.387
Mean genetic distance 2.255, standard deviation 0.579
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
  1 383 115 225.4 0.342
                                   42
                   259.3
                           0.432
    3
       68
           135
Total extinctions: 0
Generation time: 15.665 sec (16.443 average)
 ***** Running generation 384 *****
Population's average fitness: 29.94044 stdev: 121.95275
Best fitness: 244.29459 - size: (24, 51) - species 3 - id 88832
Average adjusted fitness: 0.465
Mean genetic distance 2.280, standard deviation 0.592
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== ==== ====== ===== ====
    1 384 118 233.5 0.447
                                   43
            132
                   244.3
                           0.482
    3
       69
Total extinctions: 0
Generation time: 16.894 sec (16.658 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
```

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```
Exp2NEAT
walker_Run1\neat-checkpoint-384
 ***** Running generation 385 *****
Population's average fitness: 4.86586 stdev: 130.68824
Best fitness: 267.14190 - size: (20, 50) - species 3 - id 88732
Average adjusted fitness: 0.424
Mean genetic distance 2.380, standard deviation 0.568
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 385
           114 250.7 0.371
       70 136 267.1
                            0.478
    3
Total extinctions: 0
Generation time: 14.850 sec (16.443 average)
***** Running generation 386 *****
Population's average fitness: 7.65950 stdev: 117.17576
Best fitness: 234.21314 - size: (17, 40) - species 1 - id 88417
Average adjusted fitness: 0.451
Mean genetic distance 2.355, standard deviation 0.554
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
 ==== ===
           ==== ====== =====
    1 386
                 234.2 0.436
                                    45
           117
    3
       71 133
                 231.0
                            0.467
Total extinctions: 0
Generation time: 16.488 sec (16.464 average)
 ***** Running generation 387 *****
Population's average fitness: 21.83628 stdev: 124.93810
Best fitness: 254.65096 - size: (21, 51) - species 3 - id 88955
Average adjusted fitness: 0.460
Mean genetic distance 2.298, standard deviation 0.554
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 387
           114
                 211.0
                            0.412
                                    46
    3
       72
           136
                   254.7
                            0.509
Total extinctions: 0
Generation time: 16.877 sec (16.610 average)
 ***** Running generation 388 *****
Population's average fitness: 25.77098 stdev: 128.09330
Best fitness: 261.19637 - size: (21, 51) - species 3 - id 88955
Average adjusted fitness: 0.415
Mean genetic distance 2.278, standard deviation 0.576
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
      388
            119
                   248.6
                            0.409
                                    47
    1
    3
        73
            131
                   261.2
                            0.420
                                    12
```

***** Running generation 389 *****

Generation time: 16.303 sec (16.624 average)

Total extinctions: 0

```
Population's average fitness: 13.80466 stdev: 122.25556
Best fitness: 252.62027 - size: (23, 49) - species 3 - id 89691
Average adjusted fitness: 0.433
Mean genetic distance 2.238, standard deviation 0.594
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    1 389
           118 229.0
                            0.412
    3
       74 132
                   252.6
                            0.454
                                     13
Total extinctions: 0
Generation time: 16.589 sec (16.613 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-389
 ***** Running generation 390 *****
Population's average fitness: 15.87017 stdev: 120.62677
Best fitness: 231.77208 - size: (20, 41) - species 1 - id 90006
Average adjusted fitness: 0.452
Mean genetic distance 2.198, standard deviation 0.632
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    1 390 122
                            0.457
                                     49
                   231.8
    3
        75
            128
                   230.3
                            0.447
                                     14
Total extinctions: 0
Generation time: 16.466 sec (16.466 average)
 ***** Running generation 391 *****
Population's average fitness: 15.83072 stdev: 122.01639
Best fitness: 247.37132 - size: (20, 49) - species 3 - id 89370
Average adjusted fitness: 0.473
Mean genetic distance 2.218, standard deviation 0.622
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 391 123
                   242.8
                            0.463
                                     50
    3
       76
           127
                   247.4
                            0.484
                                     15
Total extinctions: 0
Generation time: 17.133 sec (16.350 average)
***** Running generation 392 *****
Population's average fitness: 10.22315 stdev: 130.18131
Best fitness: 249.51661 - size: (24, 53) - species 3 - id 90633
Average adjusted fitness: 0.397
Mean genetic distance 2.244, standard deviation 0.662
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    1 392 124
                   227.4
                            0.391
                                     51
    3
       77
           126
                   249.5
                            0.403
                                     16
Total extinctions: 0
Generation time: 15.040 sec (16.230 average)
 ***** Running generation 393 *****
Population's average fitness: 15.93206 stdev: 126.16817
Best fitness: 254.88212 - size: (21, 52) - species 3 - id 90629
```

```
Average adjusted fitness: 0.442
Mean genetic distance 2.217, standard deviation 0.673
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                   238.2
    1 393
             123
                            0.436
    3
       78
           127 254.9 0.447
                                    17
Total extinctions: 0
Generation time: 15.067 sec (16.171 average)
***** Running generation 394 *****
Population's average fitness: 30.06557 stdev: 123.88558
Best fitness: 245.09902 - size: (18, 34) - species 1 - id 90973
Average adjusted fitness: 0.434
Mean genetic distance 2.213, standard deviation 0.659
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 394 118 245.1 0.394 53
    3
       79
           132
                 232.8
                            0.474
                                    18
Total extinctions: 0
Generation time: 16.631 sec (16.144 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-394
***** Running generation 395 *****
Population's average fitness: 21.44518 stdev: 125.68312
Best fitness: 231.39036 - size: (20, 43) - species 1 - id 91264
Average adjusted fitness: 0.444
Mean genetic distance 2.261, standard deviation 0.657
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 395
            116
                   231.4
                            0.408
    3
       80 134 227.9
                            0.481
                                    19
Total extinctions: 0
Generation time: 16.641 sec (16.324 average)
***** Running generation 396 *****
Population's average fitness: 16.59617 stdev: 126.02481
Best fitness: 234.70256 - size: (23, 52) - species 3 - id 91148
Average adjusted fitness: 0.431
Mean genetic distance 2.303, standard deviation 0.641
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                   215.2
    1 396
             117
                            0.404
           133 234.7
                            0.459
    3
       81
                                    20
Total extinctions: 0
Generation time: 15.747 sec (16.249 average)
***** Running generation 397 *****
Population's average fitness: 21.67133 stdev: 127.83502
Best fitness: 256.61150 - size: (18, 43) - species 1 - id 91343
Average adjusted fitness: 0.445
Mean genetic distance 2.309, standard deviation 0.643
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 397
           116 256.6 0.416 56
    3
      82
           134
                 237.5 0.475 21
Total extinctions: 0
Generation time: 15.704 sec (16.132 average)
***** Running generation 398 *****
Population's average fitness: 22.28066 stdev: 121.17748
Best fitness: 242.10515 - size: (21, 53) - species 3 - id 91945
Average adjusted fitness: 0.418
Mean genetic distance 2.373, standard deviation 0.594
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    1 398
           117 237.5 0.394
                                   57
    3 83 133 242.1 0.442 22
Total extinctions: 0
Generation time: 16.152 sec (16.117 average)
***** Running generation 399 *****
Population's average fitness: 18.52922 stdev: 121.33511
Best fitness: 227.10893 - size: (17, 38) - species 1 - id 92139
Average adjusted fitness: 0.444
Mean genetic distance 2.394, standard deviation 0.584
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
                 227.1
    1 399
           116
                           0.410
                   223.5
                           0.479
       84
            134
    3
Total extinctions: 0
Generation time: 16.120 sec (16.070 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-399
***** Running generation 400 *****
Population's average fitness: 24.09502 stdev: 123.40769
Best fitness: 273.14449 - size: (21, 51) - species 3 - id 92185
Average adjusted fitness: 0.411
Mean genetic distance 2.392, standard deviation 0.623
Population of 250 members in 2 species:
       age size fitness adj fit stag
      === ==== ===== ====
           112 222.1 0.354 59
    1 400
    3
       85
           138 273.1 0.468
Total extinctions: 0
Generation time: 16.318 sec (16.055 average)
***** Running generation 401 *****
Population's average fitness: 24.62352 stdev: 123.16360
Best fitness: 239.16286 - size: (22, 42) - species 3 - id 92388
Average adjusted fitness: 0.477
Mean genetic distance 2.375, standard deviation 0.668
Population of 250 members in 2 species:
       age size fitness adj fit stag
```

```
====
           ====
                 1 401
            115
                   232.5
                           0.453
                                    60
                   239.2
        86
            135
                           0.501
                                     1
Total extinctions: 0
Generation time: 16.579 sec (16.000 average)
 ***** Running generation 402 *****
Population's average fitness: 16.95621 stdev: 120.76921
Best fitness: 248.50757 - size: (17, 40) - species 1 - id 92790
Average adjusted fitness: 0.439
Mean genetic distance 2.416, standard deviation 0.684
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 402 116 248.5 0.411
                                    61
                 231.5 0.467
            134
       87
Total extinctions: 0
Generation time: 16.195 sec (16.115 average)
***** Running generation 403 *****
Population's average fitness: 14.27162 stdev: 119.73046
Best fitness: 238.15896 - size: (17, 40) - species 1 - id 92790
Average adjusted fitness: 0.437
Mean genetic distance 2.417, standard deviation 0.630
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 403 117 238.2 0.411
       88 133 234.1 0.464
    3
                                     3
Total extinctions: 0
Generation time: 16.178 sec (16.226 average)
***** Running generation 404 *****
Population's average fitness: 23.02829 stdev: 123.01670
Best fitness: 252.03036 - size: (22, 51) - species 3 - id 93328
Average adjusted fitness: 0.421
Mean genetic distance 2.441, standard deviation 0.678
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
      === ==== ===== ====
    1 404
           125 242.9 0.446
                                   63
                   252.0
    3
       89
            125
                           0.397
Total extinctions: 0
Generation time: 16.513 sec (16.214 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-404
 ***** Running generation 405 *****
Population's average fitness: 23.95799 stdev: 124.64725
Best fitness: 239.98230 - size: (21, 48) - species 3 - id 93254
Average adjusted fitness: 0.541
Mean genetic distance 2.466, standard deviation 0.713
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 405
            122 235.0
                           0.519
                                    64
```

```
90
           128
                   240.0
                           0.563
Total extinctions: 0
Generation time: 17.126 sec (16.263 average)
***** Running generation 406 *****
Population's average fitness: 17.29570 stdev: 122.63668
Best fitness: 268.18255 - size: (24, 48) - species 3 - id 93800
Average adjusted fitness: 0.390
Mean genetic distance 2.466, standard deviation 0.686
Population of 250 members in 2 species:
       age size fitness adj fit stag
           1 406
           119
                  259.3
                           0.363
      91 131 268.2 0.417
    3
Total extinctions: 0
Generation time: 15.707 sec (16.259 average)
***** Running generation 407 *****
Population's average fitness: 23.08965 stdev: 129.62958
Best fitness: 247.28966 - size: (17, 41) - species 1 - id 93477
Average adjusted fitness: 0.437
Mean genetic distance 2.441, standard deviation 0.650
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
           123
    1 407
                   247.3
                           0.443
    3
       92
           127 246.1
                           0.431
                                   7
Total extinctions: 0
Generation time: 15.854 sec (16.274 average)
***** Running generation 408 *****
Population's average fitness: 20.06176 stdev: 124.30818
Best fitness: 243.68337 - size: (21, 49) - species 3 - id 93632
Average adjusted fitness: 0.459
Mean genetic distance 2.430, standard deviation 0.622
Population of 250 members in 2 species:
      age size fitness adj fit stag
  1 408 125 215.7 0.465
                                   67
                   243.7
       93
           125
                           0.452
Total extinctions: 0
Generation time: 15.457 sec (16.205 average)
 ***** Running generation 409 *****
Population's average fitness: 26.27022 stdev: 125.54523
Best fitness: 255.84640 - size: (17, 39) - species 1 - id 93984
Average adjusted fitness: 0.435
Mean genetic distance 2.453, standard deviation 0.630
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    1 409 122 255.8 0.415 68
       94
           128
                   248.4
                           0.455
    3
Total extinctions: 0
Generation time: 16.487 sec (16.241 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
```

```
walker_Run1\neat-checkpoint-409
```

```
***** Running generation 410 *****
```

Population's average fitness: 24.29894 stdev: 124.85924

Best fitness: 245.02559 - size: (16, 41) - species 1 - id 94733

Average adjusted fitness: 0.514

Mean genetic distance 2.333, standard deviation 0.679

Population of 250 members in 2 species:

```
ID age size fitness adj fit stag
=== == === ==== ==== ====

1 410 121 245.0 0.500 69
3 95 129 229.1 0.529 10
```

Total extinctions: 0

Generation time: 15.830 sec (16.192 average)

***** Running generation 411 *****

Population's average fitness: 12.66056 stdev: 123.33640

Best fitness: 248.43741 - size: (17, 39) - species 1 - id 93984

Average adjusted fitness: 0.468

Mean genetic distance 2.292, standard deviation 0.627

Population of 250 members in 2 species:

Total extinctions: 0

Generation time: 16.250 sec (16.160 average)

***** Running generation 412 *****

Population's average fitness: 17.49602 stdev: 129.49950

Best fitness: 258.92208 - size: (17, 45) - species 1 - id 95212

Average adjusted fitness: 0.406

Mean genetic distance 2.321, standard deviation 0.630

Population of 250 members in 2 species:

| ID | age | size | fitness | adj fit | stag |
|------|-----|------|---------|---------|------|
| ==== | === | ==== | ====== | ====== | ==== |
| 1 | 412 | 122 | 258.9 | 0.402 | 71 |
| 3 | 97 | 128 | 244.8 | 0.411 | 12 |

Total extinctions: 0

Generation time: 15.133 sec (16.053 average)

***** Running generation 413 *****

Population's average fitness: 29.04504 stdev: 124.73538

Best fitness: 257.54389 - size: (23, 50) - species 3 - id 95300

Average adjusted fitness: 0.502

Mean genetic distance 2.379, standard deviation 0.581

Population of 250 members in 2 species:

Total extinctions: 0

Generation time: 16.255 sec (16.061 average)

^{*****} Running generation 414 *****

```
Population's average fitness: 23.71168 stdev: 125.37020
Best fitness: 240.39882 - size: (22, 52) - species 3 - id 95668
Average adjusted fitness: 0.425
Mean genetic distance 2.298, standard deviation 0.630
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    1 414
            122
                 233.7
                            0.412
                                     73
    3
       99 128
                    240.4
                            0.437
                                     14
Total extinctions: 0
Generation time: 15.282 sec (15.938 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-414
 ***** Running generation 415 *****
Population's average fitness: 28.92484 stdev: 126.87126
Best fitness: 242.00018 - size: (23, 50) - species 3 - id 95357
Average adjusted fitness: 0.474
Mean genetic distance 2.291, standard deviation 0.705
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    1 415 124
                    222.0
                            0.475
                                     74
    3 100
           126
                    242.0
                            0.473
                                     15
Total extinctions: 0
Generation time: 15.888 sec (15.814 average)
 ***** Running generation 416 *****
Population's average fitness: 14.02605 stdev: 122.58138
Best fitness: 245.68653 - size: (17, 41) - species 1 - id 95553
Average adjusted fitness: 0.432
Mean genetic distance 2.294, standard deviation 0.694
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 416 126
                    245.7
                            0.445
                                     75
    3 101
             124
                    236.6
                            0.419
                                     16
Total extinctions: 0
Generation time: 15.596 sec (15.803 average)
***** Running generation 417 *****
Population's average fitness: 28.02883 stdev: 127.05295
Best fitness: 245.54064 - size: (18, 43) - species 1 - id 96317
Average adjusted fitness: 0.488
Mean genetic distance 2.382, standard deviation 0.630
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    1 417
            127
                    245.5
                            0.497
                                     76
    3 102
           123
                    236.1
                            0.479
                                     17
Total extinctions: 0
Generation time: 16.761 sec (15.894 average)
 ***** Running generation 418 *****
Population's average fitness: 26.43818 stdev: 130.61382
Best fitness: 250.67447 - size: (25, 49) - species 3 - id 96443
```

```
Average adjusted fitness: 0.450
Mean genetic distance 2.417, standard deviation 0.635
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                   233.5
    1 418
            121
                            0.416
    3 103
           129 250.7
                            0.483
                                    18
Total extinctions: 0
Generation time: 15.727 sec (15.921 average)
***** Running generation 419 *****
Population's average fitness: 15.83972 stdev: 128.67744
Best fitness: 249.26378 - size: (22, 45) - species 3 - id 96262
Average adjusted fitness: 0.416
Mean genetic distance 2.355, standard deviation 0.630
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 419
           120 229.5 0.398 78
    3 104
           130
                 249.3
                            0.435
                                    19
Total extinctions: 0
Generation time: 15.265 sec (15.799 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-419
***** Running generation 420 *****
Population's average fitness: 16.58455 stdev: 124.68727
Best fitness: 235.30248 - size: (18, 41) - species 1 - id 94436
Average adjusted fitness: 0.465
Mean genetic distance 2.391, standard deviation 0.575
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 420
            123
                   235.3
                            0.469
                                    79
    3 105 127 227.9
                            0.461
                                    20
Total extinctions: 0
Generation time: 15.762 sec (15.792 average)
***** Running generation 421 *****
Population's average fitness: 26.56825 stdev: 125.02065
Best fitness: 242.04381 - size: (17, 40) - species 1 - id 97314
Average adjusted fitness: 0.505
Mean genetic distance 2.400, standard deviation 0.584
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
                   242.0
    1 421
             124
                            0.507
                                    80
           126 241.6
    3 106
                            0.503
                                    21
Total extinctions: 0
Generation time: 16.307 sec (15.798 average)
***** Running generation 422 *****
Population's average fitness: -0.69437 stdev: 117.38440
Best fitness: 247.60091 - size: (23, 49) - species 3 - id 97402
Average adjusted fitness: 0.386
Mean genetic distance 2.364, standard deviation 0.600
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 422
           121 247.5 0.367 81
    3 107 129 247.6 0.406
                                    22
Total extinctions: 0
Generation time: 15.196 sec (15.804 average)
***** Running generation 423 *****
Population's average fitness: 8.86667 stdev: 120.45766
Best fitness: 232.39850 - size: (23, 51) - species 3 - id 97127
Average adjusted fitness: 0.405
Mean genetic distance 2.315, standard deviation 0.686
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    1 423
           116 227.9 0.361 82
    3 108 134 232.4 0.449
Total extinctions: 0
Generation time: 15.118 sec (15.690 average)
 ***** Running generation 424 *****
Population's average fitness: 26.35677 stdev: 123.83562
Best fitness: 254.52791 - size: (22, 48) - species 3 - id 98020
Average adjusted fitness: 0.440
Mean genetic distance 2.329, standard deviation 0.652
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 424
           115
                  234.0
                           0.399
    3 109
                   254.5
           135
                           0.480
Total extinctions: 0
Generation time: 16.515 sec (15.814 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-424
***** Running generation 425 *****
Population's average fitness: 34.29367 stdev: 126.45426
Best fitness: 249.17879 - size: (23, 48) - species 3 - id 97714
Average adjusted fitness: 0.493
Mean genetic distance 2.294, standard deviation 0.644
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 425 117 232.1 0.471 84
    3 110 133
                 249.2 0.516
                                    25
Total extinctions: 0
Generation time: 16.690 sec (15.894 average)
***** Running generation 426 *****
Population's average fitness: 20.05516 stdev: 128.37217
Best fitness: 266.65372 - size: (22, 48) - species 3 - id 98020
Average adjusted fitness: 0.392
Mean genetic distance 2.314, standard deviation 0.633
Population of 250 members in 2 species:
       age size fitness adj fit stag
```

```
====
       ===
           ====
                 ======
                         ======
                   242.2
                                    85
    1 426
            115
                            0.356
    3 111
            135
                   266.7
                            0.427
                                    26
Total extinctions: 0
Generation time: 15.739 sec (15.908 average)
 ***** Running generation 427 *****
Population's average fitness: 30.49526 stdev: 123.83612
Best fitness: 238.21605 - size: (23, 50) - species 3 - id 98408
Average adjusted fitness: 0.470
Mean genetic distance 2.336, standard deviation 0.662
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 427
           119 220.0
                            0.463
                                    86
                   238.2 0.477
    3 112
           131
                                    27
Total extinctions: 0
Generation time: 16.321 sec (15.864 average)
***** Running generation 428 *****
Population's average fitness: 8.68781 stdev: 122.69988
Best fitness: 235.38081 - size: (22, 47) - species 3 - id 98915
Average adjusted fitness: 0.417
Mean genetic distance 2.398, standard deviation 0.604
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 428 118 221.2 0.393
                                    87
    3 113 132 235.4 0.440
                                    28
Total extinctions: 0
Generation time: 14.862 sec (15.777 average)
***** Running generation 429 *****
Population's average fitness: 28.08749 stdev: 127.19427
Best fitness: 244.79203 - size: (22, 51) - species 3 - id 98722
Average adjusted fitness: 0.425
Mean genetic distance 2.410, standard deviation 0.669
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
       === ==== ===== ====
    1 429
           115 239.7
                            0.382
                                    88
                   244.8
    3 114
            135
                            0.468
Total extinctions: 0
Generation time: 16.072 sec (15.858 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-429
 ***** Running generation 430 *****
Population's average fitness: 15.23617 stdev: 124.67300
Best fitness: 273.60826 - size: (24, 54) - species 3 - id 98847
Average adjusted fitness: 0.361
Mean genetic distance 2.399, standard deviation 0.694
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 430
            118
                 239.6
                            0.347
                                    89
```

```
3 115 132
                   273.6
                           0.375
Total extinctions: 0
Generation time: 15.193 sec (15.801 average)
***** Running generation 431 *****
Population's average fitness: 12.65898 stdev: 123.40164
Best fitness: 246.92329 - size: (19, 42) - species 1 - id 99483
Average adjusted fitness: 0.501
Mean genetic distance 2.423, standard deviation 0.655
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ====== ======
    1 431
           119 246.9
                           0.478
                                    90
    3 116 131 237.7 0.524
                                   1
Total extinctions: 0
Generation time: 16.078 sec (15.778 average)
***** Running generation 432 *****
Population's average fitness: 20.18448 stdev: 125.62486
Best fitness: 242.96760 - size: (22, 51) - species 3 - id 99751
Average adjusted fitness: 0.406
Mean genetic distance 2.468, standard deviation 0.581
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
           116
                         0.369
    1 432
                  234.4
    3 117 134 243.0
                           0.442
Total extinctions: 0
Generation time: 15.325 sec (15.791 average)
***** Running generation 433 *****
Population's average fitness: 27.57204 stdev: 126.60150
Best fitness: 235.97027 - size: (21, 51) - species 3 - id 100014
Average adjusted fitness: 0.478
Mean genetic distance 2.466, standard deviation 0.600
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
  1 433 112 228.3 0.414
                   236.0
    3 118
           138
                           0.541
Total extinctions: 0
Generation time: 16.058 sec (15.885 average)
 ***** Running generation 434 *****
Population's average fitness: 31.15557 stdev: 124.52429
Best fitness: 252.54090 - size: (23, 53) - species 3 - id 100292
Average adjusted fitness: 0.441
Mean genetic distance 2.434, standard deviation 0.616
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== ==== ====== ===== ====
    1 434 116 225.0 0.422 93
           134
    3 119
                 252.5
                           0.460
Total extinctions: 0
Generation time: 16.549 sec (15.889 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
```

08.11.24, 17:00

```
Exp2NEAT
walker_Run1\neat-checkpoint-434
 ***** Running generation 435 *****
```

Population's average fitness: 24.25109 stdev: 126.16186

Best fitness: 232.65409 - size: (19, 48) - species 1 - id 100398

Average adjusted fitness: 0.464

Mean genetic distance 2.423, standard deviation 0.589

Population of 250 members in 2 species:

```
age size fitness adj fit stag
==== === ====== ===== ====
  1 435 117 232.7 0.439
  3 120 133 228.1
                     0.489
```

Total extinctions: 0

Generation time: 16.576 sec (15.877 average)

***** Running generation 436 *****

Population's average fitness: 17.92966 stdev: 127.36650

Best fitness: 256.14912 - size: (23, 52) - species 3 - id 100280

Average adjusted fitness: 0.421

Mean genetic distance 2.381, standard deviation 0.586

Population of 250 members in 2 species:

```
age size fitness adj fit stag
ID
==== === ===== ===== ====
  1 436 115 231.8 0.384
                           95
  3 121 135 256.1
                     0.459
                            6
```

Total extinctions: 0

Generation time: 16.269 sec (15.930 average)

***** Running generation 437 *****

Population's average fitness: 34.14478 stdev: 124.22962

Best fitness: 254.88685 - size: (22, 53) - species 3 - id 100948

Average adjusted fitness: 0.438

Mean genetic distance 2.387, standard deviation 0.653

Population of 250 members in 2 species:

```
age size fitness adj fit stag
==== === ===== ===== ====
  1 437
       119
            249.6
                     0.431
                            96
  3 122 131
              254.9
                     0.446
```

Total extinctions: 0

Generation time: 19.837 sec (16.282 average)

***** Running generation 438 *****

Population's average fitness: 35.19567 stdev: 124.07734

Best fitness: 273.52033 - size: (23, 49) - species 3 - id 101256

Average adjusted fitness: 0.457

Mean genetic distance 2.376, standard deviation 0.729

Population of 250 members in 2 species:

```
age size fitness adj fit stag
==== === ===== ===== ====
  1 438
               252.1
                      0.394
                              97
        113
  3 123
        137
               273.5
                      0.520
```

Total extinctions: 0

Generation time: 22.039 sec (17.000 average)

***** Running generation 439 *****

```
Population's average fitness: 20.85874 stdev: 122.02954
Best fitness: 265.25229 - size: (21, 46) - species 3 - id 101370
Average adjusted fitness: 0.399
Mean genetic distance 2.478, standard deviation 0.633
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 439
           116 235.0
                            0.383
    3 124 134
                   265.3
                            0.416
                                     9
Total extinctions: 0
Generation time: 24.589 sec (17.851 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-439
 ***** Running generation 440 *****
Population's average fitness: 10.82808 stdev: 123.22598
Best fitness: 251.86295 - size: (23, 49) - species 3 - id 101256
Average adjusted fitness: 0.442
Mean genetic distance 2.477, standard deviation 0.666
Population of 250 members in 2 species:
       age size fitness adj fit stag
 1 440 117
                            0.413
                                    99
                   233.2
    3 125
           133
                   251.9
                            0.471
                                    10
Total extinctions: 0
Generation time: 17.352 sec (18.067 average)
 ***** Running generation 441 *****
Population's average fitness: 30.28466 stdev: 128.53115
Best fitness: 232.72401 - size: (19, 43) - species 1 - id 101531
Average adjusted fitness: 0.484
Mean genetic distance 2.435, standard deviation 0.764
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 441 122
                   232.7
                            0.495
                                  100
    3 126
           128
                   227.8
                            0.473
                                    11
Total extinctions: 0
Generation time: 17.247 sec (18.184 average)
***** Running generation 442 *****
Population's average fitness: 33.93993 stdev: 128.85231
Best fitness: 272.55269 - size: (20, 44) - species 1 - id 102085
Average adjusted fitness: 0.429
Mean genetic distance 2.513, standard deviation 0.661
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 442 123
                   272.6
                            0.421 101
    3 127
           127
                   257.0
                            0.436
                                    12
Total extinctions: 0
Generation time: 17.430 sec (18.395 average)
***** Running generation 443 *****
Population's average fitness: 33.13951 stdev: 129.64158
Best fitness: 258.78314 - size: (22, 44) - species 3 - id 102187
```

```
Average adjusted fitness: 0.439
Mean genetic distance 2.536, standard deviation 0.614
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                   239.8
    1 443
            127
                            0.458
                                   102
    3 128 123 258.8 0.419 13
Total extinctions: 0
Generation time: 17.603 sec (18.549 average)
***** Running generation 444 *****
Population's average fitness: 36.68471 stdev: 130.16856
Best fitness: 254.96126 - size: (22, 43) - species 3 - id 102534
Average adjusted fitness: 0.454
Mean genetic distance 2.525, standard deviation 0.596
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 444 124 254.6 0.438 103
    3 129
           126 255.0
                            0.469
                                    14
Total extinctions: 0
Generation time: 17.219 sec (18.616 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-444
***** Running generation 445 *****
Population's average fitness: 14.51820 stdev: 126.54088
Best fitness: 253.65652 - size: (24, 48) - species 3 - id 102801
Average adjusted fitness: 0.469
Mean genetic distance 2.512, standard deviation 0.651
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    1 445
            122
                   247.0
                            0.448
                                   104
    3 130 128 253.7
                            0.489 15
Total extinctions: 0
Generation time: 16.391 sec (18.598 average)
***** Running generation 446 *****
Population's average fitness: 29.69442 stdev: 129.77479
Best fitness: 249.01538 - size: (22, 50) - species 3 - id 103040
Average adjusted fitness: 0.437
Mean genetic distance 2.513, standard deviation 0.666
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
                   241.9
    1 446
            120
                            0.412
                                   105
           130 249.0
                            0.462 16
    3 131
Total extinctions: 0
Generation time: 17.178 sec (18.689 average)
***** Running generation 447 *****
Population's average fitness: 42.33037 stdev: 124.72719
Best fitness: 247.00719 - size: (16, 41) - species 1 - id 103193
Average adjusted fitness: 0.490
Mean genetic distance 2.588, standard deviation 0.674
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    1 447
           119 247.0 0.463 106
    3 132 131 246.6 0.517 17
Total extinctions: 0
Generation time: 18.908 sec (18.596 average)
***** Running generation 448 *****
Population's average fitness: 34.26704 stdev: 127.10339
Best fitness: 239.78284 - size: (16, 42) - species 1 - id 103557
Average adjusted fitness: 0.487
Mean genetic distance 2.655, standard deviation 0.643
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    1 448
           122 239.8 0.485
                                  107
    3 133 128 228.7 0.489 18
Total extinctions: 0
Generation time: 17.548 sec (18.147 average)
 ***** Running generation 449 *****
Population's average fitness: 24.95008 stdev: 128.60518
Best fitness: 251.49353 - size: (23, 53) - species 3 - id 103396
Average adjusted fitness: 0.478
Mean genetic distance 2.628, standard deviation 0.695
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    1 449
           121
                  238.8
                           0.466
                                  108
    3 134
                   251.5
           129
                           0.489
Total extinctions: 0
Generation time: 17.276 sec (17.415 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-449
***** Running generation 450 *****
Population's average fitness: 20.06937 stdev: 122.29575
Best fitness: 248.95356 - size: (17, 40) - species 1 - id 103740
Average adjusted fitness: 0.406
Mean genetic distance 2.718, standard deviation 0.562
Population of 250 members in 2 species:
       age size fitness adj fit stag
      === ==== ===== ====
    1 450 119 249.0 0.378 109
    3 135
           131
                 243.1 0.434
                                   20
Total extinctions: 0
Generation time: 16.975 sec (17.378 average)
***** Running generation 451 *****
Population's average fitness: 22.55830 stdev: 123.14176
Best fitness: 263.44044 - size: (16, 42) - species 1 - id 103469
Average adjusted fitness: 0.403
Mean genetic distance 2.741, standard deviation 0.552
Population of 250 members in 3 species:
       age size fitness adj fit stag
```

```
====
                 ======
    1 451
            122
                   263.4
                            0.401
                                   110
           119
                 237.9
    3
      136
                            0.404
                                    21
    4
         0 9
                                     a
Total extinctions: 0
Generation time: 17.199 sec (17.373 average)
 ***** Running generation 452 *****
Population's average fitness: 18.60301 stdev: 123.12390
Best fitness: 261.55728 - size: (16, 42) - species 1 - id 103469
Average adjusted fitness: 0.415
Mean genetic distance 2.693, standard deviation 0.523
Population of 251 members in 3 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    1 452
             98
                   261.6
                            0.369
                                  111
    3 137 108
                 241.0 0.419
                                  22
    4
        1 45
                   207.9
                           0.459
Total extinctions: 0
Generation time: 16.790 sec (17.309 average)
 ***** Running generation 453 *****
Population's average fitness: 26.44919 stdev: 126.29495
Best fitness: 238.57612 - size: (23, 53) - species 3 - id 103095
Average adjusted fitness: 0.435
Mean genetic distance 2.625, standard deviation 0.600
Population of 250 members in 3 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    1 453
             90
                   234.3
                            0.425
                                  112
    3 138
           96 238.6
                            0.431
                                    23
        2 64 214.4
                            0.448
Total extinctions: 0
Generation time: 17.099 sec (17.258 average)
 ***** Running generation 454 *****
Population's average fitness: 36.97278 stdev: 125.28592
Best fitness: 255.32114 - size: (23, 56) - species 3 - id 104840
Average adjusted fitness: 0.491
Mean genetic distance 2.622, standard deviation 0.664
Population of 250 members in 3 species:
  ID
      age size fitness adj fit stag
 ==== === ====== ===== ====
           88
                 239.0
    1 454
                          0.507
                                  113
    3 139
           77
                 255.3
                            0.486
                                  24
    4
         3
            85
                   227.3
                            0.482
Total extinctions: 0
Generation time: 18.063 sec (17.343 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-454
 ***** Running generation 455 *****
Population's average fitness: 37.47520 stdev: 126.96064
Best fitness: 240.74603 - size: (23, 53) - species 3 - id 103095
Species 1 with 88 members is stagnated: removing it
```

```
Average adjusted fitness: 0.461
Mean genetic distance 2.300, standard deviation 0.481
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                  240.7
    3 140
            130
                           0.504
    4
       4
           120 232.5 0.417
                                   a
Total extinctions: 0
Generation time: 17.513 sec (17.455 average)
***** Running generation 456 *****
Population's average fitness: 41.93149 stdev: 125.00391
Best fitness: 259.42659 - size: (22, 49) - species 3 - id 105318
Average adjusted fitness: 0.450
Mean genetic distance 2.205, standard deviation 0.518
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    3 141 132 259.4 0.480 26
    4
       5
           118
                 242.1 0.421
Total extinctions: 0
Generation time: 18.431 sec (17.580 average)
***** Running generation 457 *****
Population's average fitness: 35.48200 stdev: 123.08381
Best fitness: 245.64486 - size: (23, 50) - species 3 - id 105573
Average adjusted fitness: 0.456
Mean genetic distance 2.224, standard deviation 0.502
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    3 142 131 245.6 0.475 27
       6 119 238.5 0.437
    4
                                    1
Total extinctions: 0
Generation time: 19.109 sec (17.600 average)
***** Running generation 458 *****
Population's average fitness: 22.74143 stdev: 124.77294
Best fitness: 247.63351 - size: (23, 51) - species 4 - id 105445
Average adjusted fitness: 0.416
Mean genetic distance 2.260, standard deviation 0.456
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    3 143 132 237.1 0.441 28
    4
       7 118 247.6
                           0.390
Total extinctions: 0
Generation time: 17.233 sec (17.569 average)
***** Running generation 459 *****
Population's average fitness: 37.87510 stdev: 127.96908
Best fitness: 247.36523 - size: (23, 46) - species 3 - id 105900
Average adjusted fitness: 0.443
Mean genetic distance 2.310, standard deviation 0.457
Population of 250 members in 2 species:
       age size fitness adj fit stag
```

