Table of absolute values of Mohn’s rho values for SSB (top) and survey negative-log likelihood values (relative to the minum over the grid; bottom) for combinations of M and survey catchability for the base case model.

Mohn’s rho

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | ***q*** | | | | |
|  |  | **0.8** | **0.9** | **1.0** | **1.1** | **1.2** |
| M | **0.08** | 0.11 | 0.01 | 0.02 | 0.05 | 0.08 |
| **0.09** | 0.04 | 0.03 | 0.06 | 0.08 | 0.11 |
| **0.10** | 0.02 | 0.06 | 0.09 | 0.12 | 0.14 |
| **0.11** | 0.07 | 0.09 | 0.12 | 0.14 | 0.16 |
| **0.12** | 0.12 | 0.12 | 0.14 | 0.16 | 0.19 |
| **0.13** | 0.12 | 0.14 | 0.16 | 0.19 | 0.21 |
| **0.14** | 0.14 | 0.16 | 0.18 | 0.20 | 0.22 |

Relative survey biomass negative log-likelihood

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | ***q*** | | | | |
|  |  | **0.8** | **0.9** | **1.0** | **1.1** | **1.2** |
| M | **0.08** | 303 | 73 | 48 | 28 | 14 |
| **0.09** | 230 | 44 | 26 | 13 | 4 |
| **0.10** | 177 | 24 | 13 | 4 | 0 |
| **0.11** | 142 | 13 | 5 | 2 | 1 |
| **0.12** | 121 | 7 | 3 | 3 | 6 |
| **0.13** | 8 | 6 | 6 | 9 | 14 |
| **0.14** | 8 | 8 | 11 | 16 | 23 |

**Temperature/date and male M estimated**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | ***q*** | | | | |
|  |  | **0.8** | **0.9** | **1.0** | **1.1** | **1.2** |
| M | **0.08** | 0.06 | 0.02 | 0.05 | 0.07 | 0.10 |
| **0.09** | 0.00 | 0.05 | 0.08 | 0.10 | 0.13 |
| **0.10** | 0.05 | 0.08 | 0.10 | 0.13 | 0.15 |
| **0.11** | 0.10 | 0.11 | 0.13 | 0.15 | 0.17 |
| **0.12** | 0.14 | 0.13 | 0.15 | 0.17 | 0.19 |
| **0.13** | 0.13 | 0.15 | 0.17 | 0.19 | 0.21 |
| **0.14** | 0.15 | 0.17 | 0.19 | 0.21 | 0.23 |

Figures of yellowfin sole spawning biomass for selected retrospective M-q combinations:







Figure on tradeoffs between M and q relative to negative log likelihood for the survey index for yellowfin sole.

**Base**



**Temperature/date and male M estimated**

