

**Wikiprint Book**

**Title:** EwEugPredationMortality

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## 7.7 Predation mortality

The predation mortality of a group ( $i$ ) is the sum of the consumption of  $i$  by the other groups, divided by the biomass of group ( $i$ ). Predation mortality is calculated in the program, i.e., it is *not* an input parameter. Predation mortality corresponds to what is called 'M2' in some other models.

The *Predation mortality* form (Figure 7.2) is very important and should be checked frequently when balancing a model.

To begin with, the [Mortality coefficients](#) form will guide you to particular mortality coefficients that are causing problems with balancing. If predation mortality is too high then the *Predation mortality* form will help you identify which predators are causing the problem for a particular prey group.

To help you identify possible problem predators, cells with unusually high predation mortalities will be shown with a different-coloured background instead of the usual blue background. Note that this is intended as a guide only to show which predators are contributing most to a prey species' mortality. You should use the literature, expert opinion and your understanding of the ecosystem to decide which predation mortalities should be changed and by how much.

| Prey \ predator         | 1 | 2        | 3       | 4       | 5        | 6 | 7       | 8       | 9       | 10      | 11        | 12     |
|-------------------------|---|----------|---------|---------|----------|---|---------|---------|---------|---------|-----------|--------|
| 1 0-12 Snook            |   | 0.534    |         |         |          |   |         |         |         |         |           |        |
| 2 3-12 Snook            |   |          |         | 0.0159  |          |   |         |         |         |         |           |        |
| 3 12-48 Snook           |   |          |         |         |          |   |         |         |         |         |           |        |
| 4 48-90 Snook           |   |          |         |         |          |   |         |         |         |         |           |        |
| 5 90+ Snook             |   |          |         |         |          |   |         |         |         |         |           |        |
| 6 0-3 Red Drum          |   |          | 0.0196  | 0.0539  |          |   |         |         | 0.599   |         |           |        |
| 7 3-8 Red Drum          |   |          |         |         |          |   |         |         |         |         |           |        |
| 8 8-18 Red Drum         |   |          |         |         |          |   |         |         |         |         |           |        |
| 9 18-36 Red Drum        |   |          |         |         |          |   |         |         |         |         |           |        |
| 10 36+ Red Drum         |   |          |         |         |          |   |         |         |         |         |           |        |
| 11 0-3 Sea Trout        |   |          |         |         |          |   |         |         |         |         |           |        |
| 12 3-18 Sea Trout       |   |          |         | 0.141   | 0.00185  |   |         |         |         |         |           |        |
| 13 18+ Sea Trout        |   |          |         |         |          |   |         |         |         |         |           |        |
| 14 0-3 Sand Trout       |   |          |         |         |          |   |         |         |         |         |           |        |
| 15 3-12 Sand Trout      |   |          |         |         | 0.0860   |   |         |         |         |         |           |        |
| 16 12+ Sand Trout       |   |          |         |         | 0.000959 |   |         |         |         |         |           |        |
| 17 0-6 Mullet           |   | 0.00894  | 0.00828 | 0.00455 | 0.0185   |   |         | 0.00664 | 0.0152  | 0.0150  |           |        |
| 18 6-18 Mullet          |   |          |         |         | 0.000416 |   |         | 0.00179 | 0.00345 | 0.0258  |           |        |
| 19 18+ Mullet           |   |          |         |         | 0.000352 |   |         |         |         |         |           |        |
| 20 Mackrel 0-3          |   |          |         |         |          |   |         |         |         |         |           |        |
| 21 Mackrel 3+           |   |          |         |         |          |   |         |         |         |         |           |        |
| 22 Ladyfish 0-10        |   |          | 0.0548  |         | 0.0774   |   |         |         |         |         |           |        |
| 23 Ladyfish 10+         |   |          |         |         | 0.00108  |   |         |         |         |         |           |        |
| 24 Jacks                |   |          |         |         |          |   |         |         |         |         |           |        |
| 25 Bay Anchovy          |   |          | 0.00139 | 0.0380  | 0.0130   |   |         | 0.00354 | 0.0242  | 0.0308  |           | 0.0135 |
| 26 Pin Fish             |   | 0.00181  | 0.0840  | 0.105   | 0.00158  |   |         | 0.00135 | 0.0143  | 0.0213  |           |        |
| 27 Spot                 |   |          | 0.0156  | 0.00656 | 0.000139 |   |         | 0.00333 | 0.00665 | 0.00682 |           |        |
| 28 Silver Perch         |   |          | 0.0298  | 0.0503  | 0.0128   |   |         | 0.103   | 0.0109  | 0.0180  |           | 0.0576 |
| 29 Scaled Sardine       |   |          | 0.00671 | 0.183   | 0.00120  |   |         |         |         |         |           | 0.0646 |
| 30 Mojarra              |   | 0.00639  | 0.305   | 0.0249  | 0.000528 |   | 0.00176 | 0.0257  | 0.0253  | 0.00275 |           |        |
| 31 Threadfin Herring    |   |          | 0.0138  | 0.00758 | 0.129    |   |         |         |         |         |           |        |
| 32 Manhaden             |   |          |         | 0.0266  | 0.0829   |   |         | 0.0386  | 0.204   | 0.279   |           |        |
| 33 Menidia (silverside) |   | 0.00850  | 0.197   |         | 0.000703 |   |         | 0.0341  | 0.0611  | 0.00366 |           | 0.0228 |
| 34 Catfish              |   |          |         |         | 0.000447 |   |         |         |         | 0.00312 | 0.0000373 |        |
| 35 Bumper               |   |          |         |         | 0.00259  |   |         |         |         |         |           |        |
| 36 Caridean Shrimp      |   | 0.000821 | 0.0871  | 0.00360 |          |   | 0.00156 | 0.0111  | 0.0221  | 0.0228  | 0.000235  | 0.0235 |

**Figure 7.2** Predation mortality form showing the quantitatively important predators and prey for all groups. This screen can be used to great advantage when balancing a model with one or several values of  $EE > 1$ , to identify the consumers (in columns) exerting the strongest pressure on the group(s) (in rows) with excessively high  $EE$  values.