====

```
247.4 0.495
    3 144
           136
                   241.0
         8
            114
                            0.391
Total extinctions: 0
Generation time: 17.043 sec (17.546 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-459
***** Running generation 460 *****
Population's average fitness: 28.58716 stdev: 122.63551
Best fitness: 256.01540 - size: (23, 54) - species 3 - id 106266
Average adjusted fitness: 0.410
Mean genetic distance 2.294, standard deviation 0.490
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    3 145
           133 256.0
                         0.427
                                  30
        9
           117 226.2 0.393
Total extinctions: 0
Generation time: 18.001 sec (17.648 average)
 ***** Running generation 461 *****
Population's average fitness: 29.63923 stdev: 120.98244
Best fitness: 253.95751 - size: (23, 50) - species 3 - id 106493
Average adjusted fitness: 0.415
Mean genetic distance 2.359, standard deviation 0.460
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    3 146
            134
                  254.0
                           0.443
                   248.2
            116
                           0.386
       10
Total extinctions: 0
Generation time: 18.514 sec (17.780 average)
 ***** Running generation 462 *****
Population's average fitness: 13.88682 stdev: 124.43503
Best fitness: 256.25978 - size: (21, 43) - species 4 - id 106547
Average adjusted fitness: 0.379
Mean genetic distance 2.291, standard deviation 0.436
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
           128
    3 147
                   246.9
                           0.372
        11
            122
                   256.3
                            0.387
Total extinctions: 0
Generation time: 16.585 sec (17.759 average)
 ***** Running generation 463 *****
Population's average fitness: 31.43078 stdev: 122.15000
Best fitness: 238.22156 - size: (26, 59) - species 3 - id 106648
Average adjusted fitness: 0.451
Mean genetic distance 2.206, standard deviation 0.485
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    3 148
           124 238.2
                           0.435
                                    33
```

```
12
            126
                   233.5
                           0.468
Total extinctions: 0
Generation time: 17.606 sec (17.810 average)
***** Running generation 464 *****
Population's average fitness: 24.79200 stdev: 120.86706
Best fitness: 239.56259 - size: (22, 52) - species 3 - id 106823
Average adjusted fitness: 0.432
Mean genetic distance 2.194, standard deviation 0.503
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== ===
           3 149
           123
                   239.6
                           0.429
       13 127 235.7
                           0.436
Total extinctions: 0
Generation time: 17.850 sec (17.789 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-464
***** Running generation 465 *****
Population's average fitness: 30.57388 stdev: 124.84087
Best fitness: 255.11623 - size: (25, 61) - species 3 - id 107334
Average adjusted fitness: 0.434
Mean genetic distance 2.210, standard deviation 0.441
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    3 150 122 255.1 0.415
                                   35
       14 128 224.1 0.453
                                    3
Total extinctions: 0
Generation time: 17.211 sec (17.758 average)
***** Running generation 466 *****
Population's average fitness: 30.08838 stdev: 125.67852
Best fitness: 242.51140 - size: (23, 54) - species 3 - id 107336
Average adjusted fitness: 0.442
Mean genetic distance 2.290, standard deviation 0.407
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
      === ==== ===== ====
    3 151 121 242.5 0.412
                                    36
       15
           129
                   242.0
                           0.473
Total extinctions: 0
Generation time: 17.504 sec (17.666 average)
***** Running generation 467 *****
Population's average fitness: 33.88502 stdev: 123.17212
Best fitness: 234.76803 - size: (21, 43) - species 4 - id 107678
Average adjusted fitness: 0.521
Mean genetic distance 2.334, standard deviation 0.408
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    3 152
            120
                   220.8
                           0.494
           130
                 234.8
                           0.548
       16
                                    5
Total extinctions: 0
```

```
Generation time: 19.362 sec (17.691 average)
 ***** Running generation 468 *****
Population's average fitness: 38.46042 stdev: 122.60072
Best fitness: 265.53927 - size: (25, 61) - species 3 - id 107334
Average adjusted fitness: 0.431
Mean genetic distance 2.421, standard deviation 0.397
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    3 153 118 265.5 0.400 38
       17 132 248.7 0.461
    4
Total extinctions: 0
Generation time: 19.522 sec (17.920 average)
***** Running generation 469 *****
Population's average fitness: 39.09488 stdev: 127.64949
Best fitness: 239.15990 - size: (25, 60) - species 3 - id 108288
Average adjusted fitness: 0.486
Mean genetic distance 2.442, standard deviation 0.424
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
 ==== === ====== ===== ====
                                  39
    3 154 115 239.2 0.414
       18 135 228.4 0.559
Total extinctions: 0
Generation time: 18.220 sec (18.038 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-469
***** Running generation 470 *****
Population's average fitness: 20.91495 stdev: 128.05322
Best fitness: 244.51399 - size: (22, 48) - species 4 - id 108213
Average adjusted fitness: 0.429
Mean genetic distance 2.448, standard deviation 0.445
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
    3 155 119 235.5 0.437
                                    40
                   244.5
                            0.422
       19
            131
Total extinctions: 0
Generation time: 17.000 sec (17.937 average)
 ***** Running generation 471 *****
Population's average fitness: 43.81657 stdev: 130.25198
Best fitness: 264.64899 - size: (21, 46) - species 3 - id 108614
Average adjusted fitness: 0.493
Mean genetic distance 2.407, standard deviation 0.492
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== ==== ====== ===== ====
    3 156 107 264.6 0.493
            143
    4
                   251.5
                            0.494
       20
Total extinctions: 0
Generation time: 18.183 sec (17.904 average)
```

```
***** Running generation 472 *****
Population's average fitness: 41.96225 stdev: 127.43275
Best fitness: 261.30891 - size: (22, 46) - species 3 - id 108633
Average adjusted fitness: 0.510
Mean genetic distance 2.376, standard deviation 0.482
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    3 157
            118
                   261.3
                            0.528
                                    42
       21 132
                   252.5
                            0.492
                                    10
    4
Total extinctions: 0
Generation time: 18.561 sec (18.102 average)
 ***** Running generation 473 *****
Population's average fitness: 27.59681 stdev: 126.76601
Best fitness: 266.75058 - size: (22, 51) - species 4 - id 108877
Average adjusted fitness: 0.486
Mean genetic distance 2.361, standard deviation 0.498
Population of 250 members in 2 species:
       age size fitness adj fit stag
 3 158
           120
                   251.7
                            0.476
                                    43
    4
        22
            130
                   266.8
                            0.496
Total extinctions: 0
Generation time: 17.089 sec (18.050 average)
 ***** Running generation 474 *****
Population's average fitness: 38.89380 stdev: 132.30881
Best fitness: 280.48480 - size: (26, 65) - species 3 - id 109050
Average adjusted fitness: 0.431
Mean genetic distance 2.398, standard deviation 0.486
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    3 159 119
                   280.5
                            0.414
                                     a
    4
       23
            131
                   231.6
                            0.449
                                     1
Total extinctions: 0
Generation time: 18.337 sec (18.099 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-474
 ***** Running generation 475 *****
Population's average fitness: 25.64552 stdev: 129.09365
Best fitness: 251.23902 - size: (25, 63) - species 3 - id 109322
Average adjusted fitness: 0.411
Mean genetic distance 2.447, standard deviation 0.443
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
                   251.2
                            0.376
    3 160
            117
        24
            133
                   239.6
                            0.446
Total extinctions: 0
Generation time: 17.501 sec (18.128 average)
 ***** Running generation 476 *****
```

```
Population's average fitness: 19.24840 stdev: 132.85210
Best fitness: 253.85102 - size: (25, 63) - species 3 - id 109322
Average adjusted fitness: 0.457
Mean genetic distance 2.475, standard deviation 0.472
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    3 161 126 253.9 0.443
    4 25 124 230.9 0.472
                                     3
Total extinctions: 0
Generation time: 16.344 sec (18.012 average)
***** Running generation 477 *****
Population's average fitness: 25.64686 stdev: 128.93858
Best fitness: 259.35267 - size: (24, 61) - species 3 - id 110127
Average adjusted fitness: 0.482
Mean genetic distance 2.590, standard deviation 0.391
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ======
    3 162 110 259.4 0.480
    4 26 140 253.7 0.484
Total extinctions: 0
Generation time: 16.757 sec (17.751 average)
***** Running generation 478 *****
Population's average fitness: 25.79473 stdev: 126.47904
Best fitness: 278.80103 - size: (21, 46) - species 3 - id 109946
Average adjusted fitness: 0.386
Mean genetic distance 2.561, standard deviation 0.404
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    3 163
           122
                   278.8
                            0.400
      27 128 240.6
                            0.371
Total extinctions: 0
Generation time: 17.420 sec (17.541 average)
***** Running generation 479 *****
Population's average fitness: 15.99638 stdev: 125.55312
Best fitness: 265.12097 - size: (24, 52) - species 3 - id 110556
Average adjusted fitness: 0.437
Mean genetic distance 2.484, standard deviation 0.442
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
                   265.1
    3 164
           124
                            0.440
           126 256.2
                            0.433
    4
       28
Total extinctions: 0
Generation time: 16.610 sec (17.380 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-479
***** Running generation 480 *****
Population's average fitness: 28.69407 stdev: 121.77935
Best fitness: 259.08001 - size: (25, 64) - species 3 - id 110840
```

```
Average adjusted fitness: 0.444
Mean genetic distance 2.443, standard deviation 0.492
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                 259.1
                           0.429
    3 165
           122
    4
      29
           128 239.3 0.459
                                    7
Total extinctions: 0
Generation time: 17.813 sec (17.461 average)
***** Running generation 481 *****
Population's average fitness: 17.01624 stdev: 130.44511
Best fitness: 254.07476 - size: (26, 55) - species 3 - id 111058
Average adjusted fitness: 0.426
Mean genetic distance 2.464, standard deviation 0.449
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    3 166 123 254.1 0.416
           127 240.7 0.436
    4
       30
Total extinctions: 0
Generation time: 16.538 sec (17.297 average)
***** Running generation 482 *****
Population's average fitness: 31.48469 stdev: 123.18906
Best fitness: 257.08216 - size: (25, 56) - species 3 - id 111258
Average adjusted fitness: 0.448
Mean genetic distance 2.476, standard deviation 0.414
Population of 250 members in 3 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    3 167 77 257.1 0.421
       31
            146 241.1 0.475
        0
           27
Total extinctions: 0
Generation time: 18.284 sec (17.269 average)
***** Running generation 483 *****
Population's average fitness: 28.82782 stdev: 128.21398
Best fitness: 264.07959 - size: (26, 62) - species 3 - id 111262
Average adjusted fitness: 0.457
Mean genetic distance 2.514, standard deviation 0.476
Population of 249 members in 3 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    3 168 17 264.1 0.482
                         0.441
       32
            110
                   241.0
                                    10
           122 206.5
                           0.448
    5
        1
Total extinctions: 0
Generation time: 18.120 sec (17.372 average)
***** Running generation 484 *****
Population's average fitness: 34.42837 stdev: 122.67942
Best fitness: 245.79035 - size: (23, 53) - species 5 - id 111510
Average adjusted fitness: 0.456
Mean genetic distance 2.405, standard deviation 0.505
```

```
Population of 250 members in 3 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    3 169
           35 235.5 0.411 10
      33 100 237.4
                          0.490 11
       2 115
                245.8
    5
                          0.467
Total extinctions: 0
Generation time: 18.427 sec (17.381 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-484
***** Running generation 485 *****
Population's average fitness: 36.85025 stdev: 126.75082
Best fitness: 262.10903 - size: (26, 55) - species 5 - id 111058
Average adjusted fitness: 0.457
Mean genetic distance 2.352, standard deviation 0.543
Population of 249 members in 3 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    3 170
           108
                  243.5
                          0.514
      34
           94 242.2 0.486
                                  12
       3 47 262.1 0.370
                                  0
Total extinctions: 0
Generation time: 18.654 sec (17.497 average)
***** Running generation 486 *****
Population's average fitness: 32.75950 stdev: 129.34915
Best fitness: 269.52402 - size: (24, 51) - species 4 - id 111430
Average adjusted fitness: 0.436
Mean genetic distance 2.291, standard deviation 0.600
Population of 249 members in 3 species:
       age size fitness adj fit stag
 3 171
            93 246.8
                          0.400
                                   12
      35 93 269.5 0.482
                                  a
    5
       4
           63 266.7
                          0.425
Total extinctions: 0
Generation time: 18.010 sec (17.663 average)
***** Running generation 487 *****
Population's average fitness: 32.28236 stdev: 129.38879
Best fitness: 266.23294 - size: (24, 56) - species 5 - id 112014
Average adjusted fitness: 0.431
Mean genetic distance 2.319, standard deviation 0.615
Population of 250 members in 3 species:
       age size fitness adj fit stag
  ID
  ==== === ===== ===== ====
                          0.457
    3 172
           91 251.4
                                   13
      36
           88 239.5
                          0.426
                                  1
    5
            71
                  266.2
                          0.408
                                   1
        5
Total extinctions: 0
Generation time: 17.708 sec (17.758 average)
 ***** Running generation 488 *****
Population's average fitness: 43.02310 stdev: 124.06313
```

Best fitness: 259.99314 - size: (24, 60) - species 3 - id 111602

Average adjusted fitness: 0.475

Mean genetic distance 2.319, standard deviation 0.599

Population of 250 members in 3 species:

| ID | age | size | fitness | adj fit | stag |
|------|-----|------|---------|---------|------|
| ==== | === | ==== | ====== | ====== | ==== |
| 3 | 173 | 90 | 260.0 | 0.525 | 14 |
| 4 | 37 | 82 | 245.8 | 0.436 | 2 |
| 5 | 6 | 78 | 255.6 | 0.466 | 2 |

Total extinctions: 0

Generation time: 19.168 sec (17.933 average)

***** Running generation 489 *****

Population's average fitness: 33.62092 stdev: 133.47543

Best fitness: 268.23379 - size: (23, 55) - species 5 - id 112201

Average adjusted fitness: 0.467

Mean genetic distance 2.377, standard deviation 0.532

Population of 250 members in 3 species:

| ID | age | size | fitness | adj fit | stag |
|------|-----|------|---------|---------|------|
| ==== | === | ==== | ====== | ====== | ==== |
| 3 | 174 | 91 | 245.1 | 0.460 | 15 |
| 4 | 38 | 84 | 248.7 | 0.487 | 3 |
| 5 | 7 | 75 | 268.2 | 0.454 | 0 |

Total extinctions: 0

Generation time: 17.017 sec (17.974 average)

Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMultiwalker_Run1\neat-checkpoint-489

***** Running generation 490 *****

Population's average fitness: 49.24634 stdev: 130.85947

Best fitness: 275.92310 - size: (23, 45) - species 4 - id 112740

Average adjusted fitness: 0.459

Mean genetic distance 2.402, standard deviation 0.540

Population of 250 members in 3 species:

| ID | age | size | fitness | adj fit | stag |
|------|-----|------|---------|---------|------|
| ==== | === | ==== | ====== | ====== | ==== |
| 3 | 175 | 86 | 251.3 | 0.411 | 16 |
| 4 | 39 | 87 | 275.9 | 0.495 | 0 |
| 5 | 8 | 77 | 248.0 | 0.472 | 1 |

Total extinctions: 0

Generation time: 18.583 sec (18.051 average)

***** Running generation 491 *****

Population's average fitness: 33.40886 stdev: 129.24911

Best fitness: 260.73017 - size: (27, 64) - species 3 - id 113219

Average adjusted fitness: 0.484

Mean genetic distance 2.418, standard deviation 0.583

Population of 250 members in 3 species:

| ID | age | size | fitness | adj fit | stag |
|------|-----|------|---------|---------|------|
| ==== | === | ==== | ====== | ====== | ==== |
| 3 | 176 | 89 | 260.7 | 0.476 | 17 |
| 4 | 40 | 88 | 246.5 | 0.516 | 1 |
| 5 | 9 | 73 | 258.6 | 0.462 | 2 |

Total extinctions: 0

Generation time: 17.627 sec (18.160 average)

***** Running generation 492 *****

```
Population's average fitness: 43.44179 stdev: 130.36479
Best fitness: 270.39170 - size: (26, 58) - species 3 - id 113548
Average adjusted fitness: 0.466
Mean genetic distance 2.389, standard deviation 0.562
Population of 250 members in 3 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    3 177
           80 270.4 0.449
    4
       41
           86 240.3 0.473
                                     2
    5
        10
             84
                  247.3
                           0.476
                                     3
Total extinctions: 0
Generation time: 18.427 sec (18.174 average)
 ***** Running generation 493 *****
Population's average fitness: 29.82493 stdev: 130.90218
Best fitness: 267.15868 - size: (27, 62) - species 3 - id 113505
Average adjusted fitness: 0.446
Mean genetic distance 2.361, standard deviation 0.534
Population of 250 members in 3 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    3 178 95 267.2 0.460
           89 228.5 0.490
                                    3
    4
       42
        11
             66
                   240.1
                           0.389
Total extinctions: 0
Generation time: 17.358 sec (18.098 average)
 ***** Running generation 494 *****
Population's average fitness: 45.12989 stdev: 126.19922
Best fitness: 270.01892 - size: (24, 57) - species 5 - id 113160
Species 3 with 95 members is stagnated: removing it
Average adjusted fitness: 0.453
Mean genetic distance 2.399, standard deviation 0.633
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
  ==== === ===== ===== ====
    4
       43 136 262.1 0.476
                                     4
    5
       12 114
                   270.0
                           0.429
Total extinctions: 0
Generation time: 18.591 sec (18.114 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-494
 ***** Running generation 495 *****
Population's average fitness: 18.47262 stdev: 124.49294
Best fitness: 255.95440 - size: (22, 43) - species 4 - id 113352
Average adjusted fitness: 0.385
Mean genetic distance 2.430, standard deviation 0.656
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
       44 126 256.0 0.359
           124
    5
        13
                 252.3
                           0.410
Total extinctions: 0
Generation time: 16.621 sec (17.911 average)
```

```
***** Running generation 496 *****
Population's average fitness: 35.79978 stdev: 124.31185
Best fitness: 244.11576 - size: (23, 50) - species 5 - id 114193
Average adjusted fitness: 0.441
Mean genetic distance 2.465, standard deviation 0.648
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4
        45
            127
                   234.6
                            0.446
    5
        14 123
                    244.1
                            0.436
                                      2
Total extinctions: 0
Generation time: 18.728 sec (17.983 average)
 ***** Running generation 497 *****
Population's average fitness: 38.19518 stdev: 120.16076
Best fitness: 254.00015 - size: (23, 44) - species 5 - id 114280
Average adjusted fitness: 0.485
Mean genetic distance 2.399, standard deviation 0.675
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    4
       46
            128
                            0.493
                                      7
                    246.1
        15
            122
                    254.0
                            0.477
Total extinctions: 0
Generation time: 18.620 sec (18.074 average)
 ***** Running generation 498 *****
Population's average fitness: 32.81720 stdev: 127.97650
Best fitness: 254.99203 - size: (25, 54) - species 5 - id 114850
Average adjusted fitness: 0.444
Mean genetic distance 2.338, standard deviation 0.727
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4
       47
                    252.7
                            0.473
            131
                                      8
    5
        16
            119
                    255.0
                            0.414
                                      4
Total extinctions: 0
Generation time: 17.245 sec (17.882 average)
 ***** Running generation 499 *****
Population's average fitness: 37.24244 stdev: 124.84738
Best fitness: 241.34473 - size: (24, 49) - species 5 - id 115129
Average adjusted fitness: 0.448
Mean genetic distance 2.378, standard deviation 0.710
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
       48 126
                    236.5
                            0.430
                                      9
    5
        17
            124
                    241.3
                            0.465
                                      5
Total extinctions: 0
Generation time: 18.061 sec (17.986 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-499
```

***** Running generation 500 *****

```
Population's average fitness: 39.70497 stdev: 125.84115
Best fitness: 249.92028 - size: (24, 51) - species 4 - id 115157
Average adjusted fitness: 0.451
Mean genetic distance 2.343, standard deviation 0.755
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
       49
           128 249.9 0.469
    5
        18 122
                   244.7
                            0.433
                                     6
Total extinctions: 0
Generation time: 18.237 sec (17.952 average)
***** Running generation 501 *****
Population's average fitness: 34.68439 stdev: 126.62668
Best fitness: 255.13912 - size: (23, 52) - species 5 - id 115484
Average adjusted fitness: 0.434
Mean genetic distance 2.435, standard deviation 0.681
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4
       50 129 235.9 0.453
                                    11
    5 19 121 255.1 0.416
                                    7
Total extinctions: 0
Generation time: 17.862 sec (17.975 average)
***** Running generation 502 *****
Population's average fitness: 29.96424 stdev: 126.33694
Best fitness: 259.96249 - size: (22, 45) - species 5 - id 115807
Average adjusted fitness: 0.408
Mean genetic distance 2.415, standard deviation 0.714
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
           126
    4
       51
                   237.9
                            0.400
                                    12
    5
       20 124 260.0
                            0.416
                                    8
Total extinctions: 0
Generation time: 17.606 sec (17.893 average)
***** Running generation 503 *****
Population's average fitness: 22.45385 stdev: 124.06235
Best fitness: 252.72121 - size: (24, 44) - species 4 - id 115871
Average adjusted fitness: 0.420
Mean genetic distance 2.483, standard deviation 0.663
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
                   252.7
       52
            124
                            0.413
       21
            126
                 248.1
                            0.427
    5
Total extinctions: 0
Generation time: 16.670 sec (17.824 average)
***** Running generation 504 *****
Population's average fitness: 29.48406 stdev: 125.35738
Best fitness: 257.08727 - size: (24, 45) - species 4 - id 116190
Average adjusted fitness: 0.432
Mean genetic distance 2.492, standard deviation 0.695
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
       53
           126 257.1 0.440 14
    5
       22 124
                 248.7
                           0.423 10
Total extinctions: 0
Generation time: 16.986 sec (17.664 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-504
***** Running generation 505 *****
Population's average fitness: 28.33804 stdev: 125.58421
Best fitness: 260.71824 - size: (23, 42) - species 5 - id 116355
Average adjusted fitness: 0.452
Mean genetic distance 2.521, standard deviation 0.673
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4 54 127
                 253.8 0.459 15
    5
        23
           123
                   260.7
                           0.446
                                    11
Total extinctions: 0
Generation time: 16.904 sec (17.692 average)
***** Running generation 506 *****
Population's average fitness: 33.54592 stdev: 123.46009
Best fitness: 273.56681 - size: (22, 45) - species 5 - id 116118
Average adjusted fitness: 0.421
Mean genetic distance 2.504, standard deviation 0.725
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
       55
           128 255.9 0.437
    5
       24
           122 273.6 0.405
Total extinctions: 0
Generation time: 17.791 sec (17.598 average)
***** Running generation 507 *****
Population's average fitness: 29.38038 stdev: 122.88816
Best fitness: 248.07198 - size: (26, 52) - species 5 - id 116910
Average adjusted fitness: 0.451
Mean genetic distance 2.565, standard deviation 0.704
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
      56 124 234.5 0.435 17
    5
       25
           126
                 248.1 0.468
                                    1
Total extinctions: 0
Generation time: 18.540 sec (17.590 average)
***** Running generation 508 *****
Population's average fitness: 35.32780 stdev: 124.49914
Best fitness: 245.47908 - size: (26, 48) - species 5 - id 117120
Average adjusted fitness: 0.462
Mean genetic distance 2.540, standard deviation 0.698
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
```

```
====
                 57
            127
                   243.2
                            0.481
                   245.5
        26
            123
                            0.444
Total extinctions: 0
Generation time: 17.732 sec (17.639 average)
 ***** Running generation 509 *****
Population's average fitness: 31.53226 stdev: 123.56301
Best fitness: 254.15094 - size: (23, 40) - species 5 - id 116879
Average adjusted fitness: 0.422
Mean genetic distance 2.447, standard deviation 0.753
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 58
           125 247.0
                            0.415
                                    19
                   254.2
        27
            125
                            0.429
Total extinctions: 0
Generation time: 16.962 sec (17.529 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-509
***** Running generation 510 *****
Population's average fitness: 35.76742 stdev: 125.39695
Best fitness: 263.32984 - size: (22, 43) - species 5 - id 117377
Average adjusted fitness: 0.448
Mean genetic distance 2.428, standard deviation 0.763
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
       59
            128
                   245.4
                            0.468
                   263.3
        28
            122
                            0.427
Total extinctions: 0
Generation time: 16.981 sec (17.404 average)
 ***** Running generation 511 *****
Population's average fitness: 22.28190 stdev: 127.92182
Best fitness: 245.49919 - size: (24, 43) - species 5 - id 117677
Average adjusted fitness: 0.445
Mean genetic distance 2.406, standard deviation 0.778
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
           136
                   241.5
                            0.513
    4
       60
                                    21
    5
        29
            114
                   245.5
                            0.376
Total extinctions: 0
Generation time: 15.152 sec (17.133 average)
 ***** Running generation 512 *****
Population's average fitness: 30.51510 stdev: 127.86221
Best fitness: 267.39366 - size: (25, 48) - species 5 - id 117882
Average adjusted fitness: 0.420
Mean genetic distance 2.446, standard deviation 0.802
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
       61
            137
                 229.5
                            0.459
                                    22
```

```
30
           113
                   267.4
                           0.380
Total extinctions: 0
Generation time: 17.050 sec (17.077 average)
***** Running generation 513 *****
Population's average fitness: 21.87857 stdev: 127.93452
Best fitness: 224.71727 - size: (26, 54) - species 4 - id 118257
Average adjusted fitness: 0.494
Mean genetic distance 2.464, standard deviation 0.727
Population of 250 members in 2 species:
       age size fitness adj fit stag
           224.7
       62
           138
                           0.545
                                    23
       31 112 218.0
                           0.443
Total extinctions: 0
Generation time: 16.165 sec (17.026 average)
***** Running generation 514 *****
Population's average fitness: 25.14266 stdev: 125.71013
Best fitness: 241.45757 - size: (20, 34) - species 5 - id 118114
Average adjusted fitness: 0.468
Mean genetic distance 2.468, standard deviation 0.736
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
           139
       63
                   237.1
                           0.525
                                    24
       32
           111
                 241.5
                           0.411
Total extinctions: 0
Generation time: 16.445 sec (16.972 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-514
***** Running generation 515 *****
Population's average fitness: 34.29341 stdev: 127.31618
Best fitness: 252.87312 - size: (21, 42) - species 5 - id 118776
Average adjusted fitness: 0.431
Mean genetic distance 2.403, standard deviation 0.662
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
  64 134 246.3
                           0.444
                                    25
                   252.9
    5
       33
           116
                           0.419
Total extinctions: 0
Generation time: 16.605 sec (16.942 average)
***** Running generation 516 *****
Population's average fitness: 36.43232 stdev: 123.83290
Best fitness: 240.58396 - size: (24, 45) - species 5 - id 118085
Average adjusted fitness: 0.470
Mean genetic distance 2.316, standard deviation 0.601
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
        65
            132
                   232.5
                           0.491
                                    26
        34
           118
                 240.6
                           0.450
    5
                                   10
Total extinctions: 0
```

```
Generation time: 20.926 sec (17.256 average)
 ***** Running generation 517 *****
Population's average fitness: 39.26339 stdev: 127.80248
Best fitness: 254.51417 - size: (24, 45) - species 5 - id 119197
Average adjusted fitness: 0.447
Mean genetic distance 2.314, standard deviation 0.643
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
       66 133 239.4 0.477
                                    27
       35 117 254.5
                            0.417
                                    11
Total extinctions: 0
Generation time: 17.353 sec (17.137 average)
***** Running generation 518 *****
Population's average fitness: 41.11420 stdev: 121.64703
Best fitness: 256.99775 - size: (21, 39) - species 5 - id 119051
Average adjusted fitness: 0.455
Mean genetic distance 2.305, standard deviation 0.683
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
 ==== === ===== ===== ====
           129 256.1 0.453
                                    28
       67
    5
       36 121 257.0
                            0.458
Total extinctions: 0
Generation time: 18.441 sec (17.208 average)
 ***** Running generation 519 *****
Population's average fitness: 21.45979 stdev: 132.84185
Best fitness: 254.95137 - size: (21, 45) - species 5 - id 119452
Average adjusted fitness: 0.402
Mean genetic distance 2.372, standard deviation 0.615
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
  ==== === ===== ===== ====
    4
           128 247.0
                            0.411
                                    29
        68
    5
        37 122
                   255.0
                            0.392
Total extinctions: 0
Generation time: 15.530 sec (17.065 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-519
 ***** Running generation 520 *****
Population's average fitness: 43.33944 stdev: 129.50146
Best fitness: 252.58304 - size: (26, 47) - species 4 - id 119569
Average adjusted fitness: 0.470
Mean genetic distance 2.344, standard deviation 0.570
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== ==== ====== ===== ====
       69 132 252.6 0.508 30
            118
    5
        38
                   247.9
                            0.432
                                    14
Total extinctions: 0
Generation time: 17.237 sec (17.090 average)
```

```
***** Running generation 521 *****
Population's average fitness: 23.72427 stdev: 122.80971
Best fitness: 258.22239 - size: (27, 52) - species 4 - id 120178
Average adjusted fitness: 0.484
Mean genetic distance 2.374, standard deviation 0.581
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== ====
  ==== ===
    4
        70
            131
                   258.2
                            0.504
    5
        39 119
                    239.6
                            0.465
                                     15
Total extinctions: 0
Generation time: 17.315 sec (17.307 average)
 ***** Running generation 522 *****
Population's average fitness: 25.35575 stdev: 127.13545
Best fitness: 259.87249 - size: (27, 53) - species 4 - id 120157
Average adjusted fitness: 0.459
Mean genetic distance 2.465, standard deviation 0.647
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    4
       71
                    259.9
                            0.483
           132
                                     32
        40
            118
                    254.9
                            0.435
                                     16
Total extinctions: 0
Generation time: 16.880 sec (17.290 average)
 ***** Running generation 523 *****
Population's average fitness: 4.31172 stdev: 120.38253
Best fitness: 263.63288 - size: (25, 47) - species 5 - id 120466
Average adjusted fitness: 0.431
Mean genetic distance 2.450, standard deviation 0.719
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4
       72 129
                    237.8
                            0.436
                                     33
    5
        41
             121
                    263.6
                            0.426
                                     17
Total extinctions: 0
Generation time: 16.376 sec (17.311 average)
 ***** Running generation 524 *****
Population's average fitness: 26.07557 stdev: 124.05162
Best fitness: 257.29272 - size: (25, 50) - species 5 - id 120863
Average adjusted fitness: 0.459
Mean genetic distance 2.462, standard deviation 0.732
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    4
       73
           126
                    254.8
                            0.455
                                     34
    5
       42
           124
                    257.3
                            0.463
                                     18
Total extinctions: 0
Generation time: 17.648 sec (17.431 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-524
```

***** Running generation 525 *****

```
Population's average fitness: 12.86935 stdev: 125.31423
Best fitness: 239.77030 - size: (25, 47) - species 5 - id 121046
Average adjusted fitness: 0.459
Mean genetic distance 2.440, standard deviation 0.770
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
       74 130 239.2 0.489
    5
       43 120
                   239.8
                            0.428
                                    19
Total extinctions: 0
Generation time: 16.430 sec (17.414 average)
***** Running generation 526 *****
Population's average fitness: 35.65784 stdev: 125.92474
Best fitness: 247.02739 - size: (24, 42) - species 5 - id 121054
Average adjusted fitness: 0.438
Mean genetic distance 2.466, standard deviation 0.725
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
           136 241.2 0.495
    4 75
                                    36
       44 114 247.0 0.382
                                    20
Total extinctions: 0
Generation time: 17.677 sec (17.089 average)
***** Running generation 527 *****
Population's average fitness: 33.67716 stdev: 127.43105
Best fitness: 275.69659 - size: (25, 50) - species 5 - id 120863
Average adjusted fitness: 0.428
Mean genetic distance 2.538, standard deviation 0.695
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
           139
    4
       76
                   231.1
                            0.486
                                    37
    5
       45 111 275.7
                            0.371
                                     a
Total extinctions: 0
Generation time: 17.606 sec (17.114 average)
***** Running generation 528 *****
Population's average fitness: 22.73000 stdev: 123.66565
Best fitness: 286.06253 - size: (24, 44) - species 5 - id 121806
Average adjusted fitness: 0.385
Mean genetic distance 2.513, standard deviation 0.653
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
       77
                   252.4
            134
                            0.397
            116 286.1
    5
        46
                            0.374
Total extinctions: 0
Generation time: 17.441 sec (17.014 average)
***** Running generation 529 *****
Population's average fitness: 36.31776 stdev: 123.61714
Best fitness: 268.78116 - size: (24, 44) - species 5 - id 121806
Average adjusted fitness: 0.516
Mean genetic distance 2.456, standard deviation 0.691
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    4 78
           135 251.5 0.563 39
    5
      47 115 268.8 0.468
                                   1
Total extinctions: 0
Generation time: 18.316 sec (17.293 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-529
***** Running generation 530 *****
Population's average fitness: 35.62132 stdev: 127.98117
Best fitness: 276.77336 - size: (25, 49) - species 5 - id 121485
Average adjusted fitness: 0.401
Mean genetic distance 2.418, standard deviation 0.705
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4 79 138 240.3 0.451
                                    40
    5
       48
           112
                 276.8
                           0.351
Total extinctions: 0
Generation time: 17.875 sec (17.356 average)
***** Running generation 531 *****
Population's average fitness: 34.12665 stdev: 127.13333
Best fitness: 253.33611 - size: (25, 50) - species 5 - id 121963
Average adjusted fitness: 0.420
Mean genetic distance 2.415, standard deviation 0.694
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
       80
           143 230.4 0.496
    5
       49
           107 253.3 0.345
                                    3
Total extinctions: 0
Generation time: 17.481 sec (17.373 average)
***** Running generation 532 *****
Population's average fitness: 25.26498 stdev: 125.25203
Best fitness: 240.07703 - size: (24, 47) - species 5 - id 122681
Average adjusted fitness: 0.429
Mean genetic distance 2.413, standard deviation 0.727
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    4 81 142 232.1 0.484 42
    5
       50
           108 240.1 0.374
Total extinctions: 0
Generation time: 17.462 sec (17.431 average)
***** Running generation 533 *****
Population's average fitness: 39.03531 stdev: 124.14513
Best fitness: 268.27093 - size: (25, 48) - species 5 - id 122898
Average adjusted fitness: 0.421
Mean genetic distance 2.444, standard deviation 0.703
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
```

```
====
                 ======
        82
             134
                   247.6
                            0.425
                                     43
                   268.3
        51
            116
                            0.417
                                      5
Total extinctions: 0
Generation time: 17.932 sec (17.587 average)
 ***** Running generation 534 *****
Population's average fitness: 28.71605 stdev: 127.32419
Best fitness: 257.96116 - size: (30, 60) - species 4 - id 122160
Average adjusted fitness: 0.406
Mean genetic distance 2.497, standard deviation 0.652
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
           133 258.0
    4 83
                            0.429
                                    44
                   248.4
       52
            117
                            0.383
Total extinctions: 0
Generation time: 17.546 sec (17.577 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-534
***** Running generation 535 *****
Population's average fitness: 33.87858 stdev: 125.10493
Best fitness: 250.86172 - size: (30, 61) - species 4 - id 122856
Average adjusted fitness: 0.471
Mean genetic distance 2.437, standard deviation 0.654
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ===== ===== ====
        84
            134
                   250.9
                            0.507
                                     45
                   238.6
       53
            116
                            0.436
                                     7
Total extinctions: 0
Generation time: 17.952 sec (17.729 average)
 ***** Running generation 536 *****
Population's average fitness: 37.41761 stdev: 127.95920
Best fitness: 249.21825 - size: (25, 39) - species 5 - id 123528
Average adjusted fitness: 0.497
Mean genetic distance 2.416, standard deviation 0.624
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
       85
    4
            132
                   238.6
                            0.520
                                    46
    5
        54
            118
                   249.2
                            0.474
Total extinctions: 0
Generation time: 18.054 sec (17.766 average)
 ***** Running generation 537 *****
Population's average fitness: 21.23205 stdev: 125.49212
Best fitness: 247.21148 - size: (24, 46) - species 5 - id 123787
Average adjusted fitness: 0.428
Mean genetic distance 2.467, standard deviation 0.653
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4
       86
            134
                 239.3
                            0.463
                                     47
```

```
55
            116
                   247.2
                            0.392
Total extinctions: 0
Generation time: 17.280 sec (17.734 average)
***** Running generation 538 *****
Population's average fitness: 30.08547 stdev: 130.49750
Best fitness: 254.89376 - size: (29, 62) - species 4 - id 123910
Average adjusted fitness: 0.415
Mean genetic distance 2.523, standard deviation 0.729
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== =====
                   254.9
        87
            137
                            0.462
                                    48
    5
       56 113 251.0
                            0.368
                                    10
Total extinctions: 0
Generation time: 16.815 sec (17.671 average)
***** Running generation 539 *****
Population's average fitness: 15.17742 stdev: 128.13926
Best fitness: 246.65348 - size: (29, 61) - species 4 - id 124273
Average adjusted fitness: 0.423
Mean genetic distance 2.458, standard deviation 0.716
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
       88
            136
                   246.7
                            0.460
                                    49
        57
            114
                   236.7
                            0.387
Total extinctions: 0
Generation time: 15.695 sec (17.409 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-539
***** Running generation 540 *****
Population's average fitness: 37.16392 stdev: 129.72463
Best fitness: 247.25900 - size: (28, 60) - species 4 - id 124522
Average adjusted fitness: 0.468
Mean genetic distance 2.438, standard deviation 0.674
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4
       89 134 247.3
                            0.495
                                     50
    5
       58
           116
                 233.4
                            0.442
                                    12
Total extinctions: 0
Generation time: 17.688 sec (17.390 average)
***** Running generation 541 *****
Population's average fitness: 31.76999 stdev: 130.35123
Best fitness: 256.24532 - size: (26, 51) - species 5 - id 124209
Average adjusted fitness: 0.427
Mean genetic distance 2.386, standard deviation 0.706
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
        90
            137
                   244.9
                            0.478
                                    51
        59
            113
                   256.2
                                    13
    5
                            0.377
Total extinctions: 0
```

```
Generation time: 16.918 sec (17.334 average)
 ***** Running generation 542 *****
Population's average fitness: 26.74240 stdev: 126.09485
Best fitness: 251.25561 - size: (29, 61) - species 4 - id 124854
Average adjusted fitness: 0.443
Mean genetic distance 2.433, standard deviation 0.692
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
       91 134 251.3 0.465
                                    52
       60 116 227.7
                           0.420
Total extinctions: 0
Generation time: 17.217 sec (17.310 average)
***** Running generation 543 *****
Population's average fitness: 32.49609 stdev: 124.43942
Best fitness: 248.94139 - size: (29, 61) - species 4 - id 124854
Average adjusted fitness: 0.443
Mean genetic distance 2.418, standard deviation 0.716
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
 ==== === ===== ===== ====
       92 132 248.9 0.460
                                    53
    5
       61 118 237.1 0.427
Total extinctions: 0
Generation time: 17.619 sec (17.278 average)
 ***** Running generation 544 *****
Population's average fitness: 27.34852 stdev: 125.08130
Best fitness: 269.30276 - size: (30, 62) - species 4 - id 124552
Average adjusted fitness: 0.399
Mean genetic distance 2.343, standard deviation 0.768
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
  ==== === ===== ===== ====
    4
       93 135 269.3 0.443
                                    54
    5
        62 115
                   240.6
                            0.355
Total extinctions: 0
Generation time: 16.806 sec (17.204 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-544
 ***** Running generation 545 *****
Population's average fitness: 40.36375 stdev: 132.93875
Best fitness: 248.40741 - size: (29, 61) - species 4 - id 125621
Average adjusted fitness: 0.451
Mean genetic distance 2.347, standard deviation 0.757
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== ==== ====== ===== ====
           139 248.4 0.516
       94
                                  55
    5
            111
                   247.1
                            0.386
                                    17
        63
Total extinctions: 0
Generation time: 16.897 sec (17.099 average)
```

```
***** Running generation 546 *****
Population's average fitness: 13.50367 stdev: 126.88543
Best fitness: 262.67833 - size: (29, 62) - species 4 - id 125944
Average adjusted fitness: 0.408
Mean genetic distance 2.386, standard deviation 0.740
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== ====
  ==== ===
    4
        95
            141
                   262.7
                            0.464
                                     56
    5
        64
            109
                    255.8
                            0.352
                                     18
Total extinctions: 0
Generation time: 16.006 sec (16.894 average)
 ***** Running generation 547 *****
Population's average fitness: 36.08130 stdev: 126.32101
Best fitness: 260.03447 - size: (29, 61) - species 4 - id 125621
Average adjusted fitness: 0.463
Mean genetic distance 2.451, standard deviation 0.700
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    4
       96
            140
                            0.512
                                     57
                    260.0
        65
            110
                    240.1
                            0.415
                                     19
Total extinctions: 0
Generation time: 17.819 sec (16.948 average)
 ***** Running generation 548 *****
Population's average fitness: 26.43411 stdev: 129.80496
Best fitness: 242.09571 - size: (24, 41) - species 5 - id 126286
Average adjusted fitness: 0.469
Mean genetic distance 2.522, standard deviation 0.645
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4
       97
                    239.9
                                     58
            139
                            0.520
    5
        66
            111
                    242.1
                            0.418
                                     20
Total extinctions: 0
Generation time: 16.725 sec (16.939 average)
 ***** Running generation 549 *****
Population's average fitness: 24.76221 stdev: 125.63112
Best fitness: 254.10144 - size: (25, 48) - species 5 - id 126568
Average adjusted fitness: 0.408
Mean genetic distance 2.550, standard deviation 0.636
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    4
       98 138
                    242.5
                            0.451
                                     59
    5
            112
                    254.1
                            0.365
                                     21
        67
Total extinctions: 0
Generation time: 17.183 sec (17.088 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-549
```

