

Control variables in optimisation:

1. b sst habitat(0) = 13.4268
2. T age size slope(0) = 1.06455
3. eF habitat epi(0) = 0.745657
4. eF habitat mmeso(0) = 0.910203
5. eF habitat mbathy(0) = 0.295928
6. MSS species(0) = 0.469338

Initial statistics: 6 variables; iteration 0; function evaluation 0

Function value 1.1059255e+03; maximum gradient component mag 4.1510e+02

| Var | Value   | Gradient     | Var | Value    | Gradient     | Var | Value    | Gradient    |
|-----|---------|--------------|-----|----------|--------------|-----|----------|-------------|
| 1   | 0.23587 | -1.75905e+02 | 2   | -0.77001 | -2.62749e+02 | 3   | 0.32697  | 1.38282e+02 |
| 4   | 0.61250 | 2.58367e+02  | 5   | -0.26765 | 4.15103e+02  | 6   | -0.45447 | 2.20853e+02 |

...

quasi-Newton iterations

...

- final statistics:

6 variables; iteration 16; function evaluation 28

Function value 8.8558e+02; maximum gradient component mag 9.8197e-01

Exit code = 1; converg criter 1.0000e+00

| Var | Value   | Gradient     | Var | Value    | Gradient    | Var | Value    | Gradient     |
|-----|---------|--------------|-----|----------|-------------|-----|----------|--------------|
| 1   | 0.78651 | 3.56932e-01  | 2   | -0.57958 | 3.91102e-01 | 3   | -0.05783 | -1.08384e-01 |
| 4   | 0.43575 | -3.57419e-01 | 5   | -1.68728 | 9.45632e-01 | 6   | -0.58525 | 9.81975e-01  |

Estimated parameters:

1. b sst habitat(0) = 15.319
2. T age size slope(0) = 1.21025
3. eF habitat epi(0) = 0.454642
4. eF habitat mmeso(0) = 0.816134
5. eF habitat mbathy(0) = 0.264148
6. MSS species(0) = 0.339454