**Re-running the simulations with up to 7 non-generic alphas of each type, and a stronger range of variation in the non-generics**

**Simulation 1**

monotonic lambda-environment

alphas constant across environments

Focal species: 8

non-generic competitors and their alpha components:

[1] "a.diff" "4" "14" "7" "1" "6" "10" "12"

[1] -1.862829

[1] 0.975044

[1] -1.390847

[1] 1.391286

[1] -1.465299

[1] -0.6592933

[1] 1.018276

**Simulation 2**

optimum lambda-environment

alphas constant across environment

Focal species: 7

non-generic competitors:

[1] "a.diff" "9" "3" "2" "15" "6" "1" "4"

[1] -1.525233

[1] 1.188528

[1] 1.302402

[1] -0.7426925

[1] 0.8070477

[1] 0.3777721

[1] 1.452297

**Simulation 3**

monotonic lambda-environment

alphas can vary with environment

Focal species: 14

non-generic competitors:

[1] "a.diff" "5" "1" "2" "6" "10" "15" "12"

[1] -0.04622824

[1] -1.0818

[1] 1.739041

[1] -0.7800914

[1] 1.423047

[1] 0.9119613

[1] 1.444575

alphas that vary with environment:

[1] "a.env.id" "6" "9" "15" "13" "1" "2" "11"

**Simulation 4**

optimum lambda-environment

alphas can vary with environment

Focal species: 2

non-generic competitors:

[1] "a.diff" "8" "15" "10" "13" "1" "6" "11"

[1] -0.5586033

[1] 0.5243695

[1] -0.3880449

[1] -0.5177569

[1] 1.487017

[1] 1.486114

[1] -0.6963216

alphas that vary with environment:

[1] "a.env.id" "7" "9" "10" "2" "3" "15" "6"

**Trying out simulations (#3) with stronger non-generic alphas**

**test\_1**

a.intra = -3.5

a.gen.mean = -7

a.diff.range = (-3, 3)

a.env.range = (-1, 1)

focal species: 8

[1] "a.diff" "5" "10" "7" "11" "4" "15" "6"

[1] 0.1855019

[1] -1.317914

[1] 1.430324

[1] -2.662031

[1] -1.226867

[1] -0.9981105

[1] 1.800503

[1] "a.env.id" "13" "8" "15" "11" "12" "9" "5"

**test\_2**

a.intra = -3.5

a.gen.mean = -7

a.diff.range = (-3.5, 3.5)

a.env.range = (-1, 1)

focal species: 11

[1] "a.diff" "3" "9" "10" "1" "15" "11" "14"

[1] -1.340719

[1] 2.131484

[1] -1.703677

[1] 2.946808

[1] 3.032481

[1] 1.439575

[1] -1.365387

[1] "a.env.id" "3" "7" "8" "1" "12" "9" "5"

**test\_3**

a.intra = -3.5

a.gen.mean = -7

a.diff.range = (-3, 3)

a.env.range = (-1.5, 1.5)

focal species: 8

[1] "a.diff" "15" "2" "1" "13" "5" "10" "14"

[1] -1.862314

[1] -1.770823

[1] -1.484345

[1] 0.006517691

[1] -0.2523546

[1] -0.7627513

[1] 1.293822

[1] "a.env.id" "8" "5" "6" "2" "4" "14" "3"

**test\_4**

a.intra = -3.5

a.gen.mean = -7

a.diff.range = ±(1, 3.2)

a.env.range = (-1, 1)

focal species: 9

[1] "a.diff" "10" "7" "12" "15" "5" "1" "14"

[1] -1.15029

[1] 2.361359

[1] 2.908333

[1] 1.148439

[1] -1.998273

[1] -1.846411

[1] 1.16606

[1] "a.env.id" "14" "11" "8" "4" "7" "10" "3"

**test\_5**

a.intra = -3.5

a.gen.mean = -7

a.diff.range = ±(1.5, 3.2)

a.env.range = ±(.5, 1.5)

focal species: 8s

[1] "a.diff" "3" "7" "9" "8" "2" "13" "15"

[1] 1.961396

[1] 3.129007

[1] 2.648101

[1] -2.396445

[1] 3.130379

[1] -2.828948

[1] 3.03599

[1] "a.env.id" "1" "13" "5" "12" "14" "15" "6"

**test\_6**

Fixed the issue with the perturbations. 6 has a normally distributed pertubration (sd = pop)

a.intra = -3.5

a.gen.mean = -7

a.diff.range = ±(1.5, 3.2)

a.env.range = ±(.5, 1.5)

focal species: 7

[1] "a.diff" "10" "2" "1" "9" "11" "14" "8"

[1] 3.010262

[1] -1.91353

[1] 2.09719

[1] 2.975372

[1] 1.85947

[1] -2.962681

[1] -2.712347

[1] "a.env.id" "3" "11" "10" "1" "14" "15" "12"

6b is the same coefficients, with a larger normally distributed perturbation (sd = pop\*2)

6c has the poisson perturbation