***** Running generation 550 *****

```
Population's average fitness: 18.27034 stdev: 123.51822
Best fitness: 251.86569 - size: (25, 48) - species 5 - id 126568
Average adjusted fitness: 0.404
Mean genetic distance 2.515, standard deviation 0.660
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
       99
           134 249.9 0.419
    5
       68 116
                   251.9
                            0.388
                                    22
Total extinctions: 0
Generation time: 16.750 sec (16.994 average)
***** Running generation 551 *****
Population's average fitness: -0.06511 stdev: 120.92725
Best fitness: 257.94747 - size: (30, 58) - species 4 - id 126663
Average adjusted fitness: 0.412
Mean genetic distance 2.547, standard deviation 0.683
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 100 135 257.9
                            0.449
                                    61
    5 69 115 211.2 0.376
                                    23
Total extinctions: 0
Generation time: 15.206 sec (16.823 average)
***** Running generation 552 *****
Population's average fitness: -2.64677 stdev: 119.71435
Best fitness: 236.36181 - size: (29, 56) - species 4 - id 126951
Average adjusted fitness: 0.387
Mean genetic distance 2.599, standard deviation 0.628
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
           133
    4 101
                   236.4
                            0.408
                                    62
    5
       70 117 217.3
                            0.366
                                    24
Total extinctions: 0
Generation time: 14.656 sec (16.567 average)
***** Running generation 553 *****
Population's average fitness: 18.55982 stdev: 124.15259
Best fitness: 256.80907 - size: (29, 60) - species 4 - id 127506
Average adjusted fitness: 0.379
Mean genetic distance 2.571, standard deviation 0.583
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    4 102
             139
                   256.8
                            0.442
                                    63
                                    25
    5
       71
            111
                 222.0
                            0.315
Total extinctions: 0
Generation time: 17.029 sec (16.508 average)
***** Running generation 554 *****
Population's average fitness: 17.46808 stdev: 124.78933
Best fitness: 237.66433 - size: (27, 49) - species 5 - id 125742
Average adjusted fitness: 0.421
Mean genetic distance 2.548, standard deviation 0.602
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 103
           140 236.5 0.473 64
    5
      72 110 237.7 0.370
                                    26
Total extinctions: 0
Generation time: 16.575 sec (16.485 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-554
***** Running generation 555 *****
Population's average fitness: 10.75342 stdev: 124.15791
Best fitness: 261.12991 - size: (24, 45) - species 5 - id 128001
Average adjusted fitness: 0.366
Mean genetic distance 2.559, standard deviation 0.568
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4 104 142 253.4 0.423 65
    5
       73
           108
                 261.1
                           0.310
                                    27
Total extinctions: 0
Generation time: 16.634 sec (16.458 average)
***** Running generation 556 *****
Population's average fitness: 2.47927 stdev: 122.48791
Best fitness: 264.26570 - size: (29, 53) - species 4 - id 128156
Average adjusted fitness: 0.453
Mean genetic distance 2.486, standard deviation 0.534
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 105
           137 264.3 0.481 66
    5
       74
           113
                 229.0 0.426 28
Total extinctions: 0
Generation time: 16.126 sec (16.470 average)
***** Running generation 557 *****
Population's average fitness: 19.15479 stdev: 124.05657
Best fitness: 284.45426 - size: (23, 42) - species 5 - id 127937
Average adjusted fitness: 0.424
Mean genetic distance 2.493, standard deviation 0.513
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    4 106 138 232.2 0.469 67
    5
       75
           112 284.5
                           0.379
                                    29
Total extinctions: 0
Generation time: 17.724 sec (16.461 average)
***** Running generation 558 *****
Population's average fitness: 5.24857 stdev: 122.45428
Best fitness: 243.58977 - size: (29, 50) - species 4 - id 128527
Average adjusted fitness: 0.424
Mean genetic distance 2.526, standard deviation 0.553
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
```

```
====
                 4 107
             137
                   243.6
                           0.466
                   220.1
        76
            113
                            0.382
                                    30
Total extinctions: 0
Generation time: 16.174 sec (16.405 average)
 ***** Running generation 559 *****
Population's average fitness: -1.00042 stdev: 117.24194
Best fitness: 240.07351 - size: (23, 39) - species 5 - id 128206
Average adjusted fitness: 0.361
Mean genetic distance 2.506, standard deviation 0.615
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 108 134 227.5 0.381
                                    69
                   240.1 0.341
       77
            116
                                    31
Total extinctions: 0
Generation time: 15.781 sec (16.265 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-559
***** Running generation 560 *****
Population's average fitness: 7.90974 stdev: 116.67818
Best fitness: 237.35036 - size: (22, 39) - species 5 - id 128736
Average adjusted fitness: 0.400
Mean genetic distance 2.479, standard deviation 0.594
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    4 109
            135
                   230.1
                           0.436
                                    70
                   237.4
    5
       78
            115
                            0.365
                                    32
Total extinctions: 0
Generation time: 16.129 sec (16.203 average)
 ***** Running generation 561 *****
Population's average fitness: -5.77391 stdev: 118.05108
Best fitness: 239.96333 - size: (23, 39) - species 5 - id 129311
Average adjusted fitness: 0.342
Mean genetic distance 2.512, standard deviation 0.582
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 110
                   239.6
                            0.341
           130
                                    71
    5
        79
            120
                   240.0
                            0.344
                                    33
Total extinctions: 0
Generation time: 14.956 sec (16.178 average)
 ***** Running generation 562 *****
Population's average fitness: 13.88835 stdev: 121.35618
Best fitness: 260.41565 - size: (22, 43) - species 5 - id 129309
Average adjusted fitness: 0.380
Mean genetic distance 2.518, standard deviation 0.561
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 111
           129
                 245.8
                            0.387
                                    72
```

```
80
            121
                   260.4
                            0.374
Total extinctions: 0
Generation time: 16.442 sec (16.357 average)
***** Running generation 563 *****
Population's average fitness: 22.19472 stdev: 127.64553
Best fitness: 237.51074 - size: (22, 41) - species 5 - id 129841
Average adjusted fitness: 0.484
Mean genetic distance 2.521, standard deviation 0.600
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4 112
           132
                   230.6
                            0.518
                                    73
       81 118 237.5
                            0.449
                                    35
Total extinctions: 0
Generation time: 16.401 sec (16.294 average)
***** Running generation 564 *****
Population's average fitness: 24.31787 stdev: 123.28231
Best fitness: 252.30522 - size: (26, 47) - species 5 - id 130067
Average adjusted fitness: 0.449
Mean genetic distance 2.469, standard deviation 0.669
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
           130
    4 113
                   243.9
                            0.459
                                    74
       82
            120
                   252.3
                            0.439
Total extinctions: 0
Generation time: 18.111 sec (16.448 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-564
***** Running generation 565 *****
Population's average fitness: 22.05732 stdev: 119.80486
Best fitness: 232.99032 - size: (23, 39) - species 5 - id 128206
Average adjusted fitness: 0.435
Mean genetic distance 2.468, standard deviation 0.688
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
       === ==== ===== ====
    4 114 131 231.3
                            0.461
                                    75
    5
       83
            119
                   233.0
                            0.409
                                    37
Total extinctions: 0
Generation time: 17.373 sec (16.522 average)
***** Running generation 566 *****
Population's average fitness: 29.58558 stdev: 122.84075
Best fitness: 243.80354 - size: (28, 46) - species 4 - id 130416
Average adjusted fitness: 0.430
Mean genetic distance 2.479, standard deviation 0.672
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
      115
            135
                   243.8
                            0.478
                                     76
                   239.2
                            0.381
    5
       84
            115
                                    38
Total extinctions: 0
```

```
Generation time: 17.566 sec (16.666 average)
 ***** Running generation 567 *****
Population's average fitness: 21.84113 stdev: 131.27383
Best fitness: 249.80184 - size: (28, 58) - species 4 - id 130683
Average adjusted fitness: 0.410
Mean genetic distance 2.436, standard deviation 0.709
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    4 116 137 249.8 0.455 77
       85 113 228.2 0.365
                                    39
Total extinctions: 0
Generation time: 16.429 sec (16.536 average)
***** Running generation 568 *****
Population's average fitness: 20.23623 stdev: 124.78665
Best fitness: 258.90171 - size: (23, 38) - species 5 - id 130876
Average adjusted fitness: 0.414
Mean genetic distance 2.421, standard deviation 0.716
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
 ==== === ===== ===== ====
                                    78
    4 117 134 241.8 0.436
       86 116 258.9
                           0.392
                                    40
Total extinctions: 0
Generation time: 16.766 sec (16.595 average)
 ***** Running generation 569 *****
Population's average fitness: 26.67311 stdev: 123.08929
Best fitness: 267.84630 - size: (26, 50) - species 4 - id 131116
Average adjusted fitness: 0.423
Mean genetic distance 2.519, standard deviation 0.649
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4 118 127 267.8
                           0.410
                                    79
    5
       87 123
                   243.0
                            0.437
Total extinctions: 0
Generation time: 17.153 sec (16.733 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-569
 ***** Running generation 570 *****
Population's average fitness: 20.79021 stdev: 126.34970
Best fitness: 241.84180 - size: (22, 36) - species 5 - id 131146
Average adjusted fitness: 0.403
Mean genetic distance 2.553, standard deviation 0.602
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== ==== ====== ===== ====
      119 131 235.5 0.435 80
            119
                   241.8
                            0.371
                                    42
       88
Total extinctions: 0
Generation time: 16.008 sec (16.720 average)
```

```
***** Running generation 571 *****
Population's average fitness: 42.54022 stdev: 125.55628
Best fitness: 250.04221 - size: (27, 54) - species 4 - id 131497
Average adjusted fitness: 0.457
Mean genetic distance 2.531, standard deviation 0.623
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4 120
            132
                   250.0
                            0.488
                                     81
    5
       89 118
                   233.1
                            0.426
                                     43
Total extinctions: 0
Generation time: 17.808 sec (17.006 average)
 ***** Running generation 572 *****
Population's average fitness: 23.31092 stdev: 127.61977
Best fitness: 232.23373 - size: (23, 39) - species 5 - id 131229
Average adjusted fitness: 0.423
Mean genetic distance 2.559, standard deviation 0.627
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    4 121 135
                            0.465
                    230.4
                                     82
        90
            115
                    232.2
                            0.380
                                     44
Total extinctions: 0
Generation time: 16.106 sec (16.972 average)
 ***** Running generation 573 *****
Population's average fitness: 23.79002 stdev: 128.31154
Best fitness: 249.26296 - size: (26, 52) - species 4 - id 131910
Average adjusted fitness: 0.488
Mean genetic distance 2.501, standard deviation 0.692
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4 122 130
                    249.3
                            0.488
                                     83
    5
       91
             120
                    230.4
                            0.488
                                     45
Total extinctions: 0
Generation time: 16.089 sec (16.941 average)
 ***** Running generation 574 *****
Population's average fitness: 33.62213 stdev: 126.48407
Best fitness: 263.56041 - size: (23, 38) - species 5 - id 131148
Average adjusted fitness: 0.428
Mean genetic distance 2.523, standard deviation 0.646
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
      123 127
                    229.6
                            0.422
                                     84
    5
       92 123
                    263.6
                            0.433
                                     46
Total extinctions: 0
Generation time: 17.190 sec (16.849 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-574
```

***** Running generation 575 *****

```
Population's average fitness: 38.97989 stdev: 126.95956
Best fitness: 270.81767 - size: (22, 38) - species 5 - id 132165
Average adjusted fitness: 0.449
Mean genetic distance 2.521, standard deviation 0.699
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 124 130 254.5 0.475
    5
       93 120
                   270.8
                            0.424
                                    47
Total extinctions: 0
Generation time: 18.111 sec (16.923 average)
***** Running generation 576 *****
Population's average fitness: 31.22850 stdev: 129.21089
Best fitness: 251.11409 - size: (25, 52) - species 4 - id 132665
Average adjusted fitness: 0.419
Mean genetic distance 2.541, standard deviation 0.708
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 125 137 251.1 0.480
                                    86
    5 94 113 234.3 0.358
                                    48
Total extinctions: 0
Generation time: 16.414 sec (16.807 average)
***** Running generation 577 *****
Population's average fitness: 21.24014 stdev: 123.54727
Best fitness: 252.22109 - size: (29, 45) - species 4 - id 133028
Average adjusted fitness: 0.445
Mean genetic distance 2.562, standard deviation 0.680
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
           136
    4 126
                   252.2
                            0.485
    5
       95 114 243.8
                            0.405
                                    49
Total extinctions: 0
Generation time: 16.634 sec (16.828 average)
***** Running generation 578 *****
Population's average fitness: 33.70468 stdev: 127.14129
Best fitness: 258.12659 - size: (23, 41) - species 5 - id 133181
Average adjusted fitness: 0.433
Mean genetic distance 2.587, standard deviation 0.679
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                   251.8
    4 127
            137
                            0.477
                   258.1
    5
       96
            113
                            0.389
                                    50
Total extinctions: 0
Generation time: 17.164 sec (16.868 average)
***** Running generation 579 *****
Population's average fitness: 32.14268 stdev: 126.46569
Best fitness: 268.24105 - size: (26, 52) - species 4 - id 133336
Average adjusted fitness: 0.410
Mean genetic distance 2.593, standard deviation 0.653
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    4 128
           129 268.2 0.397 89
    5
      97 121 256.7 0.423
                                   51
Total extinctions: 0
Generation time: 16.989 sec (16.851 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-579
***** Running generation 580 *****
Population's average fitness: 42.71464 stdev: 124.66587
Best fitness: 240.94204 - size: (26, 51) - species 4 - id 133732
Average adjusted fitness: 0.474
Mean genetic distance 2.572, standard deviation 0.668
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4 129 132 240.9 0.508 90
    5
       98
           118
                 220.9
                           0.440
                                    52
Total extinctions: 0
Generation time: 17.974 sec (17.048 average)
***** Running generation 581 *****
Population's average fitness: 29.66285 stdev: 126.65922
Best fitness: 242.39408 - size: (31, 47) - species 4 - id 133987
Average adjusted fitness: 0.428
Mean genetic distance 2.547, standard deviation 0.705
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 130
           129 242.4 0.433 91
    5
       99
           121 238.7 0.424 53
Total extinctions: 0
Generation time: 17.419 sec (17.009 average)
***** Running generation 582 *****
Population's average fitness: 27.68485 stdev: 124.29900
Best fitness: 246.19906 - size: (24, 40) - species 5 - id 134046
Average adjusted fitness: 0.421
Mean genetic distance 2.583, standard deviation 0.687
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    4 131 130 245.3 0.438 92
    5 100
           120 246.2
                           0.405
                                    54
Total extinctions: 0
Generation time: 16.911 sec (17.089 average)
***** Running generation 583 *****
Population's average fitness: 29.65182 stdev: 129.56925
Best fitness: 251.37400 - size: (23, 41) - species 5 - id 133805
Average adjusted fitness: 0.446
Mean genetic distance 2.628, standard deviation 0.677
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
```

```
====
                 4 132
            128
                   242.2
                            0.452
                                    93
    5 101
            122
                   251.4
                            0.439
                                    55
Total extinctions: 0
Generation time: 16.520 sec (17.132 average)
 ***** Running generation 584 *****
Population's average fitness: 31.61853 stdev: 122.33300
Best fitness: 244.45587 - size: (23, 43) - species 5 - id 133454
Average adjusted fitness: 0.502
Mean genetic distance 2.702, standard deviation 0.637
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 133 127 235.6
                            0.503
                                    94
                   244.5
    5 102
            123
                            0.502
                                    56
Total extinctions: 0
Generation time: 18.086 sec (17.222 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-584
***** Running generation 585 *****
Population's average fitness: 31.22320 stdev: 121.52119
Best fitness: 261.50078 - size: (23, 41) - species 5 - id 134594
Average adjusted fitness: 0.449
Mean genetic distance 2.693, standard deviation 0.689
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    4 134
            131
                   250.7
                            0.485
                                    95
                   261.5
    5 103
           119
                            0.412
                                    57
Total extinctions: 0
Generation time: 17.539 sec (17.165 average)
 ***** Running generation 586 *****
Population's average fitness: 17.60129 stdev: 123.26609
Best fitness: 250.04059 - size: (28, 45) - species 4 - id 133911
Average adjusted fitness: 0.393
Mean genetic distance 2.691, standard deviation 0.727
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    4 135
                            0.399
           129
                   250.0
                                    96
    5 104
            121
                   237.9
                            0.386
                                    58
Total extinctions: 0
Generation time: 16.128 sec (17.136 average)
 ***** Running generation 587 *****
Population's average fitness: 41.07279 stdev: 123.80776
Best fitness: 256.81179 - size: (24, 37) - species 4 - id 135388
Average adjusted fitness: 0.455
Mean genetic distance 2.751, standard deviation 0.673
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 136
            127
                 256.8
                            0.459
                                    97
```

```
5 105
            123
                   245.2
                            0.452
                                    59
Total extinctions: 0
Generation time: 16.816 sec (17.155 average)
***** Running generation 588 *****
Population's average fitness: 37.98465 stdev: 127.92795
Best fitness: 255.93669 - size: (26, 41) - species 4 - id 135592
Average adjusted fitness: 0.513
Mean genetic distance 2.825, standard deviation 0.638
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
           133
    4 137
                   255.9
                            0.569
                                    98
    5 106 117 245.3
                           0.457
                                    60
Total extinctions: 0
Generation time: 16.743 sec (17.112 average)
***** Running generation 589 *****
Population's average fitness: 16.33233 stdev: 124.25623
Best fitness: 250.32146 - size: (27, 43) - species 4 - id 135571
Average adjusted fitness: 0.412
Mean genetic distance 2.886, standard deviation 0.592
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    4 138
           130
                   250.3
                           0.419
                                    99
    5 107 120
                  250.0
                            0.405
Total extinctions: 0
Generation time: 15.814 sec (16.995 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-589
***** Running generation 590 *****
Population's average fitness: 22.63492 stdev: 124.02375
Best fitness: 248.18677 - size: (24, 40) - species 5 - id 135891
Average adjusted fitness: 0.406
Mean genetic distance 2.768, standard deviation 0.642
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
      === ==== ===== ====
    4 139 126 244.1
                           0.393
                                  100
    5 108
           124
                 248.2
                            0.419
                                  62
Total extinctions: 0
Generation time: 15.841 sec (16.782 average)
***** Running generation 591 *****
Population's average fitness: 11.38218 stdev: 122.63985
Best fitness: 253.81310 - size: (25, 38) - species 5 - id 135878
Average adjusted fitness: 0.407
Mean genetic distance 2.619, standard deviation 0.706
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4 140
            131
                   236.0
                            0.442 101
    5 109
                 253.8
           119
                            0.373 63
Total extinctions: 0
```

```
Generation time: 15.842 sec (16.624 average)
 ***** Running generation 592 *****
Population's average fitness: 30.77114 stdev: 124.31670
Best fitness: 259.30912 - size: (25, 38) - species 5 - id 135878
Average adjusted fitness: 0.414
Mean genetic distance 2.516, standard deviation 0.756
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    4 141 130 230.2 0.425 102
    5 110 120 259.3 0.404 64
Total extinctions: 0
Generation time: 16.681 sec (16.601 average)
***** Running generation 593 *****
Population's average fitness: 23.24713 stdev: 129.04850
Best fitness: 248.08529 - size: (21, 38) - species 5 - id 136758
Average adjusted fitness: 0.403
Mean genetic distance 2.454, standard deviation 0.811
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
 ==== === ===== ===== ====
    4 142 136 243.3 0.456 103
    5 111 114 248.1
                           0.349
Total extinctions: 0
Generation time: 15.295 sec (16.479 average)
 ***** Running generation 594 *****
Population's average fitness: 50.47407 stdev: 122.55316
Best fitness: 284.95617 - size: (28, 49) - species 4 - id 136825
Average adjusted fitness: 0.447
Mean genetic distance 2.578, standard deviation 0.759
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4 143 138 285.0 0.502
                                     a
    5 112 112
                   239.5
                            0.392
Total extinctions: 0
Generation time: 17.345 sec (16.405 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-594
 ***** Running generation 595 *****
Population's average fitness: 36.68569 stdev: 125.18243
Best fitness: 248.91875 - size: (24, 34) - species 4 - id 137113
Average adjusted fitness: 0.471
Mean genetic distance 2.611, standard deviation 0.721
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
      144 135 248.9 0.499
                                    1
           115
    5 113
                   241.3
                            0.444
                                    67
Total extinctions: 0
Generation time: 16.250 sec (16.276 average)
```

```
***** Running generation 596 *****
Population's average fitness: 30.65385 stdev: 125.59105
Best fitness: 272.64377 - size: (24, 33) - species 4 - id 136655
Average adjusted fitness: 0.443
Mean genetic distance 2.578, standard deviation 0.719
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4 145
            136
                   272.6
                            0.489
    5 114
                    248.5
                            0.397
                                     68
           114
Total extinctions: 0
Generation time: 16.616 sec (16.324 average)
 ***** Running generation 597 *****
Population's average fitness: 29.66787 stdev: 124.34211
Best fitness: 252.76774 - size: (28, 46) - species 4 - id 136597
Average adjusted fitness: 0.424
Mean genetic distance 2.633, standard deviation 0.699
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    4 146
           137
                            0.468
                                      3
                    252.8
    5 115
            113
                    240.7
                            0.380
                                     69
Total extinctions: 0
Generation time: 18.699 sec (16.513 average)
 ***** Running generation 598 *****
Population's average fitness: 31.99599 stdev: 125.87375
Best fitness: 245.25643 - size: (24, 41) - species 5 - id 137724
Average adjusted fitness: 0.544
Mean genetic distance 2.685, standard deviation 0.670
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4 147
                                      4
             134
                    240.6
                            0.570
    5
      116
             116
                    245.3
                            0.519
                                     70
Total extinctions: 0
Generation time: 17.431 sec (16.581 average)
 ***** Running generation 599 *****
Population's average fitness: 36.36823 stdev: 130.70431
Best fitness: 276.91513 - size: (24, 41) - species 5 - id 138116
Average adjusted fitness: 0.415
Mean genetic distance 2.689, standard deviation 0.634
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    4 148 133
                    246.1
                            0.441
                                      5
    5 117
            117
                    276.9
                            0.389
                                     71
Total extinctions: 0
Generation time: 17.542 sec (16.754 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-599
```

***** Running generation 600 *****

```
Population's average fitness: 14.99823 stdev: 121.32885
Best fitness: 247.36147 - size: (24, 41) - species 5 - id 137724
Average adjusted fitness: 0.377
Mean genetic distance 2.662, standard deviation 0.644
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 149
           132 241.1 0.396
    5 118 118 247.4
                            0.357
                                    72
Total extinctions: 0
Generation time: 15.283 sec (16.698 average)
***** Running generation 601 *****
Population's average fitness: 37.17766 stdev: 128.08822
Best fitness: 252.10352 - size: (24, 36) - species 4 - id 138243
Average adjusted fitness: 0.432
Mean genetic distance 2.595, standard deviation 0.677
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 150 133 252.1 0.458
                                    7
    5 119 117 243.1 0.406
                                    73
Total extinctions: 0
Generation time: 16.924 sec (16.807 average)
***** Running generation 602 *****
Population's average fitness: 26.40565 stdev: 130.16664
Best fitness: 277.09643 - size: (24, 43) - species 5 - id 138630
Average adjusted fitness: 0.396
Mean genetic distance 2.511, standard deviation 0.684
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
           134
    4 151
                   250.0
                            0.430
                                     8
    5 120 116 277.1
                            0.362
                                    74
Total extinctions: 0
Generation time: 15.047 sec (16.643 average)
***** Running generation 603 *****
Population's average fitness: 22.95241 stdev: 130.13972
Best fitness: 244.96928 - size: (23, 39) - species 5 - id 139044
Average adjusted fitness: 0.448
Mean genetic distance 2.505, standard deviation 0.681
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    4 152
             126
                   238.8
                            0.426
           124
                 245.0
                            0.471
                                    75
    5 121
Total extinctions: 0
Generation time: 14.669 sec (16.581 average)
***** Running generation 604 *****
Population's average fitness: 23.13661 stdev: 125.65846
Best fitness: 248.93426 - size: (23, 39) - species 5 - id 139044
Average adjusted fitness: 0.398
Mean genetic distance 2.552, standard deviation 0.658
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    4 153 125 247.0 0.398 10
    5 122 125 248.9 0.399 76
Total extinctions: 0
Generation time: 15.344 sec (16.381 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-604
***** Running generation 605 *****
Population's average fitness: 26.18671 stdev: 125.44409
Best fitness: 249.31710 - size: (24, 40) - species 5 - id 139448
Average adjusted fitness: 0.464
Mean genetic distance 2.577, standard deviation 0.658
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 154 128 236.5 0.485
                                   11
                 249.3
    5 123
           122
                           0.444
                                    77
Total extinctions: 0
Generation time: 16.392 sec (16.395 average)
***** Running generation 606 *****
Population's average fitness: 35.59033 stdev: 127.05998
Best fitness: 283.56588 - size: (24, 40) - species 5 - id 139666
Average adjusted fitness: 0.429
Mean genetic distance 2.576, standard deviation 0.691
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 155 132 259.8 0.465 12
    5 124 118 283.6 0.393
                                   78
Total extinctions: 0
Generation time: 16.376 sec (16.371 average)
***** Running generation 607 *****
Population's average fitness: 27.13404 stdev: 127.82451
Best fitness: 253.43456 - size: (30, 54) - species 4 - id 139786
Average adjusted fitness: 0.426
Mean genetic distance 2.548, standard deviation 0.731
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    4 156 131 253.4 0.441 13
    5 125 119 243.2
                           0.412
                                    79
Total extinctions: 0
Generation time: 15.561 sec (16.057 average)
***** Running generation 608 *****
Population's average fitness: 28.26564 stdev: 130.88835
Best fitness: 253.58453 - size: (28, 49) - species 4 - id 140140
Average adjusted fitness: 0.427
Mean genetic distance 2.473, standard deviation 0.775
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
```

```
====
                 ======= ======
    4 157
            133
                   253.6
                            0.461
                   248.8
    5 126
            117
                            0.394
                                    80
Total extinctions: 0
Generation time: 15.581 sec (15.872 average)
 ***** Running generation 609 *****
Population's average fitness: 31.95647 stdev: 127.27455
Best fitness: 251.59275 - size: (27, 47) - species 4 - id 140431
Average adjusted fitness: 0.500
Mean genetic distance 2.516, standard deviation 0.719
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 158 134 251.6
                            0.542
                                    15
                   247.0
                          0.458
    5 127
            116
                                    81
Total extinctions: 0
Generation time: 16.775 sec (15.795 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-609
***** Running generation 610 *****
Population's average fitness: 23.74047 stdev: 129.92268
Best fitness: 256.23654 - size: (28, 40) - species 4 - id 140576
Average adjusted fitness: 0.453
Mean genetic distance 2.481, standard deviation 0.722
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    4 159
            136
                   256.2
                            0.498
                   253.5
    5 128
           114
                            0.407
                                    82
Total extinctions: 0
Generation time: 15.483 sec (15.815 average)
 ***** Running generation 611 *****
Population's average fitness: 32.37575 stdev: 129.51075
Best fitness: 249.40234 - size: (24, 37) - species 5 - id 140687
Average adjusted fitness: 0.424
Mean genetic distance 2.434, standard deviation 0.750
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    4 160
           135
                   243.5
                            0.452
                                    17
    5 129
            115
                   249.4
                            0.397
                                    83
Total extinctions: 0
Generation time: 16.366 sec (15.759 average)
 ***** Running generation 612 *****
Population's average fitness: 33.81951 stdev: 130.64167
Best fitness: 259.70193 - size: (28, 43) - species 4 - id 140924
Average adjusted fitness: 0.416
Mean genetic distance 2.459, standard deviation 0.733
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 161
           134
                 259.7
                            0.448
                                    18
```

```
5 130
            116
                   258.4
                            0.383
Total extinctions: 0
Generation time: 15.932 sec (15.848 average)
***** Running generation 613 *****
Population's average fitness: 16.75965 stdev: 127.20661
Best fitness: 257.96089 - size: (24, 42) - species 5 - id 141170
Average adjusted fitness: 0.408
Mean genetic distance 2.441, standard deviation 0.710
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4 162 135
                   233.6
                            0.445
                                    19
    5 131 115 258.0
                                    85
                            0.371
Total extinctions: 0
Generation time: 15.469 sec (15.928 average)
***** Running generation 614 *****
Population's average fitness: 20.88682 stdev: 122.63441
Best fitness: 243.34583 - size: (29, 45) - species 4 - id 141374
Average adjusted fitness: 0.428
Mean genetic distance 2.426, standard deviation 0.715
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    4 163
           139
                   243.3
                            0.489
                                    20
    5 132
            111
                 228.9
                            0.367
Total extinctions: 0
Generation time: 16.206 sec (16.014 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-614
***** Running generation 615 *****
Population's average fitness: 15.78089 stdev: 125.31256
Best fitness: 243.32403 - size: (27, 40) - species 4 - id 141744
Average adjusted fitness: 0.404
Mean genetic distance 2.420, standard deviation 0.723
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
       === ==== ===== ====
    4 164 135 243.3
                            0.424
                                    21
    5 133
           115
                 237.6
                            0.384
Total extinctions: 0
Generation time: 14.997 sec (15.875 average)
***** Running generation 616 *****
Population's average fitness: 6.30024 stdev: 121.75521
Best fitness: 253.57975 - size: (27, 40) - species 4 - id 141744
Average adjusted fitness: 0.394
Mean genetic distance 2.523, standard deviation 0.697
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
      165
            134
                   253.6
                            0.424
                                    22
    5 134
            116
                 250.2
                            0.364
                                    88
Total extinctions: 0
```

```
Generation time: 15.320 sec (15.769 average)
 ***** Running generation 617 *****
Population's average fitness: 8.47754 stdev: 118.21279
Best fitness: 225.82028 - size: (28, 48) - species 4 - id 142288
Average adjusted fitness: 0.398
Mean genetic distance 2.560, standard deviation 0.672
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    4 166 135 225.8 0.430
    5 135 115 224.0
                           0.367
Total extinctions: 0
Generation time: 15.613 sec (15.774 average)
***** Running generation 618 *****
Population's average fitness: 1.24851 stdev: 120.94630
Best fitness: 261.26900 - size: (23, 35) - species 5 - id 142303
Average adjusted fitness: 0.369
Mean genetic distance 2.568, standard deviation 0.646
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
 ==== === ===== ===== ====
    4 167 132 221.1 0.381
                                    24
    5 136 118 261.3
                           0.357
Total extinctions: 0
Generation time: 14.893 sec (15.706 average)
 ***** Running generation 619 *****
Population's average fitness: 4.46931 stdev: 121.27633
Best fitness: 249.95485 - size: (24, 36) - species 5 - id 142342
Average adjusted fitness: 0.416
Mean genetic distance 2.558, standard deviation 0.676
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
  ==== === ===== ===== ====
    4 168 133 236.8
                           0.439
                                    25
    5 137 117
                   250.0
                            0.392
Total extinctions: 0
Generation time: 15.498 sec (15.578 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-619
 ***** Running generation 620 *****
Population's average fitness: 18.53789 stdev: 123.47443
Best fitness: 235.56472 - size: (24, 41) - species 5 - id 142914
Average adjusted fitness: 0.456
Mean genetic distance 2.532, standard deviation 0.682
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== ==== ====== ===== ====
      169 134 230.4 0.492 26
           116
    5 138
                 235.6
                            0.419
Total extinctions: 0
Generation time: 16.437 sec (15.673 average)
```

```
***** Running generation 621 *****
Population's average fitness: 37.30661 stdev: 127.28135
Best fitness: 272.77775 - size: (24, 36) - species 5 - id 142342
Average adjusted fitness: 0.434
Mean genetic distance 2.598, standard deviation 0.715
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4 170
            135
                   247.5
                            0.468
                                     27
    5 139 115
                   272.8
                            0.401
                                     93
Total extinctions: 0
Generation time: 17.603 sec (15.797 average)
 ***** Running generation 622 *****
Population's average fitness: 17.63260 stdev: 120.43532
Best fitness: 234.24054 - size: (26, 39) - species 4 - id 143249
Average adjusted fitness: 0.417
Mean genetic distance 2.644, standard deviation 0.674
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    4 171 131
                            0.425
                    234.2
                                     28
    5 140
            119
                    229.2
                            0.409
                                     94
Total extinctions: 0
Generation time: 16.054 sec (15.809 average)
 ***** Running generation 623 *****
Population's average fitness: 10.96683 stdev: 124.24384
Best fitness: 258.93782 - size: (23, 37) - species 5 - id 143454
Average adjusted fitness: 0.390
Mean genetic distance 2.662, standard deviation 0.603
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4 172 133
                    251.4
                            0.424
                                     29
      141
             117
                    258.9
                            0.356
                                     95
Total extinctions: 0
Generation time: 15.181 sec (15.780 average)
 ***** Running generation 624 *****
Population's average fitness: 27.11988 stdev: 125.83350
Best fitness: 249.31855 - size: (25, 44) - species 5 - id 143876
Average adjusted fitness: 0.435
Mean genetic distance 2.635, standard deviation 0.710
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    4 173 137
                   239.6
                            0.492
                                     30
    5 142 113
                    249.3
                            0.379
                                     96
Total extinctions: 0
Generation time: 16.693 sec (15.829 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-624
```

***** Running generation 625 *****

```
Population's average fitness: 21.02556 stdev: 125.83463
Best fitness: 243.00001 - size: (23, 38) - species 5 - id 143854
Average adjusted fitness: 0.435
Mean genetic distance 2.589, standard deviation 0.853
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 174 139 242.2 0.487
    5 143 111 243.0
                            0.383
                                    97
Total extinctions: 0
Generation time: 16.117 sec (15.941 average)
***** Running generation 626 *****
Population's average fitness: 3.70032 stdev: 126.98464
Best fitness: 235.21941 - size: (25, 39) - species 4 - id 143973
Average adjusted fitness: 0.394
Mean genetic distance 2.611, standard deviation 0.830
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 175 132 235.2 0.393
                                    32
    5 144 118 225.1 0.396
                                    98
Total extinctions: 0
Generation time: 14.098 sec (15.819 average)
***** Running generation 627 *****
Population's average fitness: 22.81944 stdev: 124.00502
Best fitness: 253.91924 - size: (24, 43) - species 5 - id 143529
Average adjusted fitness: 0.409
Mean genetic distance 2.527, standard deviation 0.849
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
           133
    4 176
                   240.5
                            0.433
    5 145 117 253.9
                            0.386
                                    99
Total extinctions: 0
Generation time: 16.072 sec (15.865 average)
***** Running generation 628 *****
Population's average fitness: 21.73457 stdev: 123.27320
Best fitness: 242.10039 - size: (28, 45) - species 4 - id 144706
Average adjusted fitness: 0.417
Mean genetic distance 2.550, standard deviation 0.839
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                   242.1
    4 177
            132
                            0.440
            118 231.6
                            0.394
    5 146
                                   100
Total extinctions: 0
Generation time: 15.978 sec (15.973 average)
***** Running generation 629 *****
Population's average fitness: 24.05561 stdev: 123.98079
Best fitness: 244.13097 - size: (27, 40) - species 4 - id 145001
Average adjusted fitness: 0.431
Mean genetic distance 2.595, standard deviation 0.810
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    4 178 135 244.1 0.474 35
    5 147 115 211.3 0.388 101
Total extinctions: 0
Generation time: 16.020 sec (16.025 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-629
***** Running generation 630 *****
Population's average fitness: 15.06513 stdev: 121.69140
Best fitness: 253.07941 - size: (24, 44) - species 5 - id 145153
Average adjusted fitness: 0.389
Mean genetic distance 2.573, standard deviation 0.861
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 179
           127
                 240.8 0.368 36
    5 148
           123
                   253.1
                           0.409
                                   102
Total extinctions: 0
Generation time: 15.919 sec (15.973 average)
***** Running generation 631 *****
Population's average fitness: 22.34727 stdev: 126.35032
Best fitness: 245.74491 - size: (27, 44) - species 4 - id 145331
Average adjusted fitness: 0.442
Mean genetic distance 2.610, standard deviation 0.799
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 180 125 245.7 0.435 37
           125 216.5 0.449
    5 149
                                   103
Total extinctions: 0
Generation time: 15.618 sec (15.775 average)
***** Running generation 632 *****
Population's average fitness: 33.59897 stdev: 119.77454
Best fitness: 247.05829 - size: (25, 41) - species 4 - id 145718
Average adjusted fitness: 0.436
Mean genetic distance 2.636, standard deviation 0.793
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    4 181 123 247.1 0.422 38
    5 150 127 231.3
                           0.450 104
Total extinctions: 0
Generation time: 17.207 sec (15.890 average)
***** Running generation 633 *****
Population's average fitness: 14.17639 stdev: 120.70543
Best fitness: 256.24586 - size: (23, 40) - species 5 - id 145511
Average adjusted fitness: 0.415
Mean genetic distance 2.619, standard deviation 0.807
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
```

```
===
           ====
                4 182
            121
                   224.0
                           0.396
                   256.2
    5 151
            129
                           0.434
                                  105
Total extinctions: 0
Generation time: 16.174 sec (15.990 average)
 ***** Running generation 634 *****
Population's average fitness: 19.90445 stdev: 122.73720
Best fitness: 238.31209 - size: (28, 42) - species 4 - id 146074
Average adjusted fitness: 0.405
Mean genetic distance 2.571, standard deviation 0.813
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 183 119 238.3 0.379
                                    40
           131
                   231.1 0.431 106
    5 152
Total extinctions: 0
Generation time: 16.171 sec (15.937 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-634
***** Running generation 635 *****
Population's average fitness: 26.55951 stdev: 123.66509
Best fitness: 242.77108 - size: (27, 42) - species 4 - id 145969
Average adjusted fitness: 0.454
Mean genetic distance 2.544, standard deviation 0.838
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    4 184
           121
                  242.8
                           0.443
                                   41
           129
                   239.8
    5 153
                           0.464 107
Total extinctions: 0
Generation time: 16.233 sec (15.949 average)
 ***** Running generation 636 *****
Population's average fitness: 36.40352 stdev: 122.82389
Best fitness: 232.61778 - size: (25, 45) - species 5 - id 146511
Average adjusted fitness: 0.453
Mean genetic distance 2.624, standard deviation 0.781
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    4 185
           129
                   228.4
                           0.500
                                   42
    5 154
            121
                   232.6
                           0.407 108
Total extinctions: 0
Generation time: 17.101 sec (16.249 average)
 ***** Running generation 637 *****
Population's average fitness: 23.67621 stdev: 121.35968
Best fitness: 239.08376 - size: (24, 45) - species 5 - id 146462
Average adjusted fitness: 0.488
Mean genetic distance 2.682, standard deviation 0.759
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 186
           127 220.2
                           0.491
                                    43
```

```
5 155
           123
                   239.1
                            0.485
Total extinctions: 0
Generation time: 15.923 sec (16.234 average)
***** Running generation 638 *****
Population's average fitness: 28.32428 stdev: 122.43705
Best fitness: 241.06064 - size: (26, 42) - species 4 - id 146973
Average adjusted fitness: 0.431
Mean genetic distance 2.672, standard deviation 0.756
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4 187
           128
                   241.1
                           0.438
    5 156 122 240.4 0.424 110
Total extinctions: 0
Generation time: 16.628 sec (16.299 average)
***** Running generation 639 *****
Population's average fitness: 30.33663 stdev: 121.46654
Best fitness: 249.09456 - size: (24, 44) - species 5 - id 147036
Average adjusted fitness: 0.441
Mean genetic distance 2.692, standard deviation 0.718
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    4 188
           130
                  233.6
                           0.468
                                    45
    5 157 120
                 249.1
                           0.414 111
Total extinctions: 0
Generation time: 16.754 sec (16.373 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-639
***** Running generation 640 *****
Population's average fitness: 32.36618 stdev: 124.67424
Best fitness: 239.21127 - size: (25, 43) - species 5 - id 147498
Average adjusted fitness: 0.437
Mean genetic distance 2.623, standard deviation 0.814
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
      === ==== ===== ====
    4 189 133 233.1 0.474
                                    46
                 239.2
    5 158
           117
                            0.401 112
Total extinctions: 0
Generation time: 16.158 sec (16.397 average)
***** Running generation 641 *****
Population's average fitness: 17.36981 stdev: 122.55828
Best fitness: 238.37925 - size: (27, 42) - species 4 - id 147623
Average adjusted fitness: 0.412
Mean genetic distance 2.654, standard deviation 0.775
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4 190
            131
                   238.4
                            0.425
                                    47
    5 159
                 227.9
                            0.400 113
           119
Total extinctions: 0
```

```
Generation time: 15.615 sec (16.396 average)
 ***** Running generation 642 *****
Population's average fitness: 22.51678 stdev: 124.71792
Best fitness: 266.82524 - size: (23, 33) - species 4 - id 147607
Average adjusted fitness: 0.416
Mean genetic distance 2.633, standard deviation 0.787
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    4 191 130 266.8 0.434
                                    48
    5 160 120 230.3 0.398
                                   114
Total extinctions: 0
Generation time: 14.984 sec (16.174 average)
***** Running generation 643 *****
Population's average fitness: 16.66526 stdev: 121.06613
Best fitness: 244.17424 - size: (23, 33) - species 4 - id 148202
Average adjusted fitness: 0.414
Mean genetic distance 2.707, standard deviation 0.723
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
 ==== === ===== ===== ====
    4 192 120 244.2 0.366
                                    49
    5 161 130 242.2 0.462 115
Total extinctions: 0
Generation time: 15.429 sec (16.100 average)
 ***** Running generation 644 *****
Population's average fitness: 28.17059 stdev: 122.75908
Best fitness: 251.89031 - size: (26, 37) - species 4 - id 148484
Average adjusted fitness: 0.434
Mean genetic distance 2.705, standard deviation 0.720
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    4 193 124 251.9 0.443
                                    50
    5 162 126 246.8
                            0.424
Total extinctions: 0
Generation time: 16.104 sec (16.093 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-644
 ***** Running generation 645 *****
Population's average fitness: 26.73159 stdev: 121.08674
Best fitness: 255.03967 - size: (25, 42) - species 5 - id 148586
Average adjusted fitness: 0.423
Mean genetic distance 2.708, standard deviation 0.750
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== ==== ====== ===== ====
      194 127 245.1 0.438 51
           123
    5 163
                   255.0
                            0.407
                                   117
Total extinctions: 0
Generation time: 16.688 sec (16.138 average)
```

```
***** Running generation 646 *****
Population's average fitness: 25.46741 stdev: 122.83163
Best fitness: 244.70311 - size: (26, 51) - species 5 - id 148884
Average adjusted fitness: 0.451
Mean genetic distance 2.766, standard deviation 0.753
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 195
            130
                   238.3
                            0.482
                                    52
    5 164
           120 244.7
                            0.420
                                   118
Total extinctions: 0
Generation time: 15.790 sec (16.007 average)
 ***** Running generation 647 *****
Population's average fitness: 11.40985 stdev: 123.62507
Best fitness: 264.60714 - size: (25, 47) - species 5 - id 148923
Average adjusted fitness: 0.368
Mean genetic distance 2.717, standard deviation 0.752
Population of 250 members in 2 species:
       age size fitness adj fit stag
 4 196 134
                            0.408
                                    53
                   238.4
    5 165
            116
                   264.6
                            0.328
                                   119
Total extinctions: 0
Generation time: 15.308 sec (15.946 average)
 ***** Running generation 648 *****
Population's average fitness: 16.90992 stdev: 123.08940
Best fitness: 230.80824 - size: (27, 43) - species 4 - id 149260
Average adjusted fitness: 0.407
Mean genetic distance 2.700, standard deviation 0.744
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 197
                   230.8
                            0.425
                                    54
           132
    5
      166
           118
                   224.4
                            0.388
                                   120
Total extinctions: 0
Generation time: 15.490 sec (15.832 average)
 ***** Running generation 649 *****
Population's average fitness: 26.23495 stdev: 125.57062
Best fitness: 248.64349 - size: (22, 30) - species 4 - id 149274
Average adjusted fitness: 0.425
Mean genetic distance 2.703, standard deviation 0.744
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ---- --- ---- -----
    4 198 130
                   248.6
                            0.436
                                    55
    5 167
            120
                   234.2
                            0.414
                                   121
Total extinctions: 0
Generation time: 15.303 sec (15.687 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-649
 ***** Running generation 650 *****
```

```
Population's average fitness: 16.22063 stdev: 123.01779
Best fitness: 240.35670 - size: (25, 44) - species 5 - id 149169
Average adjusted fitness: 0.434
Mean genetic distance 2.706, standard deviation 0.773
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 199 129 228.8 0.447
    5 168 121
                   240.4
                           0.420
                                   122
Total extinctions: 0
Generation time: 15.285 sec (15.600 average)
***** Running generation 651 *****
Population's average fitness: 26.06974 stdev: 123.84351
Best fitness: 242.34241 - size: (25, 42) - species 5 - id 149088
Average adjusted fitness: 0.453
Mean genetic distance 2.711, standard deviation 0.774
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    4 200 127 228.8 0.454
                                   57
    5 169 123 242.3 0.452 123
Total extinctions: 0
Generation time: 15.939 sec (15.632 average)
***** Running generation 652 *****
Population's average fitness: 21.18545 stdev: 126.87131
Best fitness: 247.82482 - size: (25, 44) - species 5 - id 150247
Average adjusted fitness: 0.446
Mean genetic distance 2.744, standard deviation 0.731
Population of 250 members in 3 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    4 201
           93 240.1
                          0.463
                                   58
    5 170 122 247.8 0.429 124
       0 35
                    --
    6
                                    a
Total extinctions: 0
Generation time: 15.611 sec (15.695 average)
***** Running generation 653 *****
Population's average fitness: 26.60863 stdev: 126.71812
Best fitness: 248.98727 - size: (27, 47) - species 5 - id 150477
Average adjusted fitness: 0.462
Mean genetic distance 2.802, standard deviation 0.682
Population of 250 members in 3 species:
       age size fitness adj fit stag
  ID
  ==== === ===== ===== ====
    4 202 45 230.3 0.416
                                   59
      171 110
                249.0 0.540
                                  125
    6
            95
                   210.6
                           0.430
        1
Total extinctions: 0
Generation time: 15.495 sec (15.701 average)
***** Running generation 654 *****
Population's average fitness: 32.27953 stdev: 126.20363
Best fitness: 250.58717 - size: (24, 38) - species 5 - id 150697
```

```
Species 4 with 45 members is stagnated: removing it
Average adjusted fitness: 0.439
Mean genetic distance 2.644, standard deviation 0.798
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    5 172
           135
                   250.6
                            0.479
                                    126
    6
       2 115
                    229.1
                            0.400
                                      a
Total extinctions: 0
Generation time: 16.147 sec (15.706 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-654
 ***** Running generation 655 *****
Population's average fitness: 31.15924 stdev: 128.03945
Best fitness: 274.36965 - size: (25, 42) - species 5 - id 150999
Average adjusted fitness: 0.409
Mean genetic distance 2.659, standard deviation 0.735
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    5 173 129
                    274.4
                            0.399
                                    127
    6
         3 121
                    242.5
                            0.419
Total extinctions: 0
Generation time: 16.152 sec (15.652 average)
 ***** Running generation 656 *****
Population's average fitness: 29.97372 stdev: 122.21642
Best fitness: 245.79715 - size: (24, 40) - species 5 - id 150772
Average adjusted fitness: 0.448
Mean genetic distance 2.734, standard deviation 0.702
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    5 174 133
                            0.490
                    245.8
                                    128
    6
       4
             117
                    210.9
                            0.405
                                      1
Total extinctions: 0
Generation time: 16.163 sec (15.689 average)
 ***** Running generation 657 *****
Population's average fitness: 27.76206 stdev: 125.24686
Best fitness: 248.33203 - size: (26, 50) - species 5 - id 151457
Average adjusted fitness: 0.449
Mean genetic distance 2.654, standard deviation 0.702
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ---- --- ---- -----
      175
           132
                    248.3
                            0.468
                                    129
    6
         5 118
                    211.7
                            0.430
                                      2
Total extinctions: 0
Generation time: 15.392 sec (15.698 average)
 ***** Running generation 658 *****
Population's average fitness: 18.42231 stdev: 128.36884
Best fitness: 280.56995 - size: (24, 38) - species 5 - id 151699
```

```
Average adjusted fitness: 0.370
Mean genetic distance 2.634, standard deviation 0.716
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                   280.6
                            0.368
    5 176
            128
       6 122 226.8 0.371
    6
Total extinctions: 0
Generation time: 14.449 sec (15.594 average)
***** Running generation 659 *****
Population's average fitness: 21.60483 stdev: 122.97027
Best fitness: 283.38322 - size: (26, 49) - species 5 - id 151822
Average adjusted fitness: 0.391
Mean genetic distance 2.656, standard deviation 0.725
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    5 177 127 283.4 0.396 131
       7 123
                   243.2
                            0.387
    6
Total extinctions: 0
Generation time: 15.919 sec (15.655 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-659
***** Running generation 660 *****
Population's average fitness: 25.68717 stdev: 125.42831
Best fitness: 258.18045 - size: (26, 41) - species 5 - id 152100
Average adjusted fitness: 0.439
Mean genetic distance 2.651, standard deviation 0.757
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
           128
    5 178
                   258.2
                            0.456
                                   132
    6
      8 122 243.6
                           0.423 0
Total extinctions: 0
Generation time: 15.673 sec (15.694 average)
***** Running generation 661 *****
Population's average fitness: 14.91140 stdev: 123.85157
Best fitness: 242.76429 - size: (26, 41) - species 5 - id 152100
Average adjusted fitness: 0.427
Mean genetic distance 2.700, standard deviation 0.686
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                   242.8
    5 179
            127
                           0.428
           123
                 238.5
                           0.427 1
    6
       9
Total extinctions: 0
Generation time: 14.497 sec (15.550 average)
***** Running generation 662 *****
Population's average fitness: 12.74526 stdev: 123.23790
Best fitness: 243.13943 - size: (25, 43) - species 5 - id 152334
Average adjusted fitness: 0.397
Mean genetic distance 2.667, standard deviation 0.698
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 180
           131 243.1 0.427 134
    6
      10
           119
                 239.2 0.367
Total extinctions: 0
Generation time: 14.580 sec (15.447 average)
***** Running generation 663 *****
Population's average fitness: 39.70834 stdev: 119.61823
Best fitness: 252.84120 - size: (23, 34) - species 5 - id 152787
Average adjusted fitness: 0.442
Mean genetic distance 2.656, standard deviation 0.735
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 181
           128 252.8 0.441 135
    6 11 122 222.2 0.442
Total extinctions: 0
Generation time: 16.661 sec (15.563 average)
 ***** Running generation 664 *****
Population's average fitness: 31.39256 stdev: 121.39039
Best fitness: 272.12562 - size: (26, 46) - species 5 - id 152617
Average adjusted fitness: 0.428
Mean genetic distance 2.614, standard deviation 0.717
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    5 182 124
                  272.1
                           0.412
                   237.9
       12
            126
                            0.444
    6
Total extinctions: 0
Generation time: 15.837 sec (15.532 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-664
***** Running generation 665 *****
Population's average fitness: 30.75318 stdev: 123.16175
Best fitness: 233.19584 - size: (25, 51) - species 5 - id 153274
Average adjusted fitness: 0.451
Mean genetic distance 2.624, standard deviation 0.701
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 183 120 233.2 0.419
                                  137
       13
           130
                 225.9
                            0.484
    6
Total extinctions: 0
Generation time: 15.799 sec (15.497 average)
***** Running generation 666 *****
Population's average fitness: 18.65608 stdev: 124.52182
Best fitness: 241.85681 - size: (26, 50) - species 5 - id 153527
Average adjusted fitness: 0.444
Mean genetic distance 2.583, standard deviation 0.706
Population of 250 members in 2 species:
       age size fitness adj fit stag
```

```
====
           ====
                 ======
                         ======
    5 184
             121
                   241.9
                            0.436
                                   138
                   217.7
        14
            129
                            0.451
                                     6
    6
Total extinctions: 0
Generation time: 15.369 sec (15.418 average)
 ***** Running generation 667 *****
Population's average fitness: 34.39836 stdev: 130.33737
Best fitness: 260.48633 - size: (21, 34) - species 6 - id 153354
Average adjusted fitness: 0.497
Mean genetic distance 2.432, standard deviation 0.714
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
           125 258.5
    5 185
                            0.510
                                  139
                   260.5 0.483
    6
       15
            125
Total extinctions: 0
Generation time: 16.156 sec (15.494 average)
***** Running generation 668 *****
Population's average fitness: 9.70174 stdev: 121.47633
Best fitness: 241.14641 - size: (25, 39) - species 5 - id 153241
Average adjusted fitness: 0.378
Mean genetic distance 2.437, standard deviation 0.716
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 186 122 241.1 0.360 140
       16 128 232.6 0.397
    6
                                     1
Total extinctions: 0
Generation time: 14.619 sec (15.511 average)
***** Running generation 669 *****
Population's average fitness: 19.56163 stdev: 124.27390
Best fitness: 252.62213 - size: (26, 49) - species 5 - id 154157
Average adjusted fitness: 0.425
Mean genetic distance 2.434, standard deviation 0.712
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
       === ==== ===== ====
    5 187 121 252.6
                            0.412 141
    6
       17
            129
                   236.2
                            0.438
Total extinctions: 0
Generation time: 15.623 sec (15.481 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-669
 ***** Running generation 670 *****
Population's average fitness: 14.99070 stdev: 123.56933
Best fitness: 248.66565 - size: (25, 40) - species 5 - id 154445
Average adjusted fitness: 0.412
Mean genetic distance 2.498, standard deviation 0.658
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 188
            122 248.7
                            0.399
                                  142
```

```
18
            128
                   242.5
                           0.424
Total extinctions: 0
Generation time: 15.632 sec (15.477 average)
***** Running generation 671 *****
Population's average fitness: 27.74065 stdev: 125.10297
Best fitness: 246.95037 - size: (26, 49) - species 5 - id 154157
Average adjusted fitness: 0.426
Mean genetic distance 2.570, standard deviation 0.677
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== =====
    5 189
           121 247.0
                           0.414
                                   143
      19 129 243.3 0.439 4
Total extinctions: 0
Generation time: 16.072 sec (15.635 average)
***** Running generation 672 *****
Population's average fitness: 17.39136 stdev: 120.82187
Best fitness: 262.39752 - size: (24, 36) - species 5 - id 154885
Average adjusted fitness: 0.386
Mean genetic distance 2.615, standard deviation 0.728
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
           123
                         0.385
    5 190
                  262.4
                                   144
       20
           127 255.5
                           0.388
    6
Total extinctions: 0
Generation time: 15.310 sec (15.708 average)
***** Running generation 673 *****
Population's average fitness: 25.73870 stdev: 126.50973
Best fitness: 270.67765 - size: (26, 40) - species 5 - id 154892
Average adjusted fitness: 0.396
Mean genetic distance 2.566, standard deviation 0.784
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ---- --- ---- -----
    5 191 125 270.7 0.405 145
                   217.7
       21
            125
                           0.388
Total extinctions: 0
Generation time: 15.559 sec (15.598 average)
 ***** Running generation 674 *****
Population's average fitness: 23.35279 stdev: 124.57801
Best fitness: 258.84573 - size: (26, 53) - species 5 - id 155369
Average adjusted fitness: 0.414
Mean genetic distance 2.537, standard deviation 0.776
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    5 192 122 258.8 0.393 146
            128
                   245.9
                           0.434
    6
       22
Total extinctions: 0
Generation time: 15.544 sec (15.568 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
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```
Exp2NEAT
walker_Run1\neat-checkpoint-674
 ***** Running generation 675 *****
Population's average fitness: 23.45992 stdev: 127.74126
Best fitness: 278.07262 - size: (26, 51) - species 5 - id 155595
Average adjusted fitness: 0.400
Mean genetic distance 2.565, standard deviation 0.778
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 193 121 278.1 0.386 147
       23 129 228.4
    6
                            0.415
Total extinctions: 0
Generation time: 15.510 sec (15.539 average)
***** Running generation 676 *****
Population's average fitness: 11.35102 stdev: 121.67455
Best fitness: 274.14590 - size: (26, 51) - species 5 - id 155595
Average adjusted fitness: 0.381
Mean genetic distance 2.603, standard deviation 0.739
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
 ==== === ===== ===== ====
    5 194
           123 274.1 0.381 148
    6
       24 127 225.7
                            0.380
Total extinctions: 0
Generation time: 15.154 sec (15.518 average)
 ***** Running generation 677 *****
Population's average fitness: 24.21712 stdev: 120.78890
Best fitness: 257.15828 - size: (26, 50) - species 5 - id 155753
Average adjusted fitness: 0.482
Mean genetic distance 2.576, standard deviation 0.761
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
  ==== === ===== ===== ====
    5
      195
           124
                 257.2
                            0.482 149
       25
           126
                   242.7
                            0.482
    6
Total extinctions: 0
Generation time: 16.297 sec (15.532 average)
 ***** Running generation 678 *****
Population's average fitness: 11.19885 stdev: 126.59725
Best fitness: 265.28943 - size: (27, 55) - species 5 - id 156046
Average adjusted fitness: 0.398
Mean genetic distance 2.571, standard deviation 0.726
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5
      196
            120
                   265.3
                            0.370
                                   150
    6
            130
                   232.5
                            0.426
        26
```

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Total extinctions: 0

Generation time: 14.539 sec (15.524 average)

***** Running generation 679 *****

```
Population's average fitness: 26.71412 stdev: 127.99763
Best fitness: 258.02341 - size: (26, 50) - species 5 - id 155753
Average adjusted fitness: 0.448
Mean genetic distance 2.602, standard deviation 0.643
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 197 119 258.0
                            0.429
                                  151
       27 131
                   232.1
                            0.467
                                    12
    6
Total extinctions: 0
Generation time: 15.048 sec (15.467 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-679
 ***** Running generation 680 *****
Population's average fitness: 16.98896 stdev: 125.26300
Best fitness: 276.68466 - size: (28, 51) - species 5 - id 156742
Average adjusted fitness: 0.374
Mean genetic distance 2.555, standard deviation 0.688
Population of 250 members in 2 species:
       age size fitness adj fit stag
 5 198 120
                            0.364
                   276.7
                                   152
    6
        28
           130
                   232.1
                            0.383
                                    13
Total extinctions: 0
Generation time: 15.096 sec (15.413 average)
 ***** Running generation 681 *****
Population's average fitness: 23.76757 stdev: 123.33183
Best fitness: 244.55670 - size: (25, 42) - species 5 - id 156934
Average adjusted fitness: 0.439
Mean genetic distance 2.569, standard deviation 0.663
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 199 122
                   244.6
                            0.436
                                  153
    6
       29 128
                   224.5
                            0.442
                                    14
Total extinctions: 0
Generation time: 15.238 sec (15.330 average)
***** Running generation 682 *****
Population's average fitness: 35.30754 stdev: 125.36994
Best fitness: 253.32879 - size: (24, 35) - species 6 - id 157096
Average adjusted fitness: 0.494
Mean genetic distance 2.606, standard deviation 0.636
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 200 123
                   251.9
                            0.484
                                   154
    6
       30 127
                   253.3
                            0.504
                                    15
Total extinctions: 0
Generation time: 16.151 sec (15.414 average)
 ***** Running generation 683 *****
Population's average fitness: 19.43295 stdev: 126.79311
Best fitness: 244.70904 - size: (27, 51) - species 5 - id 157317
```

```
Average adjusted fitness: 0.424
Mean genetic distance 2.649, standard deviation 0.618
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 201
                   244.7
             122
                            0.417
                                   155
       31
           128 237.7 0.431
    6
                                    16
Total extinctions: 0
Generation time: 15.409 sec (15.399 average)
***** Running generation 684 *****
Population's average fitness: 17.62198 stdev: 121.15642
Best fitness: 250.72361 - size: (26, 44) - species 5 - id 157662
Average adjusted fitness: 0.397
Mean genetic distance 2.694, standard deviation 0.595
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    5 202 117
                 250.7 0.354 156
       32
           133
                   233.2
                            0.440
                                    17
    6
Total extinctions: 0
Generation time: 15.564 sec (15.401 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-684
***** Running generation 685 *****
Population's average fitness: 25.84765 stdev: 126.19430
Best fitness: 252.47885 - size: (27, 54) - species 5 - id 157816
Average adjusted fitness: 0.426
Mean genetic distance 2.735, standard deviation 0.591
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
           121
    5 203
                   252.5
                            0.428
                                   157
    6
       33 129 237.8
                            0.424 18
Total extinctions: 0
Generation time: 15.635 sec (15.413 average)
***** Running generation 686 *****
Population's average fitness: 15.77446 stdev: 122.95267
Best fitness: 277.05332 - size: (27, 54) - species 5 - id 158112
Average adjusted fitness: 0.359
Mean genetic distance 2.688, standard deviation 0.646
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                   277.1
    5 204
             116
                            0.319
                                   158
            134
                 243.6
                            0.400
    6
       34
                                  19
Total extinctions: 0
Generation time: 15.544 sec (15.452 average)
***** Running generation 687 *****
Population's average fitness: 28.28897 stdev: 129.61882
Best fitness: 250.00137 - size: (26, 47) - species 5 - id 158274
Average adjusted fitness: 0.457
Mean genetic distance 2.644, standard deviation 0.703
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 205
           119 250.0 0.444 159
    6 35
           131 245.9 0.470 20
Total extinctions: 0
Generation time: 15.348 sec (15.357 average)
***** Running generation 688 *****
Population's average fitness: 25.31900 stdev: 126.58507
Best fitness: 258.90586 - size: (26, 48) - species 5 - id 158350
Average adjusted fitness: 0.468
Mean genetic distance 2.635, standard deviation 0.730
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 206
           121 258.9
                         0.459
                                  160
    6 36 129 254.7 0.478 21
Total extinctions: 0
Generation time: 15.459 sec (15.449 average)
 ***** Running generation 689 *****
Population's average fitness: 26.55893 stdev: 119.67808
Best fitness: 263.19932 - size: (25, 40) - species 5 - id 158595
Average adjusted fitness: 0.431
Mean genetic distance 2.665, standard deviation 0.693
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    5 207
           123
                   263.2
                           0.434
                   224.0
       37
           127
                           0.428
    6
Total extinctions: 0
Generation time: 16.224 sec (15.567 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-689
***** Running generation 690 *****
Population's average fitness: 27.93232 stdev: 125.58105
Best fitness: 246.04446 - size: (25, 48) - species 5 - id 157304
Average adjusted fitness: 0.438
Mean genetic distance 2.638, standard deviation 0.720
Population of 250 members in 2 species:
       age size fitness adj fit stag
      === ==== ===== ====
           116 246.0 0.385 162
    5 208
       38
           134
                 243.2
                           0.491
                                   23
    6
Total extinctions: 0
Generation time: 16.389 sec (15.696 average)
***** Running generation 691 *****
Population's average fitness: 35.44742 stdev: 120.87661
Best fitness: 243.23705 - size: (23, 38) - species 6 - id 158871
Average adjusted fitness: 0.438
Mean genetic distance 2.653, standard deviation 0.732
Population of 250 members in 2 species:
       age size fitness adj fit stag
```

```
====
       ===
           ====
                209
            119
                   238.3
                         0.428
                                   163
                   243.2
        39
            131
                           0.449
                                    24
    6
Total extinctions: 0
Generation time: 16.397 sec (15.812 average)
 ***** Running generation 692 *****
Population's average fitness: 22.34415 stdev: 127.32165
Best fitness: 260.12804 - size: (28, 48) - species 5 - id 159314
Average adjusted fitness: 0.433
Mean genetic distance 2.683, standard deviation 0.756
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 210
           120 260.1 0.412 164
                   238.2 0.453
    6
       40
           130
                                  25
Total extinctions: 0
Generation time: 15.572 sec (15.754 average)
***** Running generation 693 *****
Population's average fitness: 21.17957 stdev: 129.30528
Best fitness: 268.63259 - size: (28, 50) - species 5 - id 159697
Average adjusted fitness: 0.398
Mean genetic distance 2.737, standard deviation 0.736
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 211 128 268.6 0.430 165
       41 122 234.0 0.366 26
    6
Total extinctions: 0
Generation time: 15.121 sec (15.725 average)
***** Running generation 694 *****
Population's average fitness: 19.62462 stdev: 129.96207
Best fitness: 265.93967 - size: (29, 49) - species 5 - id 159325
Average adjusted fitness: 0.394
Mean genetic distance 2.672, standard deviation 0.734
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
      === ==== ===== ====
    5 212 122 265.9 0.363
                                 166
                   249.4
    6
       42
            128
                           0.425
                                   27
Total extinctions: 0
Generation time: 14.750 sec (15.644 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-694
 ***** Running generation 695 *****
Population's average fitness: 44.36643 stdev: 124.81558
Best fitness: 249.53523 - size: (22, 35) - species 6 - id 160004
Average adjusted fitness: 0.469
Mean genetic distance 2.651, standard deviation 0.702
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 213
           121 246.3
                           0.447
                                 167
```

```
43
            129
                   249.5
                            0.490
Total extinctions: 0
Generation time: 17.186 sec (15.799 average)
***** Running generation 696 *****
Population's average fitness: 26.88482 stdev: 128.00109
Best fitness: 270.07957 - size: (25, 42) - species 5 - id 160302
Average adjusted fitness: 0.404
Mean genetic distance 2.556, standard deviation 0.753
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    5 214
           123 270.1
                           0.405
                                   168
       44 127 236.0 0.404 29
Total extinctions: 0
Generation time: 15.486 sec (15.793 average)
***** Running generation 697 *****
Population's average fitness: 26.31521 stdev: 129.57196
Best fitness: 259.83341 - size: (28, 51) - species 5 - id 160588
Average adjusted fitness: 0.453
Mean genetic distance 2.565, standard deviation 0.754
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    5 215
           122
                  259.8
                           0.437
                                   169
    6
       45
           128 239.2 0.470
Total extinctions: 0
Generation time: 15.737 sec (15.832 average)
***** Running generation 698 *****
Population's average fitness: 36.65193 stdev: 132.94327
Best fitness: 288.51539 - size: (25, 41) - species 5 - id 160586
Average adjusted fitness: 0.396
Mean genetic distance 2.578, standard deviation 0.729
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
    5 216 123 288.5 0.396
                   233.6
                            0.396
       46
            127
Total extinctions: 0
Generation time: 15.354 sec (15.822 average)
 ***** Running generation 699 *****
Population's average fitness: 27.82668 stdev: 128.00833
Best fitness: 257.06439 - size: (26, 44) - species 5 - id 160135
Average adjusted fitness: 0.415
Mean genetic distance 2.560, standard deviation 0.694
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    5 217 124 257.1 0.413
                                    1
       47
            126
                   234.7
                            0.418
    6
Total extinctions: 0
Generation time: 15.309 sec (15.730 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
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walker_Run1\neat-checkpoint-699
```

```
***** Running generation 700 *****
```

Population's average fitness: 21.65008 stdev: 127.86878

Best fitness: 255.03299 - size: (25, 39) - species 5 - id 160821

Average adjusted fitness: 0.416

Mean genetic distance 2.508, standard deviation 0.811

Population of 250 members in 2 species:

Total extinctions: 0

Generation time: 15.116 sec (15.603 average)

***** Running generation 701 *****

Population's average fitness: 34.23502 stdev: 122.24751

Best fitness: 238.10762 - size: (23, 36) - species 6 - id 161408

Average adjusted fitness: 0.476

Mean genetic distance 2.590, standard deviation 0.724

Population of 250 members in 2 species:

Total extinctions: 0

Generation time: 16.969 sec (15.660 average)

***** Running generation 702 *****

Population's average fitness: 27.95575 stdev: 127.03452

Best fitness: 267.99296 - size: (25, 37) - species 5 - id 161049

Average adjusted fitness: 0.427

Mean genetic distance 2.626, standard deviation 0.685

Population of 250 members in 2 species:

Total extinctions: 0

Generation time: 16.393 sec (15.742 average)

***** Running generation 703 *****

Population's average fitness: 27.85746 stdev: 130.65414

Best fitness: 265.85496 - size: (24, 35) - species 6 - id 161900

Average adjusted fitness: 0.396

Mean genetic distance 2.602, standard deviation 0.682

Population of 250 members in 2 species:

Total extinctions: 0

Generation time: 15.382 sec (15.768 average)

^{*****} Running generation 704 *****

```
Population's average fitness: 40.70592 stdev: 130.15287
Best fitness: 280.59512 - size: (24, 40) - species 5 - id 161983
Average adjusted fitness: 0.415
Mean genetic distance 2.665, standard deviation 0.707
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 222 126 280.6
                            0.424
    6
       52 124
                   229.9
                            0.406
                                     1
Total extinctions: 0
Generation time: 16.731 sec (15.966 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-704
 ***** Running generation 705 *****
Population's average fitness: 19.63697 stdev: 124.39361
Best fitness: 277.01058 - size: (24, 39) - species 5 - id 162514
Average adjusted fitness: 0.387
Mean genetic distance 2.658, standard deviation 0.764
Population of 250 members in 2 species:
       age size fitness adj fit stag
 5 223 127
                            0.394
                                     7
                   277.0
    6
       53 123
                   232.1
                            0.380
Total extinctions: 0
Generation time: 15.209 sec (15.769 average)
 ***** Running generation 706 *****
Population's average fitness: 24.61593 stdev: 127.37741
Best fitness: 248.53456 - size: (23, 40) - species 5 - id 162454
Average adjusted fitness: 0.406
Mean genetic distance 2.611, standard deviation 0.741
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 224 122
                   248.5
                            0.378
                                     8
    6
       54 128
                   230.5
                            0.434
                                     3
Total extinctions: 0
Generation time: 15.848 sec (15.805 average)
***** Running generation 707 *****
Population's average fitness: 24.04681 stdev: 127.67040
Best fitness: 254.60149 - size: (24, 41) - species 5 - id 162954
Average adjusted fitness: 0.424
Mean genetic distance 2.599, standard deviation 0.779
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 225 117
                   254.6
                            0.382
    6
       55 133
                   248.6
                            0.466
                                     4
Total extinctions: 0
Generation time: 15.712 sec (15.802 average)
***** Running generation 708 *****
Population's average fitness: 33.34739 stdev: 127.43923
Best fitness: 270.20154 - size: (20, 31) - species 6 - id 162986
```

```
Average adjusted fitness: 0.423
Mean genetic distance 2.656, standard deviation 0.748
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    5 226
                   251.9
             120
                            0.418
           130 270.2
                            0.429
    6
       56
                                     a
Total extinctions: 0
Generation time: 15.690 sec (15.836 average)
***** Running generation 709 *****
Population's average fitness: 26.32744 stdev: 129.34457
Best fitness: 248.93676 - size: (19, 33) - species 6 - id 163333
Average adjusted fitness: 0.436
Mean genetic distance 2.614, standard deviation 0.775
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ===== ===== ====
    5 227 121 245.4 0.429
                                    11
            129
       57
                   248.9
                            0.444
    6
Total extinctions: 0
Generation time: 15.398 sec (15.845 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-709
***** Running generation 710 *****
Population's average fitness: 18.90131 stdev: 127.13788
Best fitness: 250.84237 - size: (25, 39) - species 5 - id 163485
Average adjusted fitness: 0.409
Mean genetic distance 2.584, standard deviation 0.740
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
            129
    5 228
                   250.8
                            0.446
                                     12
    6
       58 121 230.6
                            0.371
                                     2
Total extinctions: 0
Generation time: 15.193 sec (15.853 average)
***** Running generation 711 *****
Population's average fitness: 7.83094 stdev: 124.28823
Best fitness: 251.46519 - size: (22, 36) - species 6 - id 163642
Average adjusted fitness: 0.385
Mean genetic distance 2.723, standard deviation 0.690
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    5 229
             126
                   230.5
                            0.379
                                     13
            124
                 251.5
    6
       59
                            0.390
                                     3
Total extinctions: 0
Generation time: 14.244 sec (15.580 average)
***** Running generation 712 *****
Population's average fitness: 19.41595 stdev: 128.34811
Best fitness: 247.55168 - size: (19, 34) - species 6 - id 163600
Average adjusted fitness: 0.393
Mean genetic distance 2.719, standard deviation 0.723
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 230
           123 245.4 0.378 14
    6 60
           127 247.6
                           0.408
Total extinctions: 0
Generation time: 14.866 sec (15.427 average)
***** Running generation 713 *****
Population's average fitness: 27.06437 stdev: 131.17544
Best fitness: 246.72973 - size: (22, 37) - species 6 - id 164339
Average adjusted fitness: 0.497
Mean genetic distance 2.650, standard deviation 0.748
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 231
           125
                 241.4 0.507
                                  15
    6 61 125 246.7 0.486
Total extinctions: 0
Generation time: 15.259 sec (15.415 average)
 ***** Running generation 714 *****
Population's average fitness: 15.69707 stdev: 128.51876
Best fitness: 243.87070 - size: (25, 38) - species 5 - id 164373
Average adjusted fitness: 0.413
Mean genetic distance 2.693, standard deviation 0.714
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    5 232 124
                   243.9
                           0.408
                   241.1
       62
            126
                           0.418
    6
Total extinctions: 0
Generation time: 14.604 sec (15.202 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-714
***** Running generation 715 *****
Population's average fitness: 17.55917 stdev: 127.51112
Best fitness: 249.83976 - size: (27, 48) - species 5 - id 164172
Average adjusted fitness: 0.415
Mean genetic distance 2.724, standard deviation 0.718
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
           119 249.8 0.381 17
    5 233
       63
           131
                 238.6
                           0.448
    6
Total extinctions: 0
Generation time: 15.613 sec (15.243 average)
***** Running generation 716 *****
Population's average fitness: 18.29753 stdev: 132.46941
Best fitness: 249.93275 - size: (18, 28) - species 6 - id 164854
Average adjusted fitness: 0.439
Mean genetic distance 2.733, standard deviation 0.723
Population of 250 members in 2 species:
       age size fitness adj fit stag
```

```
====
           ====
                 ======
       234
            123
                   243.1
                            0.450
                                    18
        64
            127
                   249.9
                            0.429
                                     8
    6
Total extinctions: 0
Generation time: 14.556 sec (15.113 average)
 ***** Running generation 717 *****
Population's average fitness: 12.30935 stdev: 128.77355
Best fitness: 250.97334 - size: (21, 33) - species 6 - id 165235
Average adjusted fitness: 0.418
Mean genetic distance 2.711, standard deviation 0.657
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 235
           117
                 238.6
                            0.370
                                    19
                   251.0 0.466
    6
       65
            133
Total extinctions: 0
Generation time: 14.802 sec (15.022 average)
***** Running generation 718 *****
Population's average fitness: 19.90056 stdev: 125.47678
Best fitness: 252.86834 - size: (27, 48) - species 5 - id 164172
Average adjusted fitness: 0.405
Mean genetic distance 2.726, standard deviation 0.730
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 236 116 252.9 0.370
                                    20
       66 134 235.9 0.440
    6
                                    10
Total extinctions: 0
Generation time: 15.299 sec (14.983 average)
***** Running generation 719 *****
Population's average fitness: 22.75343 stdev: 125.67499
Best fitness: 247.99746 - size: (24, 43) - species 5 - id 165283
Average adjusted fitness: 0.426
Mean genetic distance 2.699, standard deviation 0.743
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
       === ==== ===== ====
    5 237 115 248.0
                            0.388
                                    21
                   240.2
    6
       67
            135
                            0.463
Total extinctions: 0
Generation time: 15.377 sec (14.981 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-719
 ***** Running generation 720 *****
Population's average fitness: 27.02834 stdev: 127.70571
Best fitness: 259.60733 - size: (22, 32) - species 6 - id 165768
Average adjusted fitness: 0.404
Mean genetic distance 2.723, standard deviation 0.725
Population of 250 members in 2 species:
       age size fitness adj fit stag
       === ==== ===== ====
 ====
    5 238
            117
                 244.3
                            0.386
                                    22
```

```
68
           133
                   259.6
                           0.421
Total extinctions: 0
Generation time: 15.781 sec (15.040 average)
***** Running generation 721 *****
Population's average fitness: 19.78666 stdev: 124.49254
Best fitness: 236.98583 - size: (26, 45) - species 5 - id 165870
Average adjusted fitness: 0.472
Mean genetic distance 2.645, standard deviation 0.738
Population of 250 members in 2 species:
       age size fitness adj fit stag
           5 239
           121 237.0
                           0.469
                                    23
       69 129 227.1 0.475
                                    13
Total extinctions: 0
Generation time: 15.478 sec (15.163 average)
***** Running generation 722 *****
Population's average fitness: 28.26559 stdev: 129.80289
Best fitness: 263.48019 - size: (24, 43) - species 5 - id 165283
Average adjusted fitness: 0.398
Mean genetic distance 2.721, standard deviation 0.695
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    5 240
           120
                  263.5
                          0.383
                                    24
    6
       70
           130
                 244.7
                           0.414
Total extinctions: 0
Generation time: 16.083 sec (15.285 average)
***** Running generation 723 *****
Population's average fitness: 28.39607 stdev: 126.79513
Best fitness: 253.33411 - size: (24, 41) - species 5 - id 166379
Average adjusted fitness: 0.441
Mean genetic distance 2.681, standard deviation 0.712
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
    5 241 122 253.3 0.439
                                   25
                   243.9
                           0.444
       71
            128
Total extinctions: 0
Generation time: 15.826 sec (15.342 average)
 ***** Running generation 724 *****
Population's average fitness: 30.99483 stdev: 126.23945
Best fitness: 255.45776 - size: (24, 44) - species 5 - id 166345
Average adjusted fitness: 0.441
Mean genetic distance 2.581, standard deviation 0.767
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== ==== ====== ===== ====
    5 242 126 255.5 0.458 26
            124
       72
                 244.0
                           0.425
    6
Total extinctions: 0
Generation time: 16.015 sec (15.483 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
```

08.11.24, 17:00

Exp2NEAT walker_Run1\neat-checkpoint-724 ***** Running generation 725 ***** Population's average fitness: 35.70466 stdev: 129.88213 Best fitness: 264.33408 - size: (23, 38) - species 6 - id 166974 Average adjusted fitness: 0.438 Mean genetic distance 2.455, standard deviation 0.917 Population of 250 members in 2 species: age size fitness adj fit stag ==== === ====== ===== ==== 5 243 123 250.0 0.418 27 73 127 264.3 6 0.458 17 Total extinctions: 0 Generation time: 15.668 sec (15.488 average) ***** Running generation 726 ***** Population's average fitness: 30.19424 stdev: 129.14240 Best fitness: 246.49756 - size: (26, 51) - species 5 - id 167130 Average adjusted fitness: 0.459 Mean genetic distance 2.509, standard deviation 0.876 Population of 250 members in 2 species: age size fitness adj fit stag ID ==== === ===== ===== ==== 5 244 116 246.5 0.403 28 6 74 134 245.9 0.515 Total extinctions: 0 Generation time: 15.909 sec (15.624 average) ***** Running generation 727 ***** Population's average fitness: 24.82639 stdev: 126.02530 Best fitness: 264.10673 - size: (26, 49) - species 5 - id 167498 Average adjusted fitness: 0.421 Mean genetic distance 2.457, standard deviation 0.890 Population of 250 members in 2 species: age size fitness adj fit stag ID ==== === ===== ===== ==== 5 245 264.1 0.422 29 121 75 129 236.5 0.421 6 Total extinctions: 0 Generation time: 15.981 sec (15.742 average) ***** Running generation 728 ***** Population's average fitness: 26.03601 stdev: 128.56263 Best fitness: 250.87538 - size: (25, 46) - species 5 - id 167149 Average adjusted fitness: 0.418 Mean genetic distance 2.413, standard deviation 0.860 Population of 250 members in 2 species:

age size fitness adj fit stag ==== === ===== ===== ==== 5 246 250.9 0.374 30 116 6 76 134 244.2 0.461

Total extinctions: 0

Generation time: 15.582 sec (15.770 average)

***** Running generation 729 *****

```
Population's average fitness: 37.45023 stdev: 131.13991
Best fitness: 257.51080 - size: (23, 42) - species 6 - id 167912
Average adjusted fitness: 0.435
Mean genetic distance 2.474, standard deviation 0.828
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 247
           117
                 254.8
                            0.406
    6
       77 133
                   257.5
                            0.464
                                    21
Total extinctions: 0
Generation time: 16.490 sec (15.881 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-729
 ***** Running generation 730 *****
Population's average fitness: 24.22459 stdev: 133.04032
Best fitness: 258.79921 - size: (22, 37) - species 6 - id 167932
Average adjusted fitness: 0.440
Mean genetic distance 2.458, standard deviation 0.811
Population of 250 members in 2 species:
       age size fitness adj fit stag
 5 248 119
                   254.9
                            0.426
                                    32
    6
       78
           131
                   258.8
                            0.453
                                    22
Total extinctions: 0
Generation time: 16.019 sec (15.905 average)
 ***** Running generation 731 *****
Population's average fitness: 42.77191 stdev: 125.89663
Best fitness: 255.22418 - size: (25, 50) - species 5 - id 168042
Average adjusted fitness: 0.507
Mean genetic distance 2.510, standard deviation 0.780
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 249 120
                            0.494
                                    33
                   255.2
    6
       79 130
                   250.0
                            0.519
                                    23
Total extinctions: 0
Generation time: 17.213 sec (16.079 average)
***** Running generation 732 *****
Population's average fitness: 36.34925 stdev: 129.12551
Best fitness: 277.90220 - size: (23, 42) - species 6 - id 167912
Average adjusted fitness: 0.422
Mean genetic distance 2.486, standard deviation 0.864
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 250 126
                   250.7
                            0.445
                                    34
    6
       80 124
                   277.9
                            0.399
Total extinctions: 0
Generation time: 16.817 sec (16.152 average)
***** Running generation 733 *****
Population's average fitness: 31.55890 stdev: 131.43789
Best fitness: 255.24974 - size: (23, 41) - species 6 - id 168241
```

```
Average adjusted fitness: 0.440
Mean genetic distance 2.488, standard deviation 0.876
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 251
                   255.2
             129
                            0.465
           121 255.2
                            0.414
    6
       81
                                     1
Total extinctions: 0
Generation time: 16.383 sec (16.208 average)
***** Running generation 734 *****
Population's average fitness: 41.67644 stdev: 130.70470
Best fitness: 247.88014 - size: (22, 38) - species 6 - id 169098
Average adjusted fitness: 0.472
Mean genetic distance 2.461, standard deviation 0.902
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 252 124 243.3 0.453
                                    36
       82
           126
                 247.9
                            0.491
    6
Total extinctions: 0
Generation time: 16.523 sec (16.258 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-734
***** Running generation 735 *****
Population's average fitness: 21.20518 stdev: 127.85246
Best fitness: 252.01159 - size: (27, 46) - species 5 - id 169264
Average adjusted fitness: 0.405
Mean genetic distance 2.483, standard deviation 0.883
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
           123
    5 253
                   252.0
                            0.393
                                     37
    6
       83 127 236.2
                            0.417
                                    3
Total extinctions: 0
Generation time: 15.712 sec (16.263 average)
***** Running generation 736 *****
Population's average fitness: 28.03043 stdev: 130.55453
Best fitness: 254.34401 - size: (23, 37) - species 6 - id 169344
Average adjusted fitness: 0.439
Mean genetic distance 2.486, standard deviation 0.872
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                   247.5
    5 254
             124
                            0.443
            126 254.3
                            0.436
    6
       84
Total extinctions: 0
Generation time: 15.841 sec (16.256 average)
***** Running generation 737 *****
Population's average fitness: 40.09016 stdev: 128.05285
Best fitness: 255.07261 - size: (25, 46) - species 6 - id 169806
Average adjusted fitness: 0.471
Mean genetic distance 2.526, standard deviation 0.837
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 255
           128 250.8 0.499 39
    6 85
           122 255.1 0.442
Total extinctions: 0
Generation time: 16.927 sec (16.351 average)
***** Running generation 738 *****
Population's average fitness: 30.30319 stdev: 130.63814
Best fitness: 256.98769 - size: (27, 47) - species 6 - id 170086
Average adjusted fitness: 0.438
Mean genetic distance 2.539, standard deviation 0.799
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 256
           129 253.1 0.458
                                  40
           121 257.0 0.418
    6 86
Total extinctions: 0
Generation time: 16.250 sec (16.417 average)
 ***** Running generation 739 *****
Population's average fitness: 22.68305 stdev: 126.84278
Best fitness: 267.17849 - size: (26, 50) - species 5 - id 169705
Average adjusted fitness: 0.387
Mean genetic distance 2.551, standard deviation 0.827
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
    5 257
           132
                  267.2
                           0.420
                   236.9
                           0.353
       87
            118
    6
Total extinctions: 0
Generation time: 15.612 sec (16.330 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-739
***** Running generation 740 *****
Population's average fitness: 32.27125 stdev: 124.70928
Best fitness: 252.42327 - size: (25, 47) - species 5 - id 170556
Average adjusted fitness: 0.433
Mean genetic distance 2.654, standard deviation 0.698
Population of 250 members in 2 species:
       age size fitness adj fit stag
      === ==== ===== ====
    5 258 134 252.4 0.468 42
       88
           116
                 234.5
                           0.398
    6
Total extinctions: 0
Generation time: 17.070 sec (16.435 average)
***** Running generation 741 *****
Population's average fitness: 28.89508 stdev: 126.68791
Best fitness: 278.56776 - size: (25, 50) - species 5 - id 170754
Average adjusted fitness: 0.402
Mean genetic distance 2.623, standard deviation 0.727
Population of 250 members in 2 species:
       age size fitness adj fit stag
```

```
====
           ====
                 ======= ======
       259
            131
                   278.6
                            0.410
                                    43
                   242.1
        89
            119
                            0.394
    6
Total extinctions: 0
Generation time: 16.496 sec (16.363 average)
 ***** Running generation 742 *****
Population's average fitness: 39.44323 stdev: 123.90226
Best fitness: 262.80688 - size: (24, 42) - species 5 - id 170994
Average adjusted fitness: 0.432
Mean genetic distance 2.596, standard deviation 0.782
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 260
           128 262.8 0.434
                                    44
                 231.3 0.430
    6
       90
           122
                                    10
Total extinctions: 0
Generation time: 17.317 sec (16.413 average)
***** Running generation 743 *****
Population's average fitness: 38.12290 stdev: 128.67013
Best fitness: 281.01622 - size: (22, 40) - species 5 - id 171166
Average adjusted fitness: 0.420
Mean genetic distance 2.588, standard deviation 0.854
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 261 129 281.0 0.434
                                    45
       91 121 225.8 0.407
    6
                                    11
Total extinctions: 0
Generation time: 16.730 sec (16.448 average)
***** Running generation 744 *****
Population's average fitness: 35.04834 stdev: 127.03329
Best fitness: 264.35613 - size: (26, 47) - species 5 - id 171234
Average adjusted fitness: 0.444
Mean genetic distance 2.579, standard deviation 0.867
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
       === ==== ===== ====
    5 262 123 264.4
                            0.418
                                    46
                   230.7
    6
       92
           127
                            0.470
                                    12
Total extinctions: 0
Generation time: 16.725 sec (16.468 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-744
 ***** Running generation 745 *****
Population's average fitness: 22.27487 stdev: 127.65247
Best fitness: 242.24302 - size: (24, 40) - species 5 - id 171699
Average adjusted fitness: 0.443
Mean genetic distance 2.611, standard deviation 0.870
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 263
            124
                 242.2
                            0.440
                                    47
```

```
93
           126
                   233.2
                           0.447
Total extinctions: 0
Generation time: 16.447 sec (16.542 average)
***** Running generation 746 *****
Population's average fitness: 23.37766 stdev: 127.24831
Best fitness: 260.07831 - size: (26, 46) - species 5 - id 171397
Average adjusted fitness: 0.431
Mean genetic distance 2.597, standard deviation 0.844
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== =====
    5 264
           122 260.1
                           0.411
           128 243.2 0.450 14
       94
Total extinctions: 0
Generation time: 16.348 sec (16.592 average)
***** Running generation 747 *****
Population's average fitness: 21.18892 stdev: 128.24587
Best fitness: 253.12146 - size: (24, 40) - species 5 - id 172137
Average adjusted fitness: 0.399
Mean genetic distance 2.608, standard deviation 0.823
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
                         0.387
    5 265
           121
                  253.1
                                    49
       95
           129 240.1 0.412
    6
Total extinctions: 0
Generation time: 15.336 sec (16.433 average)
***** Running generation 748 *****
Population's average fitness: 20.13361 stdev: 126.76404
Best fitness: 251.90066 - size: (24, 46) - species 5 - id 171623
Average adjusted fitness: 0.413
Mean genetic distance 2.560, standard deviation 0.863
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ---- --- ---- -----
    5 266 122 251.9 0.404
                                    50
                   251.0
       96
            128
                           0.422
Total extinctions: 0
Generation time: 15.268 sec (16.335 average)
 ***** Running generation 749 *****
Population's average fitness: 18.97923 stdev: 126.70713
Best fitness: 240.28291 - size: (25, 44) - species 5 - id 172604
Average adjusted fitness: 0.456
Mean genetic distance 2.616, standard deviation 0.816
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== ==== ====== ===== ====
    5 267 124 240.3 0.460 51
       97
                   223.9
                           0.452
    6
            126
Total extinctions: 0
Generation time: 15.519 sec (16.326 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
```

walker_Run1\neat-checkpoint-749

```
***** Running generation 750 *****
```

Population's average fitness: 28.02173 stdev: 130.15913

Best fitness: 258.20323 - size: (25, 47) - species 5 - id 172774

Average adjusted fitness: 0.442

Mean genetic distance 2.693, standard deviation 0.818

Population of 250 members in 2 species:

```
ID age size fitness adj fit stag
=== == === ==== ==== ==== ====
5 268 126 258.2 0.456 52
6 98 124 228.9 0.429 18
```

Total extinctions: 0

Generation time: 15.956 sec (16.214 average)

***** Running generation 751 *****

Population's average fitness: 19.51946 stdev: 126.06315

Best fitness: 258.32479 - size: (23, 43) - species 5 - id 173066

Average adjusted fitness: 0.405

Mean genetic distance 2.689, standard deviation 0.820

Population of 250 members in 2 species:

Total extinctions: 0

Generation time: 15.629 sec (16.128 average)

***** Running generation 752 *****

Population's average fitness: 28.07307 stdev: 127.44064

Best fitness: 274.02777 - size: (23, 33) - species 5 - id 173088

Average adjusted fitness: 0.410

Mean genetic distance 2.697, standard deviation 0.802

Population of 250 members in 2 species:

Total extinctions: 0

Generation time: 15.866 sec (15.982 average)

***** Running generation 753 *****

Population's average fitness: 35.13265 stdev: 128.79209

Best fitness: 278.21703 - size: (23, 39) - species 5 - id 173065

Average adjusted fitness: 0.416

Mean genetic distance 2.706, standard deviation 0.803

Population of 250 members in 2 species:

Total extinctions: 0

Generation time: 16.077 sec (15.917 average)

***** Running generation 754 *****

```
Population's average fitness: 14.79512 stdev: 128.06707
Best fitness: 247.41108 - size: (24, 43) - species 5 - id 173675
Average adjusted fitness: 0.460
Mean genetic distance 2.732, standard deviation 0.835
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 272 129
                 247.4
                            0.480
    6 102 121
                   231.0
                            0.441
                                    22
Total extinctions: 0
Generation time: 14.976 sec (15.742 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-754
 ***** Running generation 755 *****
Population's average fitness: 33.31879 stdev: 129.29091
Best fitness: 247.42455 - size: (25, 44) - species 5 - id 173906
Average adjusted fitness: 0.479
Mean genetic distance 2.697, standard deviation 0.848
Population of 250 members in 2 species:
       age size fitness adj fit stag
 5 273 133
                   247.4
                            0.523
                                    57
    6 103 117
                   233.5
                            0.436
                                     23
Total extinctions: 0
Generation time: 16.385 sec (15.736 average)
 ***** Running generation 756 *****
Population's average fitness: 18.80527 stdev: 125.96064
Best fitness: 258.85081 - size: (25, 44) - species 5 - id 173523
Average adjusted fitness: 0.383
Mean genetic distance 2.717, standard deviation 0.877
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 274 125
                   258.9
                                    58
                            0.361
    6 104
           125
                   232.7
                            0.405
                                     24
Total extinctions: 0
Generation time: 15.847 sec (15.686 average)
***** Running generation 757 *****
Population's average fitness: 37.13430 stdev: 132.12696
Best fitness: 239.99368 - size: (25, 44) - species 5 - id 174450
Average adjusted fitness: 0.458
Mean genetic distance 2.680, standard deviation 0.935
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 275
           124
                   240.0
                            0.455
                                     59
    6 105 126
                   239.4
                            0.461
                                    25
Total extinctions: 0
Generation time: 16.573 sec (15.810 average)
 ***** Running generation 758 *****
Population's average fitness: 23.64521 stdev: 130.24936
Best fitness: 247.63737 - size: (23, 37) - species 6 - id 174498
```

```
Average adjusted fitness: 0.429
Mean genetic distance 2.588, standard deviation 0.891
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 276
                   243.4
            125
                            0.428
    6 106 125 247.6 0.429
                                    26
Total extinctions: 0
Generation time: 15.207 sec (15.803 average)
***** Running generation 759 *****
Population's average fitness: 22.53335 stdev: 126.85559
Best fitness: 268.34501 - size: (25, 44) - species 5 - id 174714
Average adjusted fitness: 0.398
Mean genetic distance 2.474, standard deviation 0.937
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 277 121 268.3 0.372 61
           129
    6 107
                 234.5
                            0.424
                                    27
Total extinctions: 0
Generation time: 15.704 sec (15.822 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-759
***** Running generation 760 *****
Population's average fitness: 20.64059 stdev: 129.58102
Best fitness: 249.02739 - size: (25, 46) - species 5 - id 174709
Average adjusted fitness: 0.432
Mean genetic distance 2.503, standard deviation 0.899
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
            116
    5 278
                   249.0
                            0.387
                                    62
    6 108 134 233.0
                            0.478
                                    28
Total extinctions: 0
Generation time: 14.747 sec (15.701 average)
***** Running generation 761 *****
Population's average fitness: 37.40968 stdev: 129.17355
Best fitness: 260.94724 - size: (25, 46) - species 5 - id 174709
Average adjusted fitness: 0.424
Mean genetic distance 2.533, standard deviation 0.896
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 279
                   260.9
             118
                            0.408
                                    63
           132 246.2
                            0.439
                                    29
    6 109
Total extinctions: 0
Generation time: 16.379 sec (15.776 average)
***** Running generation 762 *****
Population's average fitness: 25.14337 stdev: 126.13475
Best fitness: 263.99523 - size: (26, 46) - species 5 - id 174738
Average adjusted fitness: 0.418
Mean genetic distance 2.514, standard deviation 0.867
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 280 117 264.0 0.393 64
    6 110 133
                 231.5 0.444
                                    30
Total extinctions: 0
Generation time: 16.462 sec (15.836 average)
***** Running generation 763 *****
Population's average fitness: 15.16968 stdev: 127.85335
Best fitness: 262.71845 - size: (23, 43) - species 6 - id 175634
Average adjusted fitness: 0.380
Mean genetic distance 2.570, standard deviation 0.871
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 281 115 227.2 0.346 65
    6 111 135 262.7 0.414 31
Total extinctions: 0
Generation time: 15.344 sec (15.762 average)
 ***** Running generation 764 *****
Population's average fitness: 20.34165 stdev: 126.58654
Best fitness: 249.61110 - size: (26, 45) - species 5 - id 175902
Average adjusted fitness: 0.437
Mean genetic distance 2.559, standard deviation 0.881
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    5 282 118
                  249.6
                           0.419
                           0.454
    6 112 132
                   236.9
                                    32
Total extinctions: 0
Generation time: 15.383 sec (15.803 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-764
***** Running generation 765 *****
Population's average fitness: 25.15950 stdev: 131.49766
Best fitness: 247.44458 - size: (24, 41) - species 5 - id 176276
Average adjusted fitness: 0.508
Mean genetic distance 2.617, standard deviation 0.871
Population of 250 members in 2 species:
       age size fitness adj fit stag
      === ==== ===== ====
    5 283 122 247.4 0.509 67
    6 113 128 241.8
                           0.506
                                    33
Total extinctions: 0
Generation time: 15.278 sec (15.692 average)
***** Running generation 766 *****
Population's average fitness: 27.26903 stdev: 125.50382
Best fitness: 245.36088 - size: (21, 41) - species 6 - id 176404
Average adjusted fitness: 0.443
Mean genetic distance 2.694, standard deviation 0.827
Population of 250 members in 2 species:
       age size fitness adj fit stag
```

```
====
       ===
           ====
                 ======= ======
                   243.7
       284
            121
                            0.430
                                    68
    6 114
            129
                   245.4
                            0.455
                                    34
Total extinctions: 0
Generation time: 16.294 sec (15.737 average)
 ***** Running generation 767 *****
Population's average fitness: 23.38686 stdev: 129.75255
Best fitness: 275.86954 - size: (23, 44) - species 5 - id 176564
Average adjusted fitness: 0.390
Mean genetic distance 2.652, standard deviation 0.860
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 285
           122 275.9
                            0.381
                                    69
                 251.0 0.398
    6 115
           128
                                    35
Total extinctions: 0
Generation time: 15.809 sec (15.661 average)
***** Running generation 768 *****
Population's average fitness: 17.03920 stdev: 128.35565
Best fitness: 247.90204 - size: (23, 44) - species 5 - id 176564
Average adjusted fitness: 0.437
Mean genetic distance 2.584, standard deviation 0.877
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 286 125 247.9 0.445
                                    70
    6 116 125 244.9 0.429
                                    36
Total extinctions: 0
Generation time: 15.424 sec (15.682 average)
***** Running generation 769 *****
Population's average fitness: 28.53167 stdev: 131.67675
Best fitness: 249.96658 - size: (28, 47) - species 5 - id 176950
Average adjusted fitness: 0.445
Mean genetic distance 2.572, standard deviation 0.795
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
       === ==== ===== ====
    5 287 121 250.0
                            0.420
                                    71
                   246.8
    6 117
            129
                            0.470
Total extinctions: 0
Generation time: 15.553 sec (15.667 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-769
 ***** Running generation 770 *****
Population's average fitness: 13.92044 stdev: 125.92948
Best fitness: 258.07775 - size: (28, 47) - species 5 - id 176950
Average adjusted fitness: 0.402
Mean genetic distance 2.571, standard deviation 0.769
Population of 250 members in 2 species:
       age size fitness adj fit stag
       === ==== ===== ====
 ====
    5 288
            122
                 258.1
                            0.392
                                    72
```

```
6 118
           128
                   231.8
                           0.412
Total extinctions: 0
Generation time: 15.360 sec (15.729 average)
***** Running generation 771 *****
Population's average fitness: 3.17668 stdev: 124.54874
Best fitness: 242.80276 - size: (28, 47) - species 5 - id 176950
Average adjusted fitness: 0.371
Mean genetic distance 2.631, standard deviation 0.718
Population of 250 members in 2 species:
       age size fitness adj fit stag
           5 289
           123 242.8
                           0.363
                                   73
    6 119 127 232.3 0.379
                                   39
Total extinctions: 0
Generation time: 14.080 sec (15.499 average)
***** Running generation 772 *****
Population's average fitness: 32.11761 stdev: 128.57824
Best fitness: 270.71074 - size: (22, 34) - species 6 - id 177531
Average adjusted fitness: 0.450
Mean genetic distance 2.573, standard deviation 0.765
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    5 290
           126
                  267.0
                           0.464
                                   74
    6 120 124 270.7
                           0.437
Total extinctions: 0
Generation time: 15.963 sec (15.449 average)
***** Running generation 773 *****
Population's average fitness: 19.17795 stdev: 126.10117
Best fitness: 260.21746 - size: (23, 36) - species 6 - id 178116
Average adjusted fitness: 0.405
Mean genetic distance 2.649, standard deviation 0.707
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
  5 291 120 248.5 0.367
                                   75
                   260.2
                           0.444
    6 121
            130
Total extinctions: 0
Generation time: 15.518 sec (15.466 average)
 ***** Running generation 774 *****
Population's average fitness: 23.23617 stdev: 124.59736
Best fitness: 249.11723 - size: (24, 40) - species 6 - id 178387
Average adjusted fitness: 0.418
Mean genetic distance 2.699, standard deviation 0.682
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== ==== ====== ===== ====
    5 292 121 242.3 0.405 76
           129
    6 122
                 249.1
                           0.431
Total extinctions: 0
Generation time: 16.295 sec (15.557 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
```

08.11.24, 17:00

Exp2NEAT walker_Run1\neat-checkpoint-774 ***** Running generation 775 ***** Population's average fitness: 25.96131 stdev: 126.32742 Best fitness: 269.26006 - size: (29, 50) - species 5 - id 178432 Average adjusted fitness: 0.397 Mean genetic distance 2.735, standard deviation 0.685 Population of 250 members in 2 species: age size fitness adj fit stag ==== === ====== ===== ==== 5 293 123 269.3 0.399 77 6 123 127 236.1 0.395 43 Total extinctions: 0 Generation time: 15.929 sec (15.623 average) ***** Running generation 776 ***** Population's average fitness: 28.44670 stdev: 132.89455 Best fitness: 256.31752 - size: (27, 47) - species 5 - id 178809 Average adjusted fitness: 0.436 Mean genetic distance 2.739, standard deviation 0.719 Population of 250 members in 2 species: age size fitness adj fit stag ID ==== === ===== ===== ==== 78 5 294 124 256.3 0.436 6 124 126 253.7 0.436 Total extinctions: 0 Generation time: 15.376 sec (15.531 average) ***** Running generation 777 ***** Population's average fitness: 37.87077 stdev: 126.61520 Best fitness: 257.04001 - size: (27, 41) - species 5 - id 178747 Average adjusted fitness: 0.449 Mean genetic distance 2.716, standard deviation 0.715 Population of 250 members in 2 species: ID age size fitness adj fit stag ==== === ===== ===== ==== 5 295 125 257.0 0.446 79 6 125 125 238.0 0.452 Total extinctions: 0 Generation time: 16.324 sec (15.582 average) ***** Running generation 778 ***** Population's average fitness: 28.93020 stdev: 128.18745 Best fitness: 260.57878 - size: (24, 40) - species 6 - id 178520 Average adjusted fitness: 0.421 Mean genetic distance 2.693, standard deviation 0.729 Population of 250 members in 2 species: age size fitness adj fit stag

==== === ===== ===== ==== 296 121 241.3 0.394 80 6 126 129 260.6 0.447 46

Total extinctions: 0

Generation time: 16.398 sec (15.680 average)

***** Running generation 779 *****

```
Population's average fitness: 18.91738 stdev: 123.16951
Best fitness: 245.01968 - size: (23, 41) - species 6 - id 178850
Average adjusted fitness: 0.423
Mean genetic distance 2.727, standard deviation 0.729
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 297
           120 244.9
                            0.408
    6 127 130
                   245.0
                            0.438
                                    47
Total extinctions: 0
Generation time: 15.469 sec (15.671 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-779
 ***** Running generation 780 *****
Population's average fitness: 26.32666 stdev: 126.21364
Best fitness: 248.16450 - size: (29, 49) - species 5 - id 179639
Average adjusted fitness: 0.438
Mean genetic distance 2.753, standard deviation 0.683
Population of 250 members in 2 species:
       age size fitness adj fit stag
 5 298 121
                            0.430
                   248.2
                                    82
    6 128
           129
                   230.5
                            0.445
Total extinctions: 0
Generation time: 16.140 sec (15.749 average)
 ***** Running generation 781 *****
Population's average fitness: 27.54976 stdev: 125.81290
Best fitness: 258.17916 - size: (28, 48) - species 5 - id 179925
Average adjusted fitness: 0.441
Mean genetic distance 2.753, standard deviation 0.653
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 299 122
                            0.428
                   258.2
                                    83
    6 129 128
                   247.8
                            0.454
                                    49
Total extinctions: 0
Generation time: 19.233 sec (16.264 average)
***** Running generation 782 *****
Population's average fitness: 25.36775 stdev: 124.38820
Best fitness: 260.51993 - size: (29, 49) - species 5 - id 180176
Average adjusted fitness: 0.413
Mean genetic distance 2.650, standard deviation 0.713
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 300 128
                   260.5
                            0.440
                                    84
    6 130 122
                   258.0
                            0.386
                                    50
Total extinctions: 0
Generation time: 16.618 sec (16.330 average)
 ***** Running generation 783 *****
Population's average fitness: 29.15229 stdev: 125.42296
Best fitness: 261.85917 - size: (28, 46) - species 5 - id 180217
```

```
Average adjusted fitness: 0.436
Mean genetic distance 2.592, standard deviation 0.776
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 301
                   261.9
           127
                            0.437
    6 131 123 237.6 0.434
                                    51
Total extinctions: 0
Generation time: 17.745 sec (16.553 average)
***** Running generation 784 *****
Population's average fitness: 17.81606 stdev: 124.73731
Best fitness: 266.22420 - size: (23, 40) - species 6 - id 180322
Average adjusted fitness: 0.421
Mean genetic distance 2.541, standard deviation 0.808
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    5 302 129 239.2 0.442 86
    6 132
           121
                 266.2
                            0.399
                                    52
Total extinctions: 0
Generation time: 17.246 sec (16.648 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-784
***** Running generation 785 *****
Population's average fitness: 25.41099 stdev: 126.41521
Best fitness: 237.66711 - size: (23, 40) - species 6 - id 180818
Average adjusted fitness: 0.424
Mean genetic distance 2.651, standard deviation 0.760
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
           126
    5 303
                   237.3
                            0.417
                                     87
    6 133 124 237.7
                            0.431
                                    53
Total extinctions: 0
Generation time: 16.433 sec (16.698 average)
***** Running generation 786 *****
Population's average fitness: 21.83067 stdev: 124.44709
Best fitness: 250.14790 - size: (28, 51) - species 5 - id 180984
Average adjusted fitness: 0.401
Mean genetic distance 2.678, standard deviation 0.754
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 304
            122
                   250.1
                            0.381
                                    88
            128 227.7
                            0.422
    6 134
                                    54
Total extinctions: 0
Generation time: 17.164 sec (16.877 average)
***** Running generation 787 *****
Population's average fitness: 22.77231 stdev: 125.58254
Best fitness: 279.15859 - size: (28, 49) - species 5 - id 181347
Average adjusted fitness: 0.420
Mean genetic distance 2.763, standard deviation 0.715
```

```
Population of 250 members in 3 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 305
           120 279.2 0.395
                                  89
    6 135 126 243.7 0.445
                                   55
       0 4
    7
Total extinctions: 0
Generation time: 16.601 sec (16.905 average)
***** Running generation 788 *****
Population's average fitness: 24.58810 stdev: 123.49964
Best fitness: 239.14139 - size: (29, 53) - species 5 - id 181551
Average adjusted fitness: 0.399
Mean genetic distance 2.760, standard deviation 0.735
Population of 250 members in 3 species:
       age size fitness adj fit stag
 5 306 107 239.1 0.447 90
    6 136 94 225.5 0.473
                                   56
            49 182.9
    7
       1
                          0.277
Total extinctions: 0
Generation time: 17.479 sec (17.013 average)
***** Running generation 789 *****
Population's average fitness: 18.61968 stdev: 126.18775
Best fitness: 247.25376 - size: (29, 52) - species 5 - id 181513
Average adjusted fitness: 0.371
Mean genetic distance 2.759, standard deviation 0.712
Population of 251 members in 3 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 307 102 247.3 0.429 91
           55 244.7 0.452
    6 137
                                  57
             94
                  227.5
    7
        2
                          0.233
Total extinctions: 0
Generation time: 16.137 sec (17.080 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-789
***** Running generation 790 *****
Population's average fitness: 38.69041 stdev: 129.96161
Best fitness: 267.08451 - size: (31, 54) - species 5 - id 182053
Average adjusted fitness: 0.473
Mean genetic distance 2.733, standard deviation 0.688
Population of 251 members in 3 species:
       age size fitness adj fit stag
  ID
      === ==== ===== ====
  ====
           97
                                   92
    5 308
                267.1 0.524
    6
      138
           78 246.3
                          0.466
                                   58
    7
           76
                  232.5
                           0.430
                                    0
        3
Total extinctions: 0
Generation time: 17.227 sec (17.188 average)
 ***** Running generation 791 *****
Population's average fitness: 26.12260 stdev: 131.08088
Best fitness: 250.97421 - size: (25, 43) - species 7 - id 182107
```

```
Species 6 with 78 members is stagnated: removing it
Average adjusted fitness: 0.415
Mean genetic distance 2.640, standard deviation 0.794
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    5 309
           127
                    248.0
                            0.393
                                     93
    7
       4 123
                    251.0
                            0.438
                                      0
Total extinctions: 0
Generation time: 16.501 sec (16.915 average)
***** Running generation 792 *****
Population's average fitness: 23.16624 stdev: 125.88638
Best fitness: 260.93910 - size: (31, 54) - species 5 - id 182053
Average adjusted fitness: 0.412
Mean genetic distance 2.691, standard deviation 0.785
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    5 310
            128
                   260.9
                            0.422
                                     94
    7
         5 122 237.9
                            0.401
                                     1
Total extinctions: 0
Generation time: 16.073 sec (16.860 average)
***** Running generation 793 *****
Population's average fitness: 18.66350 stdev: 124.65839
Best fitness: 287.83483 - size: (31, 53) - species 5 - id 182650
Average adjusted fitness: 0.369
Mean genetic distance 2.668, standard deviation 0.752
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    5 311
            125
                    287.8
                            0.362
                                     95
    7
         6
           125
                    248.6
                            0.375
                                      2
Total extinctions: 0
Generation time: 16.310 sec (16.717 average)
***** Running generation 794 *****
Population's average fitness: 8.74035 stdev: 128.26422
Best fitness: 262.78771 - size: (26, 46) - species 5 - id 182962
Average adjusted fitness: 0.401
Mean genetic distance 2.718, standard deviation 0.757
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
       312
             126
                    262.8
                            0.409
                                     96
    7
             124
                    247.4
         7
                            0.394
                                      3
Total extinctions: 0
Generation time: 15.417 sec (16.534 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-794
 ***** Running generation 795 *****
Population's average fitness: 23.16139 stdev: 124.93427
Best fitness: 240.11490 - size: (26, 46) - species 5 - id 182962
```

```
Average adjusted fitness: 0.472
Mean genetic distance 2.815, standard deviation 0.769
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    5 313
                   240.1
                           0.472
            125
    7
           125 224.4 0.473
         8
Total extinctions: 0
Generation time: 16.678 sec (16.559 average)
***** Running generation 796 *****
Population's average fitness: 11.52159 stdev: 119.29400
Best fitness: 236.50201 - size: (24, 41) - species 7 - id 183218
Average adjusted fitness: 0.459
Mean genetic distance 2.753, standard deviation 0.797
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 314 127
                 234.6 0.474
                                    98
    7
       9
           123
                 236.5
                           0.443
                                    5
Total extinctions: 0
Generation time: 15.856 sec (16.428 average)
***** Running generation 797 *****
Population's average fitness: 15.50673 stdev: 127.75066
Best fitness: 250.38855 - size: (29, 51) - species 5 - id 183471
Average adjusted fitness: 0.468
Mean genetic distance 2.651, standard deviation 0.824
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 315 126 250.4 0.472 99
           124 228.7 0.464
    7
       10
                                    6
Total extinctions: 0
Generation time: 16.546 sec (16.422 average)
***** Running generation 798 *****
Population's average fitness: 12.55695 stdev: 124.57590
Best fitness: 260.44894 - size: (29, 48) - species 5 - id 183360
Average adjusted fitness: 0.403
Mean genetic distance 2.664, standard deviation 0.795
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 316 131 260.4 0.441 100
    7
       11 119 232.4
                           0.366
                                    7
Total extinctions: 0
Generation time: 16.464 sec (16.321 average)
***** Running generation 799 *****
Population's average fitness: 28.19701 stdev: 127.40240
Best fitness: 259.43261 - size: (31, 58) - species 5 - id 184100
Average adjusted fitness: 0.408
Mean genetic distance 2.671, standard deviation 0.774
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
```

```
====
                5 317
            133
                   259.4
                           0.443
                                   101
        12
            117
                   222.4
                           0.373
Total extinctions: 0
Generation time: 16.423 sec (16.349 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-799
***** Running generation 800 *****
Population's average fitness: 15.86725 stdev: 119.81960
Best fitness: 254.67007 - size: (28, 48) - species 5 - id 184292
Average adjusted fitness: 0.380
Mean genetic distance 2.722, standard deviation 0.730
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                 254.7
    5 318
           135
                          0.413 102
    7
      13 115
                 228.4
                           0.346
Total extinctions: 0
Generation time: 16.130 sec (16.240 average)
***** Running generation 801 *****
Population's average fitness: 7.52387 stdev: 118.83429
Best fitness: 277.03954 - size: (28, 48) - species 5 - id 184505
Average adjusted fitness: 0.353
Mean genetic distance 2.676, standard deviation 0.756
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    5 319
           134
                  277.0
                           0.374
                                  103
                   230.2
                           0.331
    7
        14
            116
Total extinctions: 0
Generation time: 15.843 sec (16.174 average)
 ***** Running generation 802 *****
Population's average fitness: 13.41595 stdev: 127.69469
Best fitness: 268.33505 - size: (24, 43) - species 5 - id 184772
Average adjusted fitness: 0.440
Mean genetic distance 2.666, standard deviation 0.809
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    5 320
           128
                   268.3
                           0.429
                                  104
    7
        15
            122
                   217.0
                           0.450
                                    11
Total extinctions: 0
Generation time: 15.420 sec (16.109 average)
 ***** Running generation 803 *****
Population's average fitness: 26.99929 stdev: 128.06879
Best fitness: 256.04859 - size: (26, 45) - species 5 - id 184712
Average adjusted fitness: 0.407
Mean genetic distance 2.743, standard deviation 0.788
Population of 250 members in 3 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 321 130 256.0
                           0.431 105
```

```
7
        16
              89
                    239.2
                            0.383
                                     12
    8
         a
              31
                                      a
Total extinctions: 0
Generation time: 16.408 sec (16.118 average)
***** Running generation 804 *****
Population's average fitness: 24.77616 stdev: 127.51287
Best fitness: 261.32763 - size: (26, 45) - species 5 - id 184712
Average adjusted fitness: 0.405
Mean genetic distance 2.746, standard deviation 0.753
Population of 250 members in 3 species:
       age size fitness adj fit stag
           ==== ====== =====
  ==== ===
    5 322
            108
                   261.3
                            0.416
                                    106
             67
    7
       17
                 233.7
                            0.371 13
    8
         1
              75
                    240.7
                            0.427
Total extinctions: 0
Generation time: 16.564 sec (16.233 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-804
 ***** Running generation 805 *****
Population's average fitness: 25.76565 stdev: 124.30903
Best fitness: 265.20572 - size: (26, 45) - species 5 - id 184712
Average adjusted fitness: 0.413
Mean genetic distance 2.679, standard deviation 0.695
Population of 250 members in 3 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    5 323
              91
                    265.2
                            0.367
                                    107
            79
    7
        18
                 224.1
                            0.456
                                     14
        2
            80
                    229.4
                            0.417
Total extinctions: 0
Generation time: 16.571 sec (16.222 average)
 ***** Running generation 806 *****
Population's average fitness: 32.91592 stdev: 121.83156
Best fitness: 247.08242 - size: (33, 59) - species 5 - id 185639
Average adjusted fitness: 0.496
Mean genetic distance 2.662, standard deviation 0.685
Population of 251 members in 3 species:
       age size fitness adj fit stag
  ID
                 ====== ===== ====
  ==== ===
           ====
    5 324
            88
                   247.1
                            0.503
                                   108
    7
       19
                    244.4
                            0.474
              80
                                   15
    8
         3
              83
                    244.3
                            0.511
Total extinctions: 0
Generation time: 17.346 sec (16.371 average)
***** Running generation 807 *****
Population's average fitness: 25.02315 stdev: 123.04370
Best fitness: 259.80852 - size: (34, 57) - species 5 - id 185898
Average adjusted fitness: 0.424
Mean genetic distance 2.684, standard deviation 0.752
Population of 250 members in 3 species:
       age size fitness adj fit stag
```

```
====
            ====
                 ======
                         ======
    5 325
              90
                   259.8
                            0.465
                                    109
    7
        20
             82
                   234.9
                            0.432
                                    16
    8
        4
           78
                   240.4
                            0.376
                                     1
Total extinctions: 0
Generation time: 16.452 sec (16.362 average)
 ***** Running generation 808 *****
Population's average fitness: 39.25583 stdev: 122.82361
Best fitness: 247.61215 - size: (32, 55) - species 5 - id 185904
Average adjusted fitness: 0.448
Mean genetic distance 2.640, standard deviation 0.744
Population of 250 members in 3 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 326
             87
                   247.6
                            0.455
                                  110
    7
       21
           81 231.7
                            0.426
                                  17
    8
        5
           82 241.6
                            0.465
Total extinctions: 0
Generation time: 17.579 sec (16.473 average)
 ***** Running generation 809 *****
Population's average fitness: 31.63210 stdev: 126.80216
Best fitness: 259.81112 - size: (34, 55) - species 5 - id 186089
Average adjusted fitness: 0.482
Mean genetic distance 2.675, standard deviation 0.764
Population of 249 members in 3 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
    5 327
             83
                   259.8
                            0.454
    7
        22
           85 249.9
                            0.520
                                    18
           81
                   249.2
                            0.472
Total extinctions: 0
Generation time: 16.745 sec (16.506 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-809
 ***** Running generation 810 *****
Population's average fitness: 35.01136 stdev: 127.72172
Best fitness: 251.83458 - size: (22, 36) - species 8 - id 186006
Average adjusted fitness: 0.474
Mean genetic distance 2.672, standard deviation 0.753
Population of 249 members in 3 species:
  ID
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 328 81
                 250.7
                            0.448 112
    7
        23
             88
                   245.9
                            0.521
                                    19
    8
         7
              80
                   251.8
                            0.453
Total extinctions: 0
Generation time: 16.206 sec (16.513 average)
***** Running generation 811 *****
Population's average fitness: 37.24170 stdev: 126.11069
Best fitness: 277.30443 - size: (23, 40) - species 5 - id 186722
Average adjusted fitness: 0.438
Mean genetic distance 2.709, standard deviation 0.822
```

```
Population of 249 members in 3 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 329
           80 277.3 0.423 113
    7
       24
           87 245.9 0.451 20
                234.5
    8
        8
           82
                           0.439
                                   1
Total extinctions: 0
Generation time: 16.953 sec (16.624 average)
***** Running generation 812 *****
Population's average fitness: 23.79802 stdev: 126.49230
Best fitness: 246.34618 - size: (24, 38) - species 7 - id 186919
Average adjusted fitness: 0.456
Mean genetic distance 2.751, standard deviation 0.807
Population of 249 members in 3 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 330 83 245.5 0.475 114
    7
       25 85 246.3 0.458 21
    8
       9
           81 223.7
                           0.436
Total extinctions: 0
Generation time: 15.696 sec (16.652 average)
***** Running generation 813 *****
Population's average fitness: 37.87036 stdev: 126.40690
Best fitness: 263.85179 - size: (24, 38) - species 7 - id 186919
Average adjusted fitness: 0.462
Mean genetic distance 2.818, standard deviation 0.844
Population of 250 members in 3 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    5 331 86 237.0 0.488 115
           84 263.9 0.457
    7
       26
    8
       10
           80
                 223.8 0.441
Total extinctions: 0
Generation time: 17.330 sec (16.744 average)
***** Running generation 814 *****
Population's average fitness: 31.31984 stdev: 124.59022
Best fitness: 257.41389 - size: (23, 41) - species 5 - id 187363
Average adjusted fitness: 0.428
Mean genetic distance 2.728, standard deviation 0.837
Population of 250 members in 3 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    5 332 89 257.4 0.474 116
                   230.7
    7
       27
             80
                           0.390
                                   1
                           0.421
    8
       11
           81
                221.6
Total extinctions: 0
Generation time: 16.212 sec (16.709 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-814
 ***** Running generation 815 *****
Population's average fitness: 31.70872 stdev: 128.67193
Best fitness: 256.33908 - size: (34, 58) - species 5 - id 187625
```

```
Average adjusted fitness: 0.422
```

Mean genetic distance 2.741, standard deviation 0.830

Population of 250 members in 3 species:

Total extinctions: 0

Generation time: 16.075 sec (16.659 average)

***** Running generation 816 *****

Population's average fitness: 40.10028 stdev: 127.03804

Best fitness: 243.31396 - size: (34, 58) - species 5 - id 187625

Average adjusted fitness: 0.494

Mean genetic distance 2.798, standard deviation 0.845

Population of 250 members in 3 species:

| ID | age | size | fitness | adj fit | stag |
|------|-----|------|---------|---------|------|
| ==== | === | ==== | ====== | ====== | ==== |
| 5 | 334 | 88 | 243.3 | 0.514 | 118 |
| 7 | 29 | 76 | 212.1 | 0.459 | 3 |
| 8 | 13 | 86 | 238.6 | 0.511 | 6 |

Total extinctions: 0

Generation time: 17.047 sec (16.629 average)

***** Running generation 817 *****

Population's average fitness: 40.40039 stdev: 130.55383

Best fitness: 251.90232 - size: (23, 36) - species 7 - id 187583

Average adjusted fitness: 0.481

Mean genetic distance 2.787, standard deviation 0.787

Population of 251 members in 3 species:

| ID | age | size | fitness | adj fit | stag |
|------|-----|------|---------|---------|------|
| ==== | === | ==== | ====== | ====== | ==== |
| 5 | 335 | 85 | 242.2 | 0.474 | 119 |
| 7 | 30 | 77 | 251.9 | 0.443 | 4 |
| 8 | 14 | 89 | 234.0 | 0.527 | 7 |

Total extinctions: 0

Generation time: 16.848 sec (16.669 average)

***** Running generation 818 *****

Population's average fitness: 27.59204 stdev: 125.70854

Best fitness: 261.04167 - size: (21, 37) - species 5 - id 188219

Average adjusted fitness: 0.414

Mean genetic distance 2.768, standard deviation 0.848

Population of 249 members in 3 species:

| ID | age | size | titness | adj fit | stag |
|------|-----|------|---------|---------|------|
| ==== | === | ==== | ====== | ====== | ==== |
| 5 | 336 | 85 | 261.0 | 0.427 | 120 |
| 7 | 31 | 77 | 228.9 | 0.385 | 5 |
| 8 | 15 | 87 | 257.6 | 0.431 | 0 |

Total extinctions: 0

Generation time: 15.645 sec (16.476 average)

***** Running generation 819 *****

Population's average fitness: 38.19648 stdev: 129.06170

Best fitness: 250.63723 - size: (34, 56) - species 5 - id 188533

Average adjusted fitness: 0.455 Mean genetic distance 2.777, standard deviation 0.853 Population of 250 members in 3 species: age size fitness adj fit stag ==== === ====== ===== ==== 5 337 87 250.6 0.491 7 79 228.7 0.423 6 32 8 16 84 242.7 0.452 Total extinctions: 0 Generation time: 16.230 sec (16.424 average) Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti walker_Run1\neat-checkpoint-819 ***** Running generation 820 ***** Population's average fitness: 39.93377 stdev: 129.01402 Best fitness: 252.04801 - size: (34, 55) - species 5 - id 188722 Average adjusted fitness: 0.481 Mean genetic distance 2.822, standard deviation 0.852 Population of 251 members in 3 species: age size fitness adj fit stag ==== === ===== ===== ==== 5 338 86 252.0 0.485 122 7 33 238.5 0.501 7 83 8 17 82 243.0 0.456 Total extinctions: 0 Generation time: 17.084 sec (16.512 average) ***** Running generation 821 ***** Population's average fitness: 13.62747 stdev: 124.85033 Best fitness: 247.20835 - size: (24, 45) - species 8 - id 187081 Species 5 with 86 members is stagnated: removing it Average adjusted fitness: 0.426 Mean genetic distance 2.209, standard deviation 0.583 Population of 250 members in 2 species: age size fitness adj fit stag ID ==== === ===== ===== ==== 7 34 126 239.4 0.431 8 18 124 247.2 0.420 8 Total extinctions: 0 Generation time: 15.169 sec (16.334 average) ***** Running generation 822 ***** Population's average fitness: 27.19691 stdev: 127.62407 Best fitness: 267.61500 - size: (25, 40) - species 7 - id 189101 Average adjusted fitness: 0.499 Mean genetic distance 2.250, standard deviation 0.593 Population of 250 members in 2 species: age size fitness adj fit stag ==== === ===== ===== ==== 7 35 124 267.6 0.490 19 126 253.8 0.509 Ω Total extinctions: 0 Generation time: 16.597 sec (16.424 average)

***** Running generation 823 *****

```
Population's average fitness: 24.97469 stdev: 126.93324
Best fitness: 252.95365 - size: (26, 42) - species 7 - id 188806
Average adjusted fitness: 0.414
Mean genetic distance 2.283, standard deviation 0.614
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    7
       36
           123
                   253.0
                            0.408
    8
       20 127
                    251.4
                            0.420
                                      5
Total extinctions: 0
Generation time: 15.943 sec (16.285 average)
***** Running generation 824 *****
Population's average fitness: 42.98853 stdev: 127.76248
Best fitness: 246.34128 - size: (24, 37) - species 7 - id 189599
Average adjusted fitness: 0.460
Mean genetic distance 2.295, standard deviation 0.625
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ======
    7
       37
           129
                   246.3
                            0.500
       21 121 242.5
                            0.419
    8
Total extinctions: 0
Generation time: 16.179 sec (16.282 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-824
 ***** Running generation 825 *****
Population's average fitness: 44.59904 stdev: 131.12077
Best fitness: 267.59578 - size: (24, 37) - species 7 - id 189897
Average adjusted fitness: 0.468
Mean genetic distance 2.307, standard deviation 0.680
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    7
                    267.6
                            0.481
       38 128
                                      3
    8
        22
           122
                    233.5
                            0.455
                                      7
Total extinctions: 0
Generation time: 16.713 sec (16.346 average)
***** Running generation 826 *****
Population's average fitness: 31.35341 stdev: 128.42334
Best fitness: 249.46841 - size: (24, 39) - species 7 - id 190070
Average adjusted fitness: 0.436
Mean genetic distance 2.406, standard deviation 0.637
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    7
       39
           131
                    249.5
                            0.466
                                      4
                            0.407
       23 119
                    227.9
                                      8
    8
Total extinctions: 0
Generation time: 16.212 sec (16.262 average)
***** Running generation 827 *****
Population's average fitness: 29.67413 stdev: 122.70778
Best fitness: 249.08187 - size: (23, 34) - species 8 - id 189938
```

```
Average adjusted fitness: 0.431
Mean genetic distance 2.370, standard deviation 0.648
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    7
                   233.2
                            0.437
       40
             129
       24
            121
                 249.1 0.425
    8
Total extinctions: 0
Generation time: 16.275 sec (16.205 average)
***** Running generation 828 *****
Population's average fitness: 37.77417 stdev: 125.62435
Best fitness: 252.81436 - size: (19, 26) - species 8 - id 189240
Average adjusted fitness: 0.446
Mean genetic distance 2.385, standard deviation 0.612
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    7 41 127
                 243.1 0.446
                                    6
    8
        25
            123
                 252.8
                           0.445
                                    10
Total extinctions: 0
Generation time: 15.629 sec (16.203 average)
***** Running generation 829 *****
Population's average fitness: 22.39696 stdev: 123.20769
Best fitness: 243.47787 - size: (19, 26) - species 8 - id 190175
Average adjusted fitness: 0.451
Mean genetic distance 2.349, standard deviation 0.557
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    7
       42 121 238.0 0.416
    8
       26
           129
                 243.5 0.487
                                    11
Total extinctions: 0
Generation time: 15.548 sec (16.135 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-829
***** Running generation 830 *****
Population's average fitness: 21.91372 stdev: 121.21580
Best fitness: 232.21561 - size: (19, 26) - species 8 - id 190594
Average adjusted fitness: 0.418
Mean genetic distance 2.350, standard deviation 0.510
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
                   231.8
    7
       43
            124
                            0.408
                                     8
           126 232.2
                            0.428
    8
       27
                                    12
Total extinctions: 0
Generation time: 15.805 sec (16.007 average)
***** Running generation 831 *****
Population's average fitness: 17.17178 stdev: 121.13785
Best fitness: 237.74691 - size: (26, 39) - species 7 - id 190291
Average adjusted fitness: 0.399
Mean genetic distance 2.290, standard deviation 0.494
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== =====
       44
           129 237.7 0.418
    8
       28
           121
                 236.2 0.380
                                    13
Total extinctions: 0
Generation time: 15.694 sec (16.059 average)
***** Running generation 832 *****
Population's average fitness: 17.52321 stdev: 119.67992
Best fitness: 244.79712 - size: (26, 37) - species 7 - id 191151
Average adjusted fitness: 0.441
Mean genetic distance 2.326, standard deviation 0.452
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
       45
           132 244.8 0.484
                                   10
    8
       29
           118 232.7 0.398 14
Total extinctions: 0
Generation time: 15.325 sec (15.932 average)
 ***** Running generation 833 *****
Population's average fitness: 25.13652 stdev: 123.22690
Best fitness: 256.67480 - size: (25, 40) - species 7 - id 191652
Average adjusted fitness: 0.410
Mean genetic distance 2.356, standard deviation 0.447
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
                  256.7
       46
           138
                           0.421
       30
           112
                   241.9 0.399
                                    15
    8
Total extinctions: 0
Generation time: 15.560 sec (15.894 average)
 ***** Running generation 834 *****
Population's average fitness: 17.44327 stdev: 119.74805
Best fitness: 226.19738 - size: (26, 39) - species 7 - id 190291
Average adjusted fitness: 0.429
Mean genetic distance 2.385, standard deviation 0.492
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
       47
           147
    7
                   226.2
                           0.438
    8
        31
            103
                   216.4
                            0.420
Total extinctions: 0
Generation time: 15.096 sec (15.786 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-834
***** Running generation 835 *****
Population's average fitness: 33.64742 stdev: 122.37927
Best fitness: 264.29470 - size: (25, 35) - species 7 - id 192166
Average adjusted fitness: 0.451
Mean genetic distance 2.515, standard deviation 0.524
Population of 250 members in 2 species:
       age size fitness adj fit stag
```

```
====
            ====
                 ======
        48
             132
                   264.3
                           0.418
                                    13
                   246.2
        32
            118
                            0.484
                                    17
Total extinctions: 0
Generation time: 16.712 sec (15.786 average)
 ***** Running generation 836 *****
Population's average fitness: 25.37969 stdev: 126.32621
Best fitness: 248.85649 - size: (26, 42) - species 7 - id 192428
Average adjusted fitness: 0.464
Mean genetic distance 2.584, standard deviation 0.556
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
           125 248.9
    7
       49
                         0.439
                                    14
                   240.6 0.488
        33
           125
                                    18
Total extinctions: 0
Generation time: 15.180 sec (15.683 average)
***** Running generation 837 *****
Population's average fitness: 31.31279 stdev: 125.38598
Best fitness: 246.08598 - size: (26, 40) - species 7 - id 192212
Average adjusted fitness: 0.438
Mean genetic distance 2.595, standard deviation 0.505
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    7
       50 121 246.1 0.409
                                    15
       34 129 236.9 0.468
                                    19
    8
Total extinctions: 0
Generation time: 15.869 sec (15.642 average)
***** Running generation 838 *****
Population's average fitness: 41.92774 stdev: 124.51036
Best fitness: 238.83651 - size: (26, 41) - species 7 - id 192813
Average adjusted fitness: 0.467
Mean genetic distance 2.553, standard deviation 0.497
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
      === ==== ===== ====
    7
       51 122 238.8
                           0.455
                                    16
       35
           128
                   237.8
                            0.479
Total extinctions: 0
Generation time: 16.677 sec (15.747 average)
 ***** Running generation 839 *****
Population's average fitness: 23.73962 stdev: 120.96119
Best fitness: 248.41735 - size: (24, 37) - species 8 - id 192508
Average adjusted fitness: 0.404
Mean genetic distance 2.487, standard deviation 0.573
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    7
        52
            118
                   227.0
                            0.371
                                    17
        36
            132
                   248.4
                            0.437
                                    21
    8
Total extinctions: 0
```

```
Generation time: 17.222 sec (15.914 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-839
***** Running generation 840 *****
Population's average fitness: 44.84936 stdev: 122.59317
Best fitness: 246.28584 - size: (25, 36) - species 7 - id 193212
Average adjusted fitness: 0.480
Mean genetic distance 2.471, standard deviation 0.688
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ===== ===== ====
                         0.456
    7
       53
           119 246.3
                                    18
      37 131 234.4 0.505
                                    22
Total extinctions: 0
Generation time: 19.471 sec (16.281 average)
***** Running generation 841 *****
Population's average fitness: 35.03846 stdev: 128.04812
Best fitness: 246.82709 - size: (25, 34) - species 7 - id 193587
Average adjusted fitness: 0.466
Mean genetic distance 2.482, standard deviation 0.636
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    7
       54 120
                 246.8
                         0.452
       38
           130 242.6 0.481
Total extinctions: 0
Generation time: 16.625 sec (16.374 average)
***** Running generation 842 *****
Population's average fitness: 26.51546 stdev: 121.58836
Best fitness: 249.47389 - size: (24, 37) - species 8 - id 192508
Average adjusted fitness: 0.425
Mean genetic distance 2.517, standard deviation 0.633
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
      55 118 240.9 0.396 20
    7
       39
           132
                   249.5
                           0.455
Total extinctions: 0
Generation time: 16.597 sec (16.501 average)
 ***** Running generation 843 *****
Population's average fitness: 27.41328 stdev: 123.24967
Best fitness: 240.44698 - size: (25, 36) - species 7 - id 193886
Average adjusted fitness: 0.439
Mean genetic distance 2.541, standard deviation 0.668
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== ==== ====== ===== ====
       56 123 240.4 0.450 21
    7
           127
       40
                 223.7 0.427
    8
Total extinctions: 0
Generation time: 16.518 sec (16.597 average)
```

```
***** Running generation 844 *****
Population's average fitness: 17.93029 stdev: 124.02656
Best fitness: 241.23746 - size: (28, 46) - species 7 - id 193908
Average adjusted fitness: 0.472
Mean genetic distance 2.587, standard deviation 0.621
Population of 250 members in 2 species:
       age size fitness adj fit stag
 7
       57
            121
                   241.2
                            0.450
        41 129
                   219.1
                            0.495
                                    26
    8
Total extinctions: 0
Generation time: 16.307 sec (16.718 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-844
 ***** Running generation 845 *****
Population's average fitness: 25.29563 stdev: 122.43069
Best fitness: 262.02833 - size: (25, 37) - species 8 - id 194382
Average adjusted fitness: 0.423
Mean genetic distance 2.456, standard deviation 0.606
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
 ==== ===
           ==== ====== ====
    7
       58
           120 241.8 0.408
                                    23
    8
       42 130 262.0
                            0.439
Total extinctions: 0
Generation time: 16.830 sec (16.730 average)
 ***** Running generation 846 *****
Population's average fitness: 31.30290 stdev: 121.44678
Best fitness: 254.36604 - size: (26, 43) - species 7 - id 194593
Average adjusted fitness: 0.446
Mean genetic distance 2.398, standard deviation 0.563
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
  ==== ===
           ==== ====== =====
    7
       59
                 254.4
                            0.446
                                    24
           122
        43 128
                   244.9
                            0.447
    8
Total extinctions: 0
Generation time: 17.040 sec (16.916 average)
 ***** Running generation 847 *****
Population's average fitness: 26.57123 stdev: 124.01533
Best fitness: 248.76099 - size: (28, 46) - species 7 - id 194879
Average adjusted fitness: 0.459
Mean genetic distance 2.389, standard deviation 0.592
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    7
            123
                   248.8
                            0.452
                                    25
        60
    Ω
        44
            127
                   230.5
                            0.467
Total extinctions: 0
Generation time: 17.342 sec (17.063 average)
```

***** Running generation 848 *****

```
Population's average fitness: 5.52551 stdev: 113.97770
Best fitness: 251.15439 - size: (26, 43) - species 7 - id 194593
Average adjusted fitness: 0.387
Mean genetic distance 2.333, standard deviation 0.617
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    7
           120
                 251.2
                            0.360
       61
    8
       45
             130
                    228.7
                            0.413
                                      3
Total extinctions: 0
Generation time: 16.107 sec (17.006 average)
***** Running generation 849 *****
Population's average fitness: 25.22203 stdev: 121.44091
Best fitness: 267.30495 - size: (26, 45) - species 7 - id 195430
Average adjusted fitness: 0.410
Mean genetic distance 2.324, standard deviation 0.616
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    7
       62
           121
                   267.3
                            0.401
                                     27
       46 129 238.9
                            0.419
    8
Total extinctions: 0
Generation time: 16.614 sec (16.945 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-849
 ***** Running generation 850 *****
Population's average fitness: 33.71978 stdev: 120.33007
Best fitness: 259.20156 - size: (26, 43) - species 7 - id 195398
Average adjusted fitness: 0.454
Mean genetic distance 2.310, standard deviation 0.600
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    7
                    259.2
                            0.441
       63 122
                                     28
    8
       47
             128
                    229.6
                            0.468
                                      5
Total extinctions: 0
Generation time: 17.360 sec (16.734 average)
***** Running generation 851 *****
Population's average fitness: 36.58742 stdev: 120.64472
Best fitness: 237.52523 - size: (25, 36) - species 7 - id 195896
Average adjusted fitness: 0.475
Mean genetic distance 2.362, standard deviation 0.593
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    7
       64
           118
                    237.5
                            0.431
                                     29
    8
       48 132
                    223.4
                            0.518
                                      6
Total extinctions: 0
Generation time: 16.898 sec (16.761 average)
 ***** Running generation 852 *****
Population's average fitness: 28.08808 stdev: 126.36967
Best fitness: 260.17743 - size: (25, 37) - species 8 - id 195705
```

```
Average adjusted fitness: 0.416
Mean genetic distance 2.432, standard deviation 0.527
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    7
                   245.6
       65
             116
                            0.380
            134 260.2
       49
                            0.453
                                     7
    8
Total extinctions: 0
Generation time: 15.873 sec (16.689 average)
***** Running generation 853 *****
Population's average fitness: 31.52272 stdev: 128.50828
Best fitness: 249.86373 - size: (24, 42) - species 7 - id 196212
Average adjusted fitness: 0.454
Mean genetic distance 2.427, standard deviation 0.502
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    7
       66 115 249.9 0.418
                                    31
    8
       50
           135
                  238.0
                            0.490
Total extinctions: 0
Generation time: 16.736 sec (16.711 average)
***** Running generation 854 *****
Population's average fitness: 29.92522 stdev: 126.36846
Best fitness: 269.96336 - size: (26, 39) - species 7 - id 196547
Average adjusted fitness: 0.411
Mean genetic distance 2.396, standard deviation 0.544
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    7
       67 118 270.0 0.401
    8
       51
           132
                 243.3 0.422
Total extinctions: 0
Generation time: 16.249 sec (16.705 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-854
***** Running generation 855 *****
Population's average fitness: 36.87361 stdev: 128.26009
Best fitness: 263.39179 - size: (26, 39) - species 7 - id 196764
Average adjusted fitness: 0.464
Mean genetic distance 2.389, standard deviation 0.520
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    7
                   263.4
       68
             121
                            0.457
       52
           129
                 242.3
                            0.471
    8
                                    10
Total extinctions: 0
Generation time: 16.624 sec (16.684 average)
***** Running generation 856 *****
Population's average fitness: 31.37841 stdev: 123.33543
Best fitness: 247.62813 - size: (24, 37) - species 8 - id 196694
Average adjusted fitness: 0.436
Mean genetic distance 2.444, standard deviation 0.499
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== =====
       69
           122 244.2 0.428
    8
       53
           128 247.6 0.445
                                    11
Total extinctions: 0
Generation time: 16.934 sec (16.674 average)
***** Running generation 857 *****
Population's average fitness: 36.08757 stdev: 128.89056
Best fitness: 247.94826 - size: (26, 44) - species 7 - id 197140
Average adjusted fitness: 0.465
Mean genetic distance 2.512, standard deviation 0.516
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                 247.9
       70
           117
                          0.413
    8
       54
           133 238.2 0.516
                                    12
Total extinctions: 0
Generation time: 16.527 sec (16.592 average)
 ***** Running generation 858 *****
Population's average fitness: 44.03230 stdev: 125.04648
Best fitness: 258.41813 - size: (25, 36) - species 8 - id 197183
Average adjusted fitness: 0.467
Mean genetic distance 2.469, standard deviation 0.501
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
           122
        71
                  252.4
                           0.475
                   258.4
                            0.460
       55
            128
                                    13
    8
Total extinctions: 0
Generation time: 17.699 sec (16.751 average)
 ***** Running generation 859 *****
Population's average fitness: 33.08078 stdev: 131.93117
Best fitness: 245.89430 - size: (26, 44) - species 7 - id 197140
Average adjusted fitness: 0.450
Mean genetic distance 2.396, standard deviation 0.550
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    7
       72
           118
                   245.9
                            0.411
    8
        56
            132
                   240.1
                            0.490
Total extinctions: 0
Generation time: 15.724 sec (16.662 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-859
***** Running generation 860 *****
Population's average fitness: 32.71511 stdev: 123.73282
Best fitness: 253.29661 - size: (27, 44) - species 7 - id 197918
Average adjusted fitness: 0.431
Mean genetic distance 2.368, standard deviation 0.647
Population of 250 members in 2 species:
       age size fitness adj fit stag
```

====

```
73
             120
                   253.3
                            0.421
                                     6
        57
            130
                   225.4
                            0.441
                                    15
Total extinctions: 0
Generation time: 16.234 sec (16.550 average)
 ***** Running generation 861 *****
Population's average fitness: 25.12688 stdev: 126.57669
Best fitness: 252.76811 - size: (25, 38) - species 8 - id 197788
Average adjusted fitness: 0.422
Mean genetic distance 2.400, standard deviation 0.593
Population of 250 members in 2 species:
       age size fitness adj fit stag
       === ==== ===== ====
    7
       74
           120 238.2 0.402
                                    7
                   252.8 0.441
    8
       58
           130
                                    16
Total extinctions: 0
Generation time: 15.748 sec (16.435 average)
***** Running generation 862 *****
Population's average fitness: 30.71089 stdev: 125.71641
Best fitness: 272.11993 - size: (25, 38) - species 8 - id 197788
Average adjusted fitness: 0.392
Mean genetic distance 2.458, standard deviation 0.550
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    7 75 121 238.7 0.378
       59 129 272.1 0.405
    Я
Total extinctions: 0
Generation time: 16.351 sec (16.482 average)
***** Running generation 863 *****
Population's average fitness: 39.73033 stdev: 127.28313
Best fitness: 242.29656 - size: (27, 43) - species 7 - id 198453
Average adjusted fitness: 0.483
Mean genetic distance 2.496, standard deviation 0.520
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
       === ==== ===== ====
    7
       76 122 242.3
                           0.469
                   234.4
       60
           128
                            0.497
Total extinctions: 0
Generation time: 16.532 sec (16.462 average)
 ***** Running generation 864 *****
Population's average fitness: 40.70933 stdev: 125.34708
Best fitness: 265.49175 - size: (28, 48) - species 7 - id 198813
Average adjusted fitness: 0.434
Mean genetic distance 2.406, standard deviation 0.570
Population of 250 members in 2 species:
       age size fitness adj fit stag
       === ==== ===== ====
    7
        77
            118
                   265.5
                            0.397
                                    10
            132
                   257.7
    8
        61
                            0.470
                                     2
Total extinctions: 0
```

```
Generation time: 16.945 sec (16.532 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-864
***** Running generation 865 *****
Population's average fitness: 50.63560 stdev: 129.30737
Best fitness: 260.08766 - size: (24, 31) - species 8 - id 198920
Average adjusted fitness: 0.461
Mean genetic distance 2.458, standard deviation 0.581
Population of 250 members in 2 species:
       age size fitness adj fit stag
       === ==== ===== ====
           119
                   240.7
    7
        78
                           0.436
                                    11
       62 131 260.1 0.487
Total extinctions: 0
Generation time: 16.971 sec (16.566 average)
***** Running generation 866 *****
Population's average fitness: 43.98984 stdev: 128.22169
Best fitness: 267.70774 - size: (23, 30) - species 8 - id 198989
Average adjusted fitness: 0.447
Mean genetic distance 2.488, standard deviation 0.628
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
           114
                          0.390
    7
       79
                 239.6
       63
           136 267.7 0.505
    8
Total extinctions: 0
Generation time: 16.864 sec (16.559 average)
***** Running generation 867 *****
Population's average fitness: 44.40179 stdev: 126.07023
Best fitness: 255.22862 - size: (27, 43) - species 8 - id 199508
Average adjusted fitness: 0.467
Mean genetic distance 2.501, standard deviation 0.678
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
       80 115 235.7 0.436
    7
                                   13
        64
                   255.2
                            0.498
           135
Total extinctions: 0
Generation time: 17.349 sec (16.642 average)
 ***** Running generation 868 *****
Population's average fitness: 37.03997 stdev: 124.54244
Best fitness: 262.16093 - size: (26, 42) - species 8 - id 199703
Average adjusted fitness: 0.428
Mean genetic distance 2.478, standard deviation 0.705
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== ==== ====== ===== ====
       81 113 247.0 0.383 14
    7
           137
                   262.2
                           0.474
    8
       65
Total extinctions: 0
Generation time: 16.789 sec (16.551 average)
```

***** Running generation 869 ***** Population's average fitness: 36.54499 stdev: 126.63544 Best fitness: 253.98743 - size: (25, 41) - species 7 - id 199836 Average adjusted fitness: 0.440 Mean genetic distance 2.503, standard deviation 0.710 Population of 250 members in 2 species: age size fitness adj fit stag 7 82 112 254.0 0.395 15 66 138 238.6 0.485 8 7 Total extinctions: 0 Generation time: 17.062 sec (16.685 average) Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti walker_Run1\neat-checkpoint-869 ***** Running generation 870 ***** Population's average fitness: 45.00050 stdev: 125.79775 Best fitness: 262.93065 - size: (24, 39) - species 7 - id 199899 Average adjusted fitness: 0.448 Mean genetic distance 2.591, standard deviation 0.692 Population of 250 members in 2 species: age size fitness adj fit stag ID ==== === ==== ====== ==== 7 83 118 262.9 0.448 16 8 67 132 240.2 0.449 Total extinctions: 0 Generation time: 17.594 sec (16.821 average) ***** Running generation 871 ***** Population's average fitness: 33.65998 stdev: 122.36745 Best fitness: 235.09565 - size: (24, 39) - species 7 - id 199899 Average adjusted fitness: 0.442 Mean genetic distance 2.492, standard deviation 0.619 Population of 250 members in 2 species: ID age size fitness adj fit stag ==== === 7 84 119 235.1 0.420 17 68 131 231.6 0.463 8 Total extinctions: 0 Generation time: 16.406 sec (16.886 average) ***** Running generation 872 ***** Population's average fitness: 27.29570 stdev: 121.92035 Best fitness: 251.27481 - size: (23, 37) - species 8 - id 200578 Average adjusted fitness: 0.427 Mean genetic distance 2.444, standard deviation 0.583 Population of 250 members in 2 species: age size fitness adj fit stag ==== === ===== ===== ==== 7 85 240.5 0.425 18 122 Ω 69 128 251.3 0.429 Total extinctions: 0 Generation time: 16.664 sec (16.918 average)

***** Running generation 873 *****

```
Population's average fitness: 19.30831 stdev: 121.68508
Best fitness: 249.24834 - size: (23, 27) - species 8 - id 200915
Average adjusted fitness: 0.408
Mean genetic distance 2.477, standard deviation 0.580
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    7
       86
            119
                 222.7
                            0.378
                                     19
       70 131
    8
                   249.2
                            0.438
                                     11
Total extinctions: 0
Generation time: 16.457 sec (16.910 average)
***** Running generation 874 *****
Population's average fitness: 39.51206 stdev: 131.47400
Best fitness: 245.14545 - size: (26, 41) - species 7 - id 201059
Average adjusted fitness: 0.454
Mean genetic distance 2.436, standard deviation 0.611
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    7
       87
             124
                   245.1
                            0.468
                                     20
       71 126
                 234.5
                            0.440
                                     12
    8
Total extinctions: 0
Generation time: 16.412 sec (16.857 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-874
 ***** Running generation 875 *****
Population's average fitness: 13.34701 stdev: 125.88380
Best fitness: 254.00838 - size: (24, 35) - species 8 - id 201166
Average adjusted fitness: 0.413
Mean genetic distance 2.557, standard deviation 0.590
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    7
       88 117
                                     21
                   232.8
                            0.364
    8
        72
             133
                   254.0
                            0.461
                                     13
Total extinctions: 0
Generation time: 14.864 sec (16.646 average)
***** Running generation 876 *****
Population's average fitness: 35.52775 stdev: 128.25608
Best fitness: 254.98796 - size: (28, 43) - species 8 - id 201258
Average adjusted fitness: 0.441
Mean genetic distance 2.457, standard deviation 0.612
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ---- --- ---- -----
    7
       89
           118
                   241.1
                            0.421
                                     22
       73 132
    8
                   255.0
                            0.460
                                     14
Total extinctions: 0
Generation time: 15.490 sec (16.509 average)
 ***** Running generation 877 *****
Population's average fitness: 54.35970 stdev: 131.36823
Best fitness: 253.31288 - size: (22, 30) - species 8 - id 201773
```

```
Average adjusted fitness: 0.525
Mean genetic distance 2.556, standard deviation 0.568
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    7
                   237.5
                            0.522
       90
             121
            129 253.3
       74
                           0.527
                                    15
    8
Total extinctions: 0
Generation time: 16.269 sec (16.401 average)
***** Running generation 878 *****
Population's average fitness: 32.59584 stdev: 123.24376
Best fitness: 252.20401 - size: (26, 42) - species 7 - id 201899
Average adjusted fitness: 0.450
Mean genetic distance 2.552, standard deviation 0.579
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    7
      91 122
                 252.2 0.446 24
    8
        75
            128
                 234.3
                           0.454
                                    16
Total extinctions: 0
Generation time: 15.545 sec (16.276 average)
***** Running generation 879 *****
Population's average fitness: 21.62146 stdev: 127.80501
Best fitness: 258.03410 - size: (26, 44) - species 7 - id 202315
Average adjusted fitness: 0.407
Mean genetic distance 2.548, standard deviation 0.570
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    7
       92 126 258.0 0.422 25
    8
       76
           124
                 255.5 0.391
                                   17
Total extinctions: 0
Generation time: 15.028 sec (16.073 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-879
***** Running generation 880 *****
Population's average fitness: 37.86565 stdev: 129.33980
Best fitness: 250.82109 - size: (28, 42) - species 7 - id 201333
Average adjusted fitness: 0.446
Mean genetic distance 2.619, standard deviation 0.601
Population of 250 members in 3 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    7
       93
           125
                   250.8
                           0.444
                 238.2
        77
           117
                            0.447
                                    18
    8
    9
        0
           8
Total extinctions: 0
Generation time: 15.466 sec (15.860 average)
***** Running generation 881 *****
Population's average fitness: 38.27352 stdev: 126.73644
Best fitness: 233.24309 - size: (29, 42) - species 7 - id 201966
Average adjusted fitness: 0.456
```

```
Mean genetic distance 2.692, standard deviation 0.586
```

```
Mean genetic distance 2.692, standard deviation 0.58 Population of 250 members in 3 species:
```

| ID | age | size | fitness | adj fit | stag |
|------|-----|------|---------|---------|------|
| ==== | === | ==== | ====== | ====== | ==== |
| 7 | 94 | 108 | 233.2 | 0.494 | 27 |
| 8 | 78 | 64 | 225.5 | 0.469 | 19 |
| 9 | 1 | 78 | 222.2 | 0.404 | 0 |

Total extinctions: 0

Generation time: 16.409 sec (15.860 average)

***** Running generation 882 *****

Population's average fitness: 24.65116 stdev: 122.58834

Best fitness: 246.83285 - size: (28, 46) - species 7 - id 202931

Species 8 with 64 members is stagnated: removing it

Average adjusted fitness: 0.450

Mean genetic distance 2.756, standard deviation 0.747

Population of 250 members in 2 species:

| ID | age | size | fitness | adj fit | stag |
|------|-----|------|---------|---------|------|
| ==== | === | ==== | ====== | ====== | ==== |
| 7 | 95 | 133 | 246.8 | 0.443 | 28 |
| 9 | 2 | 117 | 241.8 | 0.456 | 0 |

Total extinctions: 0

Generation time: 15.228 sec (15.717 average)

***** Running generation 883 *****

Population's average fitness: 21.02769 stdev: 124.40195

Best fitness: 247.33416 - size: (28, 46) - species 7 - id 202931

Average adjusted fitness: 0.410

Mean genetic distance 2.793, standard deviation 0.690

Population of 250 members in 3 species:

| ID | age | size | fitness | adj fit | stag |
|------|-----|------|---------|---------|------|
| ==== | === | ==== | ====== | ====== | ==== |
| 7 | 96 | 128 | 247.3 | 0.442 | 29 |
| 9 | 3 | 116 | 237.7 | 0.377 | 1 |
| 10 | 0 | 6 | | | 0 |

Total extinctions: 0

Generation time: 15.345 sec (15.605 average)

***** Running generation 884 *****

Population's average fitness: 6.52367 stdev: 118.54866

Best fitness: 237.26868 - size: (24, 38) - species 7 - id 203472

Average adjusted fitness: 0.487

Mean genetic distance 2.813, standard deviation 0.639

Population of 250 members in 3 species:

| • | | | | • | |
|------|-----|------|---------|---------|------|
| ID | age | size | fitness | adj fit | stag |
| ==== | === | ==== | ====== | ====== | ==== |
| 7 | 97 | 13 | 237.3 | 0.399 | 30 |
| 9 | 4 | 88 | 233.5 | 0.348 | 2 |
| 10 | 1 | 149 | 230.7 | 0.714 | 0 |

Total extinctions: 0

Generation time: 14.376 sec (15.402 average)

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***** Running generation 885 *****

```
Population's average fitness: 9.32633 stdev: 120.72265
Best fitness: 240.67583 - size: (24, 38) - species 7 - id 203472
Average adjusted fitness: 0.425
Mean genetic distance 2.711, standard deviation 0.679
Population of 250 members in 3 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    7
       98
           52 240.7 0.466
       5 81 220.7
                            0.377
                                     3
    9
   10
         2
           117
                   224.6
                            0.433
Total extinctions: 0
Generation time: 15.331 sec (15.449 average)
 ***** Running generation 886 *****
Population's average fitness: 24.77005 stdev: 119.49184
Best fitness: 226.69011 - size: (29, 45) - species 10 - id 203461
Species 7 with 52 members is stagnated: removing it
Average adjusted fitness: 0.471
Mean genetic distance 2.578, standard deviation 0.750
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
                 222.3
                          0.480
        6
            116
                   226.7
                            0.463
   10
         3 134
Total extinctions: 0
Generation time: 16.194 sec (15.519 average)
***** Running generation 887 *****
Population's average fitness: 19.26971 stdev: 125.30399
Best fitness: 241.99188 - size: (29, 41) - species 10 - id 204104
Average adjusted fitness: 0.503
Mean genetic distance 2.569, standard deviation 0.771
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
        7
            117
                   232.9
                            0.479
   10
        4
            133
                   242.0
                            0.528
Total extinctions: 0
Generation time: 16.143 sec (15.506 average)
 ***** Running generation 888 *****
Population's average fitness: 13.92943 stdev: 123.67707
Best fitness: 267.51087 - size: (28, 41) - species 9 - id 204175
Average adjusted fitness: 0.369
Mean genetic distance 2.580, standard deviation 0.781
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    9
       8 123
                   267.5
                            0.382
   10
         5
            127
                   242.2
                            0.356
Total extinctions: 0
Generation time: 15.331 sec (15.485 average)
 ***** Running generation 889 *****
Population's average fitness: 24.65822 stdev: 121.98834
```

```
Best fitness: 264.04055 - size: (28, 41) - species 9 - id 204175
Average adjusted fitness: 0.405
Mean genetic distance 2.537, standard deviation 0.790
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
           126 264.0
    9
        9
                           0.417
   10
        6 124 230.0 0.393
Total extinctions: 0
Generation time: 15.962 sec (15.578 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-889
 ***** Running generation 890 *****
Population's average fitness: 26.46040 stdev: 124.35256
Best fitness: 261.58541 - size: (28, 41) - species 10 - id 204082
Average adjusted fitness: 0.396
Mean genetic distance 2.479, standard deviation 0.807
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    9 10 124 248.0 0.384
           126 261.6 0.407
   10
        7
Total extinctions: 0
Generation time: 15.832 sec (15.615 average)
***** Running generation 891 *****
Population's average fitness: 22.65863 stdev: 123.35940
Best fitness: 242.71818 - size: (28, 41) - species 9 - id 204175
Average adjusted fitness: 0.423
Mean genetic distance 2.492, standard deviation 0.783
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
 ==== === ===== ===== ====
    9 11 130 242.7 0.462
   10
       8 120 229.8 0.383
                                    1
Total extinctions: 0
Generation time: 15.579 sec (15.532 average)
***** Running generation 892 *****
Population's average fitness: 15.31127 stdev: 121.01191
Best fitness: 252.28454 - size: (28, 41) - species 9 - id 204175
Average adjusted fitness: 0.405
Mean genetic distance 2.498, standard deviation 0.790
Population of 250 members in 2 species:
       age size fitness adj fit stag
  9
        12
           125
                 252.3
                           0.388
   10
        9
           125
                   245.0
                           0.423
Total extinctions: 0
Generation time: 15.199 sec (15.529 average)
***** Running generation 893 *****
Population's average fitness: 21.09574 stdev: 120.70199
Best fitness: 247.91081 - size: (29, 43) - species 10 - id 205055
Average adjusted fitness: 0.405
```

```
Mean genetic distance 2.533, standard deviation 0.815
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
    9 13 128 244.9 0.424
       10 122 247.9 0.386
   10
Total extinctions: 0
Generation time: 15.541 sec (15.549 average)
***** Running generation 894 *****
Population's average fitness: 11.72429 stdev: 123.92270
Best fitness: 260.32686 - size: (28, 36) - species 9 - id 205562
Average adjusted fitness: 0.394
Mean genetic distance 2.565, standard deviation 0.816
Population of 250 members in 2 species:
       age size fitness adj fit stag
 9 14 130 260.3 0.414
   10 11 120 232.9 0.374
Total extinctions: 0
Generation time: 15.116 sec (15.623 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-894
***** Running generation 895 *****
Population's average fitness: 19.52357 stdev: 122.11643
Best fitness: 239.05029 - size: (25, 34) - species 9 - id 205217
Average adjusted fitness: 0.417
Mean genetic distance 2.597, standard deviation 0.831
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
    9 15 131 239.1 0.438
   10
       12 119
                  236.4
                           0.395
Total extinctions: 0
Generation time: 15.451 sec (15.635 average)
***** Running generation 896 *****
Population's average fitness: 20.76672 stdev: 123.82130
Best fitness: 254.48804 - size: (28, 40) - species 10 - id 206069
Average adjusted fitness: 0.397
Mean genetic distance 2.620, standard deviation 0.811
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    9
      16 128 251.8 0.393
           122
   10
       13
                   254.5
                           0.400
Total extinctions: 0
Generation time: 15.494 sec (15.565 average)
***** Running generation 897 *****
Population's average fitness: 12.92416 stdev: 120.76731
Best fitness: 242.52651 - size: (28, 40) - species 9 - id 206235
Average adjusted fitness: 0.396
Mean genetic distance 2.602, standard deviation 0.791
Population of 250 members in 2 species:
```

```
age size fitness adj fit stag
  TD
           ==== ====== =====
                 242.5
    9
        17
            129
                            0.406
   10
       14 121 242.1
                            0.386
                                     7
Total extinctions: 0
Generation time: 15.444 sec (15.495 average)
 ***** Running generation 898 *****
Population's average fitness: 20.35383 stdev: 125.52233
Best fitness: 249.67324 - size: (27, 32) - species 10 - id 206540
Average adjusted fitness: 0.414
Mean genetic distance 2.609, standard deviation 0.782
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    9
       18
            125
                   236.6
                            0.400
   10
        15
           125
                   249.7
                            0.428
Total extinctions: 0
Generation time: 15.422 sec (15.504 average)
 ***** Running generation 899 *****
Population's average fitness: 24.43229 stdev: 120.53527
Best fitness: 258.08356 - size: (28, 39) - species 9 - id 206765
Average adjusted fitness: 0.417
Mean genetic distance 2.582, standard deviation 0.795
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    9 19 123
                            0.404
                   258.1
                                    11
   10
        16 127
                   221.7
                            0.430
Total extinctions: 0
Generation time: 15.850 sec (15.493 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-899
 ***** Running generation 900 *****
Population's average fitness: 20.47215 stdev: 126.92250
Best fitness: 253.46679 - size: (28, 39) - species 9 - id 204890
Average adjusted fitness: 0.422
Mean genetic distance 2.573, standard deviation 0.822
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    9
        20
            122
                 253.5
                            0.409
                                    12
                   239.9
                            0.436
   10
       17 128
Total extinctions: 0
Generation time: 13.816 sec (15.291 average)
 ***** Running generation 901 *****
Population's average fitness: 35.67983 stdev: 129.33660
Best fitness: 250.61426 - size: (27, 35) - species 10 - id 207197
Average adjusted fitness: 0.491
Mean genetic distance 2.613, standard deviation 0.821
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
```

```
9
        21
             125
                    247.7
                             0.500
                                      13
    10
        18
             125
                    250.6
                             0.482
                                      11
Total extinctions: 0
Generation time: 16.026 sec (15.336 average)
***** Running generation 902 *****
Population's average fitness: 10.64936 stdev: 123.01318
Best fitness: 246.60952 - size: (27, 35) - species 10 - id 207245
Average adjusted fitness: 0.450
Mean genetic distance 2.695, standard deviation 0.763
Population of 250 members in 2 species:
       age size fitness adj fit stag
            ====
                 ======= =====
       ===
    9
       22
             124
                    232.3
                             0.443
                                      14
   10
       19
            126
                    246.6
                             0.456
                                      12
Total extinctions: 0
Generation time: 15.198 sec (15.336 average)
***** Running generation 903 *****
Population's average fitness: 28.36732 stdev: 126.31147
Best fitness: 242.43699 - size: (27, 36) - species 10 - id 207006
Average adjusted fitness: 0.428
Mean genetic distance 2.652, standard deviation 0.855
Population of 250 members in 2 species:
       age size fitness adj fit stag
            ==== ====== =====
  ==== ===
    9
             119
                    237.9
                             0.389
       23
                                      15
    10
       20
            131
                    242.4
                             0.466
                                      13
Total extinctions: 0
Generation time: 15.976 sec (15.379 average)
***** Running generation 904 *****
Population's average fitness: 36.24231 stdev: 125.10671
Best fitness: 243.76185 - size: (29, 39) - species 10 - id 208008
Average adjusted fitness: 0.444
Mean genetic distance 2.628, standard deviation 0.849
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
    9
        24
                    235.9
                             0.417
             118
             132
                    243.8
   10
       21
                             0.471
                                      14
Total extinctions: 0
Generation time: 16.031 sec (15.471 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-904
 ***** Running generation 905 *****
Population's average fitness: 37.16581 stdev: 127.54483
Best fitness: 262.33551 - size: (28, 39) - species 9 - id 208122
Average adjusted fitness: 0.478
Mean genetic distance 2.700, standard deviation 0.782
Population of 250 members in 2 species:
       age size fitness adj fit stag
   ΙD
  ====
       ===
            ====
                 ====== =====
    9
        25
             119
                    262.3
                             0.457
                                      17
   10
        22
             131
                    237.5
                             0.500
                                      15
```

Generation time: 15.926 sec (15.518 average)

Total extinctions: 0

```
***** Running generation 906 *****
Population's average fitness: 28.65212 stdev: 128.11593
Best fitness: 248.87339 - size: (29, 39) - species 10 - id 208008
Average adjusted fitness: 0.493
Mean genetic distance 2.680, standard deviation 0.771
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ====== ===== ====
    9 26
           121
                  242.7
                         0.488
                                   18
   10
       23
           129
                 248.9
                           0.498
                                    16
Total extinctions: 0
Generation time: 15.620 sec (15.531 average)
***** Running generation 907 *****
Population's average fitness: 31.91938 stdev: 127.67507
Best fitness: 268.51946 - size: (28, 35) - species 9 - id 208508
Average adjusted fitness: 0.412
Mean genetic distance 2.694, standard deviation 0.761
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    9
       27
           120 268.5 0.396
           130
                 238.4 0.429
   10
       24
                                    17
Total extinctions: 0
Generation time: 16.070 sec (15.593 average)
***** Running generation 908 *****
Population's average fitness: 17.13123 stdev: 123.60221
Best fitness: 241.52106 - size: (29, 39) - species 10 - id 208008
Average adjusted fitness: 0.413
Mean genetic distance 2.742, standard deviation 0.790
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    9 28 122 227.3 0.408
   10
       25
           128 241.5 0.417
                                    18
Total extinctions: 0
Generation time: 14.769 sec (15.528 average)
***** Running generation 909 *****
Population's average fitness: 16.89388 stdev: 123.88322
Best fitness: 250.42494 - size: (29, 39) - species 10 - id 209106
Average adjusted fitness: 0.408
Mean genetic distance 2.818, standard deviation 0.753
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    9
       29
           123
                 246.2 0.402
                                    2
                 250.4
                           0.415
   10
       26
           127
Total extinctions: 0
Generation time: 15.260 sec (15.469 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-909
```

```
***** Running generation 910 *****
Population's average fitness: 25.73122 stdev: 122.91694
Best fitness: 237.26157 - size: (28, 40) - species 10 - id 209422
Average adjusted fitness: 0.535
Mean genetic distance 2.726, standard deviation 0.698
Population of 250 members in 3 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    9
           129 235.3 0.580
       30
       27 61 237.3
   10
                            0.490
                                    20
           60
        0
   11
Total extinctions: 0
Generation time: 15.768 sec (15.664 average)
***** Running generation 911 *****
Population's average fitness: 29.55707 stdev: 122.57901
Best fitness: 237.49910 - size: (30, 41) - species 11 - id 209595
Species 10 with 61 members is stagnated: removing it
Average adjusted fitness: 0.407
Mean genetic distance 2.733, standard deviation 0.796
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
    9
        31
             152
                   232.9
                            0.452
        1
            98
                   237.5
                            0.363
   11
Total extinctions: 0
Generation time: 16.281 sec (15.690 average)
***** Running generation 912 *****
Population's average fitness: 32.50265 stdev: 125.36866
Best fitness: 242.75125 - size: (27, 42) - species 9 - id 209758
Average adjusted fitness: 0.514
Mean genetic distance 2.637, standard deviation 0.849
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
    9
       32 143
                  242.8
                            0.554
        2
             107
                   238.5
                            0.474
Total extinctions: 0
Generation time: 17.303 sec (15.900 average)
 ***** Running generation 913 *****
Population's average fitness: 24.88934 stdev: 120.23378
Best fitness: 235.85732 - size: (29, 45) - species 9 - id 209767
Average adjusted fitness: 0.424
Mean genetic distance 2.702, standard deviation 0.806
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
                 235.9 0.394
    9
       33 130
           120
                   230.0
                            0.453
   11
        3
Total extinctions: 0
Generation time: 15.296 sec (15.832 average)
```

***** Running generation 914 *****

Population's average fitness: 30.46905 stdev: 127.09758

Best fitness: 245.03610 - size: (29, 45) - species 9 - id 210290

Average adjusted fitness: 0.443

Mean genetic distance 2.706, standard deviation 0.782

Population of 250 members in 2 species:

Total extinctions: 0

Generation time: 15.986 sec (15.828 average)

Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMultiwalker_Run1\neat-checkpoint-914

***** Running generation 915 *****

Population's average fitness: 23.41451 stdev: 121.67461

Best fitness: 243.00037 - size: (29, 40) - species 9 - id 210517

Average adjusted fitness: 0.439

Mean genetic distance 2.620, standard deviation 0.804

Population of 250 members in 2 species:

Total extinctions: 0

Generation time: 15.794 sec (15.815 average)

***** Running generation 916 *****

Population's average fitness: 38.59855 stdev: 121.29655

Best fitness: 243.88318 - size: (28, 45) - species 11 - id 209924

Average adjusted fitness: 0.459

Mean genetic distance 2.629, standard deviation 0.750

Population of 250 members in 3 species:

Total extinctions: 0

Generation time: 16.801 sec (15.933 average)

***** Running generation 917 *****

Population's average fitness: 11.35801 stdev: 120.67514

Best fitness: 239.34793 - size: (27, 33) - species 9 - id 210861

Average adjusted fitness: 0.362

Mean genetic distance 2.701, standard deviation 0.692

Population of 250 members in 3 species:

| stag | adj fit | fitness | size | age | ID |
|------|---------|---------|------|-----|------|
| ==== | ====== | ====== | ==== | === | ==== |
| 10 | 0.460 | 239.3 | 120 | 37 | 9 |
| 1 | 0.360 | 222.0 | 103 | 7 | 11 |
| 0 | 0.265 | 172.7 | 27 | 1 | 12 |

Total extinctions: 0

Generation time: 15.151 sec (15.841 average)

***** Running generation 918 *****

Population's average fitness: 20.44294 stdev: 115.87684

Best fitness: 239.33008 - size: (27, 33) - species 9 - id 210861

Average adjusted fitness: 0.457

Mean genetic distance 2.733, standard deviation 0.692

Population of 249 members in 3 species:

| ID | age | size | fitness | adj fit | stag |
|------|-----|------|---------|---------|------|
| ==== | === | ==== | ====== | ====== | ==== |
| 9 | 38 | 99 | 239.3 | 0.487 | 11 |
| 11 | 8 | 94 | 222.3 | 0.468 | 2 |
| 12 | 2 | 56 | 178.3 | 0.416 | 6 |

Total extinctions: 0

Generation time: 16.018 sec (15.966 average)

***** Running generation 919 *****

Population's average fitness: 29.24081 stdev: 117.58928

Best fitness: 255.85030 - size: (27, 33) - species 9 - id 210861

Average adjusted fitness: 0.399

Mean genetic distance 2.654, standard deviation 0.741

Population of 249 members in 3 species:

| ID | age | size | fitness | adj fit | stag |
|------|-----|------|---------|---------|------|
| ==== | === | ==== | ====== | ====== | ==== |
| 9 | 39 | 67 | 255.9 | 0.431 | 12 |
| 11 | 9 | 93 | 234.9 | 0.438 | 3 |
| 12 | 3 | 89 | 189.4 | 0.329 | 0 |

Total extinctions: 0

Generation time: 16.211 sec (16.061 average)

Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMultiwalker_Run1\neat-checkpoint-919

***** Running generation 920 *****

Population's average fitness: 18.47849 stdev: 120.46416

Best fitness: 281.62141 - size: (27, 33) - species 9 - id 210861

Average adjusted fitness: 0.371

Mean genetic distance 2.623, standard deviation 0.760

Population of 249 members in 3 species:

| stag | adj fit | fitness | size | age | ID |
|------|---------|---------|------|-----|------|
| ==== | ====== | ====== | ==== | === | ==== |
| 0 | 0.360 | 281.6 | 56 | 40 | 9 |
| 4 | 0.381 | 229.2 | 89 | 10 | 11 |
| 0 | 0.373 | 262.8 | 104 | 4 | 12 |

Total extinctions: 0

Generation time: 15.384 sec (16.023 average)

***** Running generation 921 *****

Population's average fitness: 24.52117 stdev: 123.85658

Best fitness: 248.75634 - size: (28, 35) - species 9 - id 211918

Average adjusted fitness: 0.397

Mean genetic distance 2.661, standard deviation 0.741

Population of 249 members in 3 species:

| ID | age | size | fitness | adj fit | stag |
|------|-----|------|---------|---------|------|
| ==== | === | ==== | ====== | ====== | ==== |
| 9 | 41 | 87 | 248.8 | 0.374 | 1 |
| 11 | 11 | 84 | 226.4 | 0.375 | 5 |
| 12 | 5 | 78 | 231.7 | 0.441 | 1 |

Total extinctions: 0

```
Generation time: 15.455 sec (15.940 average)
 ***** Running generation 922 *****
Population's average fitness: 18.56885 stdev: 122.61842
Best fitness: 239.47439 - size: (28, 37) - species 11 - id 211040
Average adjusted fitness: 0.425
Mean genetic distance 2.633, standard deviation 0.747
Population of 249 members in 3 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    9 42 78 218.1 0.375
           86
                 239.5
        12
                            0.451
   11
   12
        6
            85
                   239.1
                            0.450
Total extinctions: 0
Generation time: 15.326 sec (15.742 average)
***** Running generation 923 *****
Population's average fitness: 31.71869 stdev: 126.48398
Best fitness: 254.79306 - size: (27, 32) - species 9 - id 212179
Average adjusted fitness: 0.444
Mean genetic distance 2.530, standard deviation 0.778
Population of 249 members in 3 species:
       age size fitness adj fit stag
           ==== ====== =====
    9 43
           82
                 254.8
                          0.440
   11
        13
             87
                   240.7
                            0.468
                                     7
   12
        7
             80
                   234.5
                            0.423
Total extinctions: 0
Generation time: 15.226 sec (15.735 average)
***** Running generation 924 *****
Population's average fitness: 33.15957 stdev: 122.34621
Best fitness: 238.59211 - size: (28, 37) - species 11 - id 212334
Average adjusted fitness: 0.440
Mean genetic distance 2.573, standard deviation 0.738
Population of 250 members in 3 species:
      age size fitness adj fit stag
  ID
  ==== === ===== ===== ====
    9 44 79 235.7 0.425
        14
             85
                   238.6
                            0.435
   11
   12
        8
            86
                   232.1
                            0.460
Total extinctions: 0
Generation time: 15.919 sec (15.729 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-924
 ***** Running generation 925 *****
Population's average fitness: 29.15651 stdev: 127.95000
Best fitness: 265.73988 - size: (26, 30) - species 12 - id 212658
Average adjusted fitness: 0.408
Mean genetic distance 2.606, standard deviation 0.727
Population of 250 members in 3 species:
       age size fitness adj fit stag
  ID
  ====
       ===
           9
                            0.407
                                     5
        45
             83
                   260.0
   11
        15
            84
                   240.7
                            0.401
                                     9
```

83

265.7

0.416

```
Total extinctions: 0
Generation time: 17.754 sec (15.925 average)
 ***** Running generation 926 *****
Population's average fitness: 29.01722 stdev: 127.90100
Best fitness: 253.38967 - size: (28, 37) - species 11 - id 211040
Average adjusted fitness: 0.478
Mean genetic distance 2.601, standard deviation 0.736
Population of 250 members in 3 species:
       age size fitness adj fit stag
           ====
                 9
       46
             76
                   238.8
                            0.440
                   253.4
                            0.567
   11
       16
           91
                                     a
   12
       10
            83
                   228.8
                            0.428
                                     1
Total extinctions: 0
Generation time: 17.701 sec (16.015 average)
***** Running generation 927 *****
Population's average fitness: 24.48019 stdev: 126.76464
Best fitness: 255.52234 - size: (28, 35) - species 9 - id 212580
Average adjusted fitness: 0.406
Mean genetic distance 2.620, standard deviation 0.700
Population of 249 members in 3 species:
       age size fitness adj fit stag
  ==== ===
           ====
                 9
             105
                   255.5
                            0.315
       47
   11
       17
           94
                 253.4
                            0.476
            50
                   253.1
                            0.427
   12
       11
Total extinctions: 0
Generation time: 18.029 sec (16.302 average)
***** Running generation 928 *****
Population's average fitness: 31.70112 stdev: 125.16662
Best fitness: 247.59019 - size: (28, 36) - species 11 - id 213370
Average adjusted fitness: 0.469
Mean genetic distance 2.660, standard deviation 0.765
Population of 249 members in 3 species:
  ID
       age size fitness adj fit stag
           ==== ====== =====
    9
       48
             68
                   225.2
                            0.455
                                     8
   11
        18
              96
                   247.6
                            0.553
                                     2
                            0.398
   12
        12
              85
                   229.9
Total extinctions: 0
Generation time: 17.738 sec (16.474 average)
 ***** Running generation 929 *****
Population's average fitness: 20.63997 stdev: 123.89007
Best fitness: 247.87755 - size: (27, 33) - species 11 - id 212499
Average adjusted fitness: 0.407
Mean genetic distance 2.657, standard deviation 0.741
Population of 250 members in 3 species:
       age size fitness adj fit stag
  ΙD
  ====
       ===
           ====
                 =======
    9
                                     9
        49
             73
                   218.2
                            0.379
   11
        19
             95
                   247.9
                            0.459
                                     3
```

```
12
       13
              82
                   242.5
                            0.383
Total extinctions: 0
Generation time: 14.928 sec (16.346 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-929
 ***** Running generation 930 *****
Population's average fitness: 20.00148 stdev: 121.58555
Best fitness: 238.45316 - size: (28, 37) - species 9 - id 212707
Average adjusted fitness: 0.427
Mean genetic distance 2.622, standard deviation 0.777
Population of 249 members in 3 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    9
       50
            83
                   238.5
                           0.397
                                    10
   11
        20
             94
                   232.0
                            0.480
                                     4
   12
        14
            72
                   229.1
                            0.404
Total extinctions: 0
Generation time: 15.925 sec (16.400 average)
 ***** Running generation 931 *****
Population's average fitness: 32.15849 stdev: 125.82152
Best fitness: 243.85793 - size: (28, 38) - species 11 - id 213391
Average adjusted fitness: 0.428
Mean genetic distance 2.631, standard deviation 0.839
Population of 249 members in 3 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    9 51 87
                 231.1 0.409
                                    11
            95
   11
        21
                 243.9
                            0.496
                                     5
                   222.4
   12
        15
                            0.380
                                     6
            67
Total extinctions: 0
Generation time: 15.944 sec (16.449 average)
 ***** Running generation 932 *****
Population's average fitness: 41.23962 stdev: 126.57994
Best fitness: 256.57955 - size: (29, 34) - species 11 - id 214029
Average adjusted fitness: 0.487
Mean genetic distance 2.613, standard deviation 0.810
Population of 250 members in 3 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
       52
                   237.2
                            0.447
    9
             91
                                    12
   11
       22
            92
                   256.6
                            0.518
                                     0
   12
       16
           67
                   229.0
                            0.496
Total extinctions: 0
Generation time: 16.848 sec (16.601 average)
 ***** Running generation 933 *****
Population's average fitness: 38.79906 stdev: 129.72958
Best fitness: 256.12698 - size: (29, 39) - species 11 - id 214528
Average adjusted fitness: 0.440
Mean genetic distance 2.654, standard deviation 0.810
Population of 251 members in 3 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
```

08.11.24, 17:00

```
Exp2NEAT
    9
        53
             92
                   253.6
                            0.425
                                     13
   11
        23
              91
                   256.1
                            0.471
                                     1
   12
        17
              68
                   245.8
                            0.424
                                     8
Total extinctions: 0
Generation time: 16.222 sec (16.701 average)
 ***** Running generation 934 *****
Population's average fitness: 23.87237 stdev: 125.42861
Best fitness: 262.28636 - size: (29, 39) - species 9 - id 214694
Average adjusted fitness: 0.478
Mean genetic distance 2.694, standard deviation 0.718
Population of 251 members in 3 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
    9
       54
             78
                   262.3
                           0.443
                                    14
                   251.4
                            0.497
   11
        24
             89
                                     2
   12
        18
             84
                   242.2
                            0.492
Total extinctions: 0
Generation time: 15.886 sec (16.697 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-934
 ***** Running generation 935 *****
Population's average fitness: 28.50368 stdev: 128.45961
Best fitness: 250.64705 - size: (29, 39) - species 12 - id 214802
Average adjusted fitness: 0.430
Mean genetic distance 2.642, standard deviation 0.736
Population of 250 members in 3 species:
       age size fitness adj fit stag
  TD
           ==== ====== =====
                 227.8 0.384
                                    15
    9
       55
           73
   11
       25
           85 242.1 0.415
                                    3
   12
        19
            92
                   250.6
                            0.490
                                     10
Total extinctions: 0
Generation time: 16.270 sec (16.549 average)
***** Running generation 936 *****
Population's average fitness: 34.55435 stdev: 121.85394
Best fitness: 245.52104 - size: (29, 40) - species 11 - id 215119
Average adjusted fitness: 0.459
Mean genetic distance 2.722, standard deviation 0.709
Population of 250 members in 3 species:
       age size fitness adj fit stag
 ==== ===
           ==== ====== =====
    9
           76 229.9
                          0.434
       56
                                  16
        26
           86
                   245.5
                            0.482
                                     4
   11
   12
        20
             88
                   231.6
                            0.461
Total extinctions: 0
Generation time: 16.716 sec (16.451 average)
***** Running generation 937 *****
Population's average fitness: 5.04943 stdev: 123.85645
```

Mean genetic distance 2.716, standard deviation 0.724 Population of 250 members in 3 species:

Average adjusted fitness: 0.368

Best fitness: 233.61421 - size: (29, 40) - species 11 - id 215420

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```
Exp2NEAT
  ID
       age size fitness adj fit stag
                ====== ===== ====
           ====
                         0.322
    9
             77
                  212.4
                                   17
       57
   11
       27
           87
                233.6 0.389
                                   5
   12
       21
           86
                  232.4
                           0.392
                                   12
Total extinctions: 0
Generation time: 14.108 sec (16.059 average)
***** Running generation 938 *****
Population's average fitness: 39.37796 stdev: 126.96732
Best fitness: 249.39295 - size: (27, 36) - species 12 - id 215555
Average adjusted fitness: 0.476
Mean genetic distance 2.726, standard deviation 0.766
Population of 250 members in 3 species:
       age size fitness adj fit stag
  9
       58
           79
                  222.0
                           0.463
                                   18
   11
       28
           82 230.8
                           0.439
                                   6
   12
       22
           89 249.4
                           0.525
                                   13
Total extinctions: 0
Generation time: 16.509 sec (15.936 average)
 ***** Running generation 939 *****
Population's average fitness: 33.31851 stdev: 126.48011
Best fitness: 243.65805 - size: (28, 32) - species 12 - id 215816
Average adjusted fitness: 0.433
Mean genetic distance 2.696, standard deviation 0.812
Population of 251 members in 3 species:
       age size fitness adj fit stag
  TD
           ==== ====== =====
                 221.9 0.442
                                   19
    9
       59
           83
   11
      29
           83 239.4
                           0.428
                                   7
   12
       23
           85
                   243.7
                           0.428
                                   14
Total extinctions: 0
Generation time: 16.443 sec (16.087 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-939
***** Running generation 940 *****
Population's average fitness: 26.03837 stdev: 123.02086
Best fitness: 252.58626 - size: (28, 39) - species 9 - id 215959
Average adjusted fitness: 0.432
Mean genetic distance 2.699, standard deviation 0.807
Population of 251 members in 3 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    9
        60
             80
                   252.6
                           0.410
   11
       30
             80
                   232.4
                           0.395
                                   8
   12
       24
           91
                   245.2
                           0.489
Total extinctions: 0
Generation time: 15.866 sec (16.081 average)
***** Running generation 941 *****
```

file:///C:/Users/salki/OneDrive/Desktop/Exp2NEAT.html

Population's average fitness: 20.06914 stdev: 127.13529

Average adjusted fitness: 0.438

Best fitness: 254.73854 - size: (28, 30) - species 12 - id 216080

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```
Exp2NEAT
Mean genetic distance 2.701, standard deviation 0.795
Population of 251 members in 3 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
    9 61 79 240.8 0.405 21
                233.1 0.440
   11
      31
            82
                                  9
           90 254.7
   12 25
                           0.468
                                   16
Total extinctions: 0
Generation time: 15.860 sec (16.073 average)
***** Running generation 942 *****
Population's average fitness: 21.56276 stdev: 125.84022
Best fitness: 236.90264 - size: (27, 30) - species 9 - id 216305
Average adjusted fitness: 0.443
Mean genetic distance 2.680, standard deviation 0.757
Population of 250 members in 3 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
    9 62 59 236.9 0.416 22
   11
       32
            86
                  217.4
                          0.476
   12 26 105 232.2 0.436
                                   17
Total extinctions: 0
Generation time: 15.786 sec (15.967 average)
***** Running generation 943 *****
Population's average fitness: 19.92650 stdev: 129.60235
Best fitness: 251.75586 - size: (26, 29) - species 9 - id 216766
Average adjusted fitness: 0.390
Mean genetic distance 2.703, standard deviation 0.733
Population of 250 members in 3 species:
```

ID age size fitness adj fit stag ==== === ====== ===== ==== 9 63 80 251.8 0.389 230.9 82 11 33 0.366 11 12 27 88 248.9 0.415 18

Total extinctions: 0

Generation time: 14.349 sec (15.779 average)

***** Running generation 944 *****

Population's average fitness: 22.09618 stdev: 128.62537 Best fitness: 261.57411 - size: (30, 44) - species 11 - id 216568

Species 9 with 80 members is stagnated: removing it

Average adjusted fitness: 0.406

Mean genetic distance 2.723, standard deviation 0.876

Population of 250 members in 2 species:

| stag | adj fit | fitness | size | age | ID |
|------|---------|---------|------|-----|------|
| ==== | ====== | ====== | ==== | === | ==== |
| 0 | 0.363 | 261.6 | 115 | 34 | 11 |
| 19 | 0.449 | 253.0 | 135 | 28 | 12 |

Total extinctions: 0

Generation time: 15.518 sec (15.742 average)

Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti walker_Run1\neat-checkpoint-944

^{*****} Running generation 945 *****

```
Population's average fitness: 23.96861 stdev: 123.16401
Best fitness: 252.04021 - size: (27, 33) - species 12 - id 217068
Average adjusted fitness: 0.407
Mean genetic distance 2.621, standard deviation 0.947
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
       35
            122
                   244.4
                            0.418
   11
   12
       29 128
                   252.0
                            0.396
                                     20
Total extinctions: 0
Generation time: 16.443 sec (15.760 average)
***** Running generation 946 *****
Population's average fitness: 9.36470 stdev: 123.74231
Best fitness: 254.70226 - size: (30, 42) - species 11 - id 216783
Average adjusted fitness: 0.417
Mean genetic distance 2.560, standard deviation 0.919
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
   11 36
           124
                   254.7
                            0.422
                                     2
   12 30 126 253.1 0.413
                                     21
Total extinctions: 0
Generation time: 15.506 sec (15.639 average)
***** Running generation 947 *****
Population's average fitness: 21.42210 stdev: 125.14964
Best fitness: 252.77573 - size: (27, 33) - species 12 - id 217527
Average adjusted fitness: 0.394
Mean genetic distance 2.635, standard deviation 0.885
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
   11
       37
            128
                   249.6
                            0.415
                                     3
    12
       31
           122
                   252.8
                            0.374
                                     22
Total extinctions: 0
Generation time: 15.706 sec (15.798 average)
***** Running generation 948 *****
Population's average fitness: 20.85688 stdev: 128.74771
Best fitness: 271.96320 - size: (29, 34) - species 12 - id 216672
Average adjusted fitness: 0.430
Mean genetic distance 2.636, standard deviation 0.870
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
  ==== === ====== ===== ====
   11
        38
             121
                   240.3
                            0.395
       32
                            0.466
   12
            129
                 272.0
Total extinctions: 0
Generation time: 15.216 sec (15.669 average)
***** Running generation 949 *****
Population's average fitness: 37.97495 stdev: 124.08853
Best fitness: 235.61980 - size: (28, 39) - species 11 - id 217238
Average adjusted fitness: 0.484
Mean genetic distance 2.606, standard deviation 0.869
```

```
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
   11 39
           123 235.6 0.485
   12 33 127 233.7
                           0.484
                                     1
Total extinctions: 0
Generation time: 16.477 sec (15.673 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-949
***** Running generation 950 *****
Population's average fitness: 23.33294 stdev: 126.81762
Best fitness: 247.60192 - size: (28, 41) - species 11 - id 218283
Average adjusted fitness: 0.404
Mean genetic distance 2.656, standard deviation 0.852
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
   11
      40
           125
                 247.6 0.413
                                     6
        34
           125
                   242.6
                           0.394
   12
Total extinctions: 0
Generation time: 15.346 sec (15.621 average)
***** Running generation 951 *****
Population's average fitness: 27.10534 stdev: 124.36946
Best fitness: 260.14726 - size: (29, 38) - species 11 - id 218605
Average adjusted fitness: 0.415
Mean genetic distance 2.638, standard deviation 0.863
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
   11 41
           127 260.1 0.427
   12
      35
           123
                 234.3 0.404
                                     3
Total extinctions: 0
Generation time: 16.205 sec (15.655 average)
***** Running generation 952 *****
Population's average fitness: 19.78871 stdev: 124.99379
Best fitness: 250.86950 - size: (27, 34) - species 12 - id 218660
Average adjusted fitness: 0.426
Mean genetic distance 2.648, standard deviation 0.862
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
   11 42 126 238.7 0.425
   12 36
           124 250.9
                           0.427
Total extinctions: 0
Generation time: 15.741 sec (15.651 average)
***** Running generation 953 *****
Population's average fitness: 27.16471 stdev: 130.97355
Best fitness: 245.33716 - size: (30, 37) - species 12 - id 219046
Average adjusted fitness: 0.484
Mean genetic distance 2.678, standard deviation 0.852
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ID
```

```
====
                 ======
   11
        43
             127
                   233.3
                            0.495
   12
        37
            123
                   245.3
                            0.473
                                      5
Total extinctions: 0
Generation time: 15.762 sec (15.792 average)
 ***** Running generation 954 *****
Population's average fitness: 0.78800 stdev: 122.72408
Best fitness: 242.85161 - size: (28, 33) - species 12 - id 219237
Average adjusted fitness: 0.391
Mean genetic distance 2.660, standard deviation 0.836
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
   11 44
           122 242.7
                            0.365
                                    10
                   242.9
   12
        38
            128
                            0.417
Total extinctions: 0
Generation time: 14.814 sec (15.722 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-954
***** Running generation 955 *****
Population's average fitness: 20.07707 stdev: 122.18420
Best fitness: 237.78945 - size: (28, 39) - species 11 - id 217238
Average adjusted fitness: 0.427
Mean genetic distance 2.664, standard deviation 0.862
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ===== ===== ====
        45
            118
                   237.8
                            0.390
   12
       39
            132
                   230.9
                            0.464
Total extinctions: 0
Generation time: 15.747 sec (15.652 average)
 ***** Running generation 956 *****
Population's average fitness: 13.74631 stdev: 123.10468
Best fitness: 234.23072 - size: (27, 33) - species 12 - id 219577
Average adjusted fitness: 0.438
Mean genetic distance 2.676, standard deviation 0.891
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
                   224.3
                            0.412
   11
       46
            117
                                     12
   12
        40
            133
                   234.2
                            0.464
Total extinctions: 0
Generation time: 15.258 sec (15.627 average)
 ***** Running generation 957 *****
Population's average fitness: 8.80778 stdev: 120.92529
Best fitness: 241.97280 - size: (27, 32) - species 12 - id 219893
Average adjusted fitness: 0.376
Mean genetic distance 2.732, standard deviation 0.852
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
   11
       47
             122
                 226.4
                            0.384
                                     13
```

```
41
            128
                   242.0
                            0.368
Total extinctions: 0
Generation time: 15.063 sec (15.563 average)
 ***** Running generation 958 *****
Population's average fitness: 0.07834 stdev: 120.07419
Best fitness: 250.29552 - size: (27, 33) - species 12 - id 220123
Average adjusted fitness: 0.362
Mean genetic distance 2.640, standard deviation 0.878
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ====
           11
       48
            123
                   240.6
                            0.357
   12 42
           127 250.3 0.367
                                    10
Total extinctions: 0
Generation time: 14.149 sec (15.456 average)
***** Running generation 959 *****
Population's average fitness: 23.37707 stdev: 126.58646
Best fitness: 244.58706 - size: (31, 41) - species 12 - id 219895
Average adjusted fitness: 0.434
Mean genetic distance 2.553, standard deviation 0.946
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ===== ===== ====
   11
       49
            125
                   235.6
                            0.442
   12
       43
            125
                   244.6
                            0.427
Total extinctions: 0
Generation time: 15.512 sec (15.360 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-959
***** Running generation 960 *****
Population's average fitness: 47.37898 stdev: 123.78964
Best fitness: 250.95463 - size: (28, 39) - species 11 - id 217238
Average adjusted fitness: 0.491
Mean genetic distance 2.549, standard deviation 0.939
Population of 250 members in 2 species:
  ID
       age size fitness adj fit stag
  ==== === ===== ===== ====
   11
       50 127 251.0
                            0.504
                                    16
                   229.4
   12
       44
           123
                            0.478
                                    12
Total extinctions: 0
Generation time: 17.368 sec (15.562 average)
 ***** Running generation 961 *****
Population's average fitness: 15.08529 stdev: 126.33999
Best fitness: 251.66917 - size: (26, 38) - species 11 - id 220826
Average adjusted fitness: 0.416
Mean genetic distance 2.753, standard deviation 0.847
Population of 250 members in 3 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
   11
       51
            131
                   251.7
                            0.452
                                    17
           99 239.7
                            0.380
                                  13
   12
        45
   13
            20
                                     0
         0
```

```
Total extinctions: 0
Generation time: 14.438 sec (15.385 average)
***** Running generation 962 *****
Population's average fitness: 12.46396 stdev: 123.66994
Best fitness: 256.40575 - size: (28, 35) - species 12 - id 220993
Average adjusted fitness: 0.355
Mean genetic distance 2.851, standard deviation 0.764
Population of 250 members in 3 species:
      age size fitness adj fit stag
  ==== === ===== ===== ====
      52
           117
                 224.0
   11
                            0.442
           52
   12
        46
                   256.4
                           0.388
                                    14
   13
       1
           81 133.1 0.236
Total extinctions: 0
Generation time: 15.600 sec (15.371 average)
***** Running generation 963 *****
Population's average fitness: 11.38269 stdev: 123.15857
Best fitness: 256.64297 - size: (30, 40) - species 12 - id 220943
Average adjusted fitness: 0.464
Mean genetic distance 2.739, standard deviation 0.775
Population of 250 members in 3 species:
  ID age size fitness adj fit stag
 ==== === ===== ===== ====
      53
   11
            100
                   241.0
                           0.465
                                    19
   12
       47
            83
                   256.6
                           0.500
                                    15
   13
        2
           67 248.5
                           0.428
                                    0
Total extinctions: 0
Generation time: 15.339 sec (15.329 average)
***** Running generation 964 *****
Population's average fitness: 21.94687 stdev: 123.21957
Best fitness: 250.47226 - size: (28, 38) - species 11 - id 221404
Average adjusted fitness: 0.484
Mean genetic distance 2.704, standard deviation 0.779
Population of 251 members in 3 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
             96
                   250.5
   11
       54
                            0.530
           72
   12
       48
                 223.3
                           0.505
                                    16
                   208.3
   13
        3
            83
                            0.419
Total extinctions: 0
Generation time: 15.561 sec (15.404 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-964
 ***** Running generation 965 *****
Population's average fitness: 19.04835 stdev: 121.99896
Best fitness: 234.81095 - size: (28, 28) - species 12 - id 221003
Average adjusted fitness: 0.490
Mean genetic distance 2.708, standard deviation 0.791
Population of 251 members in 3 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
   11
       55
             95
                   229.6
                            0.549
                                    21
```

```
12 49 78 234.8 0.490 17
13 4 78 188.8 0.430 2
Total extinctions: 0
Generation time: 15.675 sec (15.396 average)
```

***** Running generation 966 *****

Population's average fitness: 34.42136 stdev: 124.62830

Best fitness: 233.87126 - size: (28, 37) - species 11 - id 221183

Average adjusted fitness: 0.567

Mean genetic distance 2.745, standard deviation 0.824

Population of 251 members in 3 species:

| ID | age | size | fitness | adj fit | stag |
|------|-----|------|---------|---------|------|
| ==== | === | ==== | ====== | ====== | ==== |
| 11 | 56 | 92 | 233.9 | 0.607 | 22 |
| 12 | 50 | 80 | 226.2 | 0.543 | 18 |
| 13 | 5 | 79 | 225.8 | 0.551 | 3 |

Total extinctions: 0

Generation time: 16.419 sec (15.512 average)

***** Running generation 967 *****

Population's average fitness: 17.23924 stdev: 118.79808

Best fitness: 226.33151 - size: (27, 34) - species 13 - id 221860

Average adjusted fitness: 0.463

Mean genetic distance 2.750, standard deviation 0.765

Population of 249 members in 3 species:

| ID | age | size | fitness | adj fit | stag |
|------|-----|------|---------|---------|------|
| ==== | === | ==== | ====== | ====== | ==== |
| 11 | 57 | 90 | 224.1 | 0.494 | 23 |
| 12 | 51 | 81 | 210.3 | 0.459 | 19 |
| 13 | 6 | 78 | 226.3 | 0.436 | 4 |

Total extinctions: 0

Generation time: 15.972 sec (15.603 average)

***** Running generation 968 *****

Population's average fitness: 13.41553 stdev: 119.69382

Best fitness: 235.94333 - size: (30, 35) - species 12 - id 222248

Average adjusted fitness: 0.428

Mean genetic distance 2.776, standard deviation 0.710

Population of 249 members in 3 species:

| ID | age | size | fitness | adj fit | stag |
|------|-----|------|---------|---------|------|
| ==== | === | ==== | ====== | ====== | ==== |
| 11 | 58 | 88 | 226.4 | 0.442 | 24 |
| 12 | 52 | 79 | 235.9 | 0.399 | 20 |
| 13 | 7 | 82 | 202.6 | 0.443 | 5 |
| | | | | | |

Total extinctions: 0

Generation time: 14.928 sec (15.681 average)

***** Running generation 969 *****

Population's average fitness: 22.87426 stdev: 124.36291

Best fitness: 247.69679 - size: (28, 39) - species 11 - id 221946

Average adjusted fitness: 0.450

Mean genetic distance 2.794, standard deviation 0.704

Population of 249 members in 3 species:

| stag | adj tit | titness | size | age | ID |
|------|---------|---------|------|-----|------|
| ==== | ====== | ====== | ==== | === | ==== |
| 25 | 0.466 | 247.7 | 87 | 59 | 11 |

```
12
        53
              77
                   242.1
                            0.409
                                     21
   13
         8
              85
                    208.5
                            0.475
                                      6
Total extinctions: 0
Generation time: 15.712 sec (15.701 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker Run1\neat-checkpoint-969
 ***** Running generation 970 *****
Population's average fitness: 18.97156 stdev: 123.45580
Best fitness: 256.34623 - size: (28, 39) - species 11 - id 222831
Species 12 with 77 members is stagnated: removing it
Average adjusted fitness: 0.417
Mean genetic distance 2.717, standard deviation 0.874
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
   11 60 127 256.3 0.424
       9 123 236.5
   13
                            0.409
                                      7
Total extinctions: 0
Generation time: 15.145 sec (15.479 average)
 ***** Running generation 971 *****
Population's average fitness: 36.72344 stdev: 124.11248
Best fitness: 234.77858 - size: (27, 31) - species 13 - id 222721
Average adjusted fitness: 0.487
Mean genetic distance 2.736, standard deviation 0.838
Population of 250 members in 2 species:
       age size fitness adj fit stag
  TD
           ____ _______
            122 232.8 0.456
   11
       61
                                     27
       10 128 234.8
                            0.518
Total extinctions: 0
Generation time: 15.897 sec (15.625 average)
 ***** Running generation 972 *****
Population's average fitness: 42.75828 stdev: 125.06612
Best fitness: 237.63943 - size: (28, 34) - species 13 - id 221811
Average adjusted fitness: 0.471
Mean genetic distance 2.734, standard deviation 0.838
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
                  236.9
   11
       62
            119
                            0.437
                                     28
                   237.6
                            0.505
   13
       11
            131
Total extinctions: 0
Generation time: 16.425 sec (15.707 average)
 ***** Running generation 973 *****
Population's average fitness: 31.80397 stdev: 123.07235
Best fitness: 253.15478 - size: (29, 44) - species 11 - id 223417
Average adjusted fitness: 0.487
Mean genetic distance 2.706, standard deviation 0.846
Population of 250 members in 2 species:
       age size fitness adj fit stag
```

==== === ====== ===== ====

```
11
        63
             118
                    253.2
                             0.460
                                      29
   13
        12
             132
                    248.0
                             0.514
                                      10
Total extinctions: 0
Generation time: 18.430 sec (16.016 average)
 ***** Running generation 974 *****
Population's average fitness: 21.20484 stdev: 123.26753
Best fitness: 252.19656 - size: (29, 37) - species 11 - id 223144
Average adjusted fitness: 0.406
Mean genetic distance 2.730, standard deviation 0.814
Population of 250 members in 2 species:
       age size fitness adj fit stag
            ==== ====== =====
       ===
   11
       64
            115
                    252.2
                             0.364
                                      30
   13
       13
            135
                    245.3
                             0.448
                                      11
Total extinctions: 0
Generation time: 16.723 sec (16.133 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-974
 ***** Running generation 975 *****
Population's average fitness: 22.93545 stdev: 122.29214
Best fitness: 248.68053 - size: (28, 33) - species 13 - id 223822
Average adjusted fitness: 0.431
Mean genetic distance 2.724, standard deviation 0.834
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
                             0.400
   11
       65
             116
                    241.9
                                      31
    13
        14
             134
                    248.7
                             0.463
Total extinctions: 0
Generation time: 15.956 sec (16.161 average)
 ***** Running generation 976 *****
Population's average fitness: 20.19541 stdev: 122.20495
Best fitness: 254.66096 - size: (27, 42) - species 11 - id 223750
Average adjusted fitness: 0.425
Mean genetic distance 2.720, standard deviation 0.823
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
   11
       66
             123
                    254.7
                             0.440
                                      32
   13
                    242.1
                             0.410
        15
             127
                                       1
Total extinctions: 0
Generation time: 16.299 sec (16.149 average)
 ***** Running generation 977 *****
Population's average fitness: 32.19440 stdev: 120.70442
Best fitness: 242.20645 - size: (27, 34) - species 11 - id 224426
Average adjusted fitness: 0.497
Mean genetic distance 2.816, standard deviation 0.801
Population of 250 members in 2 species:
   ΙD
       age size fitness adj fit stag
  ====
       ===
            ====
                 ====== =====
   11
        67
             128
                    242.2
                             0.527
                                      33
   13
             122
                    238.2
                             0.467
                                       2
        16
```

```
Total extinctions: 0
Generation time: 17.342 sec (16.286 average)
***** Running generation 978 *****
Population's average fitness: 28.85666 stdev: 124.12507
Best fitness: 238.81296 - size: (27, 31) - species 13 - id 223260
Average adjusted fitness: 0.459
Mean genetic distance 2.870, standard deviation 0.770
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ===== ===== ====
                  227.8
      68
             129
                            0.474
   11
   13
        17
            121
                   238.8
                            0.445
                                      3
Total extinctions: 0
Generation time: 16.618 sec (16.455 average)
***** Running generation 979 *****
Population's average fitness: 34.51056 stdev: 124.04329
Best fitness: 269.85706 - size: (25, 28) - species 13 - id 224948
Average adjusted fitness: 0.445
Mean genetic distance 2.757, standard deviation 0.797
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
   11 69
           125 246.5 0.434
            125
   13
       18
                   269.9
                            0.457
Total extinctions: 0
Generation time: 17.171 sec (16.601 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-979
***** Running generation 980 *****
Population's average fitness: 28.04314 stdev: 124.80077
Best fitness: 255.11328 - size: (26, 27) - species 13 - id 225166
Average adjusted fitness: 0.405
Mean genetic distance 2.826, standard deviation 0.740
Population of 250 members in 2 species:
      age size fitness adj fit stag
  ==== === ====== ===== ====
        70
            127
                   229.6
                            0.417
   11
       19
   13
           123
                   255.1
                            0.393
                                      1
Total extinctions: 0
Generation time: 15.978 sec (16.684 average)
***** Running generation 981 *****
Population's average fitness: 35.75586 stdev: 121.20648
Best fitness: 243.02119 - size: (29, 45) - species 11 - id 225199
Average adjusted fitness: 0.475
Mean genetic distance 2.841, standard deviation 0.726
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
  ==== === ===== ===== ====
       71
                   243.0
                            0.475
                                     37
   11
             126
   13
        20
            124
                   237.2
                            0.475
Total extinctions: 0
Generation time: 17.467 sec (16.841 average)
```

```
***** Running generation 982 *****
Population's average fitness: 19.58531 stdev: 124.90711
Best fitness: 242.48627 - size: (29, 38) - species 13 - id 225379
Average adjusted fitness: 0.467
Mean genetic distance 2.858, standard deviation 0.690
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== =====
                 235.1 0.492 38
      72
            129
   11
                 242.5
                            0.443
   13
       21
            121
Total extinctions: 0
Generation time: 15.743 sec (16.773 average)
 ***** Running generation 983 *****
Population's average fitness: 24.53348 stdev: 124.09063
Best fitness: 243.00880 - size: (29, 48) - species 11 - id 225197
Average adjusted fitness: 0.464
Mean genetic distance 2.807, standard deviation 0.791
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
                  243.0
   11
        73
            128
                            0.477
                   217.0
                            0.450
   13
       22
            122
Total extinctions: 0
Generation time: 16.204 sec (16.550 average)
 ***** Running generation 984 *****
Population's average fitness: 47.00654 stdev: 117.10634
Best fitness: 254.84141 - size: (28, 46) - species 11 - id 226057
Average adjusted fitness: 0.473
Mean genetic distance 2.797, standard deviation 0.803
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
        74
            127
                   254.8
                            0.482
                                     40
   13
        23
             123
                   242.5
                            0.463
                                      5
Total extinctions: 0
Generation time: 18.537 sec (16.731 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-984
 ***** Running generation 985 *****
Population's average fitness: 36.19898 stdev: 126.13833
Best fitness: 240.32499 - size: (29, 44) - species 11 - id 226279
Average adjusted fitness: 0.473
Mean genetic distance 2.808, standard deviation 0.777
Population of 250 members in 2 species:
       age size fitness adj fit stag
           ==== ====== ===== ====
       75
                 240.3
                            0.485
   11
            128
                                    41
                 225.2
                            0.460
   13
       24
            122
Total extinctions: 0
Generation time: 17.039 sec (16.840 average)
```

***** Running generation 986 *****

```
Population's average fitness: 48.77785 stdev: 128.00314
Best fitness: 241.05207 - size: (29, 37) - species 13 - id 225982
Average adjusted fitness: 0.572
Mean genetic distance 2.807, standard deviation 0.791
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
      76
             127
                   231.8
                            0.576
                                     42
   11
   13
        25
             123
                   241.1
                            0.569
Total extinctions: 0
Generation time: 18.069 sec (17.017 average)
 ***** Running generation 987 *****
Population's average fitness: 33.09427 stdev: 126.81355
Best fitness: 241.05119 - size: (29, 37) - species 13 - id 225982
Average adjusted fitness: 0.447
Mean genetic distance 2.819, standard deviation 0.787
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
            125 240.6 0.443
   11 77
                                    43
            125
                   241.1 0.450
   13
       26
                                     8
Total extinctions: 0
Generation time: 16.643 sec (16.947 average)
***** Running generation 988 *****
Population's average fitness: 35.11064 stdev: 120.82932
Best fitness: 239.50036 - size: (29, 38) - species 13 - id 226728
Average adjusted fitness: 0.440
Mean genetic distance 2.883, standard deviation 0.705
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
   11 78 118 227.7 0.388
                                     44
   13
       27
            132
                   239.5
                            0.492
Total extinctions: 0
Generation time: 17.737 sec (17.059 average)
***** Running generation 989 *****
Population's average fitness: 23.87825 stdev: 122.22391
Best fitness: 239.23111 - size: (27, 36) - species 13 - id 227150
Average adjusted fitness: 0.454
Mean genetic distance 2.901, standard deviation 0.699
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
       79
   11
            123
                   236.9
                            0.468
                                     45
   13
       28
            127
                   239.2
                            0.440
Total extinctions: 0
Generation time: 17.194 sec (17.061 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-989
 ***** Running generation 990 *****
Population's average fitness: 27.13100 stdev: 125.91846
```

```
Best fitness: 236.66332 - size: (25, 27) - species 13 - id 226949
Average adjusted fitness: 0.470
Mean genetic distance 2.929, standard deviation 0.792
Population of 250 members in 3 species:
       age size fitness adj fit stag
            ==== ====== =====
  ==== ===
                            0.454
   11
        80
             57
                    230.3
                                     46
   13
       29
            128
                    236.7
                            0.485
                                     11
   14
                                      a
         0
             65
Total extinctions: 0
Generation time: 18.442 sec (17.308 average)
***** Running generation 991 *****
Population's average fitness: 20.09687 stdev: 115.89714
Best fitness: 249.36732 - size: (29, 47) - species 14 - id 227077
Species 11 with 57 members is stagnated: removing it
Average adjusted fitness: 0.469
Mean genetic distance 2.784, standard deviation 0.943
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ====== ===== ====
            140
                            0.451
   13
       30
                    246.0
                                     12
   14
         1
            110
                    249.4
                            0.486
Total extinctions: 0
Generation time: 16.377 sec (17.199 average)
 ***** Running generation 992 *****
Population's average fitness: 48.14738 stdev: 123.99265
Best fitness: 260.67116 - size: (29, 47) - species 14 - id 227935
Average adjusted fitness: 0.466
Mean genetic distance 2.684, standard deviation 0.895
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
                            0.459
   13
       31
            132
                    235.3
                                     13
   14
         2
             118
                    260.7
                            0.474
Total extinctions: 0
Generation time: 18.847 sec (17.509 average)
 ***** Running generation 993 *****
Population's average fitness: 46.47502 stdev: 123.25031
Best fitness: 240.54217 - size: (29, 46) - species 14 - id 227866
Average adjusted fitness: 0.472
Mean genetic distance 2.678, standard deviation 0.854
Population of 250 members in 2 species:
       age size fitness adj fit stag
  ==== === ===== ===== ====
   13
       32
            123
                    229.1
                            0.434
                                     14
   14
            127
                    240.5
                            0.510
        3
                                      1
Total extinctions: 0
Generation time: 19.414 sec (17.830 average)
 ***** Running generation 994 *****
Population's average fitness: 25.23078 stdev: 122.40714
Best fitness: 235.66906 - size: (28, 37) - species 14 - id 228411
```

```
Average adjusted fitness: 0.474
Mean genetic distance 2.737, standard deviation 0.848
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ====== ===== ====
                   225.3
   13
       33
             124
                            0.469
   14
       4
            126 235.7
                            0.478
                                     2
Total extinctions: 0
Generation time: 17.633 sec (17.740 average)
Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMulti
walker_Run1\neat-checkpoint-994
***** Running generation 995 *****
Population's average fitness: 38.81245 stdev: 118.36482
Best fitness: 234.53031 - size: (28, 37) - species 14 - id 228539
Average adjusted fitness: 0.461
Mean genetic distance 2.818, standard deviation 0.821
Population of 250 members in 2 species:
       age size fitness adj fit stag
 ==== === ===== ===== ====
   13 34
           127 223.9 0.478
                                    16
       5 123 234.5 0.445
   14
                                    3
Total extinctions: 0
Generation time: 17.814 sec (17.817 average)
***** Running generation 996 *****
Population's average fitness: 31.42577 stdev: 126.21586
Best fitness: 227.33138 - size: (29, 44) - species 14 - id 228775
Average adjusted fitness: 0.451
Mean genetic distance 2.799, standard deviation 0.831
Population of 250 members in 2 species:
      age size fitness adj fit stag
 ==== === ====== ===== ====
       35
   13
            124
                   223.9
                            0.438
                                    17
   14
       6 126 227.3
                            0.463
                                    4
Total extinctions: 0
Generation time: 16.209 sec (17.631 average)
***** Running generation 997 *****
Population's average fitness: 41.12550 stdev: 124.64238
Best fitness: 254.87269 - size: (30, 48) - species 14 - id 227928
Average adjusted fitness: 0.447
Mean genetic distance 2.790, standard deviation 0.821
Population of 250 members in 2 species:
  ID age size fitness adj fit stag
 ==== === ====== ===== ====
                   245.7
   13
        36
             126
                            0.460
        7
             124
                   254.9
                            0.433
   14
                                     5
Total extinctions: 0
Generation time: 17.745 sec (17.741 average)
***** Running generation 998 *****
Population's average fitness: 32.40233 stdev: 125.44091
Best fitness: 255.28176 - size: (30, 48) - species 14 - id 229075
Average adjusted fitness: 0.418
Mean genetic distance 2.788, standard deviation 0.825
```

Population of 250 members in 2 species:

| stag | adj fit | fitness | size | age | ID |
|------|---------|---------|------|-----|------|
| ==== | ====== | ====== | ==== | === | ==== |
| 19 | 0.419 | 244.0 | 125 | 37 | 13 |
| 6 | 0.416 | 255.3 | 125 | 8 | 14 |

Total extinctions: 0

Generation time: 17.619 sec (17.729 average)

***** Running generation 999 *****

Population's average fitness: 50.59409 stdev: 124.03692

Best fitness: 260.18081 - size: (28, 41) - species 14 - id 229462

Average adjusted fitness: 0.462

Mean genetic distance 2.767, standard deviation 0.864

Population of 250 members in 2 species:

| stag | adj fit | fitness | size | age | ID |
|------|---------|---------|------|-----|------|
| ==== | ====== | ====== | ==== | === | ==== |
| 20 | 0.429 | 243.0 | 120 | 38 | 13 |
| 7 | 0.496 | 260.2 | 130 | 9 | 14 |

Total extinctions: 0

Generation time: 18.119 sec (17.822 average)

Saving checkpoint to d:\Python Workspace\BA Neat\NEAT CheckPoints\NEATPointsMultiwalker_Run1\neat-checkpoint-999

Der Test hat 16208.28 Sekunden benötigt.

Der Test hat 1000 Generation gedauert

Statistiken wurden in d:/Python Workspace/BA Neat/Excel Results/Exp2_NeatRun1_stats.xlsx gespeichert.