**SUPPLEMENTARY MATERIALS**

Table 1 A – European sprat: landing data from year 2004 to year 2019 divided by country. Italian data and Croatian data since 2013 are from the EU-DCF (DCF, 2017); Croatian data from 2009 to 2012 refers to Eurostat (Eurostat, 2012) and Croatian data in red are estimated.

|  |  |  |
| --- | --- | --- |
| **Year** | **Italian catch**  **(tonnes)** | **Croatian catch**  **(tonnes)** |
| 2004 | 80.41 | 54.14 |
| 2005 | 142.19 | 95.74 |
| 2006 | 86.59 | 58.30 |
| 2007 | 105.23 | 70.85 |
| 2008 | 121.98 | 82.13 |
| 2009 | 123.90 | 89.10 |
| 2010 | 163.00 | 110.80 |
| 2011 | 99.73 | 61.94 |
| 2012 | 35.07 | 146.11 |
| 2013 | 97.13 | 72.84 |
| 2014 | 138.83 | 47.83 |
| 2015 | 82.88 | 43.59 |
| 2016 | 54.63 | 46.20 |
| 2017 | 57.21 | 82.42 |
| 2018 | 154.92 | 49.38 |
| 2019 | 102.05 | 67.94 |

Table 2 A – Horse mackerels: landing data from 1970 to 2019 divided by country. Italian data from 1970 to 2003 are from Fortibuoni et al. (2018), since 2004 are from EU-DCF (EC, 2017). Croatian data from 1970 to 2012 are from the FishStatJ database (FAO-GFCM, 2019), whereas from 2013 to 2019 are from EU-DCF (EC, 2017).

|  |  |  |
| --- | --- | --- |
| **Year** | **Italian catch data**  **(in tonnes)** | **Croatian catch data**  **(in tonnes)** |
| 1970 | 1063.30 | 346.00 |
| 1971 | 1378.49 | 1894.00 |
| 1972 | 1682.06 | 1154.00 |
| 1973 | 1968.23 | 626.00 |
| 1974 | 2254.40 | 384.00 |
| 1975 | 2505.34 | 491.00 |
| 1976 | 2432.00 | 445.00 |
| 1977 | 2497.00 | 389.00 |
| 1978 | 1967.00 | 692.00 |
| 1979 | 2103.00 | 1151.00 |
| 1980 | 2783.00 | 1268.00 |
| 1981 | 2696.90 | 1276.00 |
| 1982 | 2800.20 | 1333.00 |
| 1983 | 2065.60 | 1213.00 |
| 1984 | 2727.90 | 1208.00 |
| 1985 | 2631.60 | 2189.00 |
| 1986 | 2876.10 | 1779.00 |
| 1987 | 3034.00 | 1106.00 |
| 1988 | 2489.70 | 836.00 |
| 1989 | 2445.70 | 860.00 |
| 1990 | 1929.30 | 905.00 |
| 1991 | 2553.00 | 517.00 |
| 1992 | 1829.40 | 589.00 |
| 1993 | 1527.50 | 787.00 |
| 1994 | 1531.20 | 566.00 |
| 1995 | 1138.20 | 453.00 |
| 1996 | 1350.20 | 361.00 |
| 1997 | 861.70 | 336.00 |
| 1998 | 727.00 | 200.00 |
| 1999 | 820.90 | 90.00 |
| 2000 | 553.10 | 75.00 |
| 2001 | 738.80 | 192.00 |
| 2002 | 403.00 | 84.00 |
| 2003 | 455.20 | 112.00 |
| 2004 | 1213.13 | 264.00 |
| 2005 | 1053.28 | 569.00 |
| 2006 | 1090.19 | 590.00 |
| 2007 | 1186.13 | 550.00 |
| 2008 | 849.35 | 360.50 |
| 2009 | 884.08 | 314.82 |
| 2010 | 842.55 | 394.19 |
| 2011 | 871.63 | 367.67 |
| 2012 | 744.38 | 314.76 |
| 2013 | 408.66 | 281.03 |
| 2014 | 432.19 | 234.53 |
| 2015 | 374.48 | 437.03 |
| 2016 | 292.32 | 988.13 |
| 2017 | 310.51 | 915.41 |
| 2018 | 341.88 | 1463.51 |
| 2019 | 365.81 | 1581.63 |

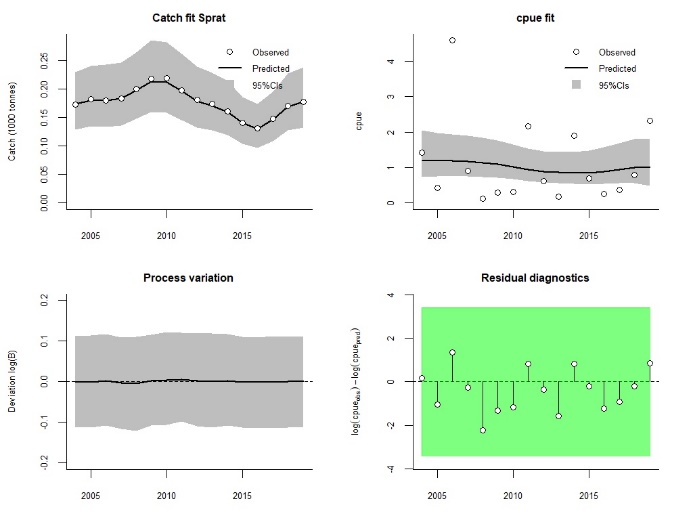
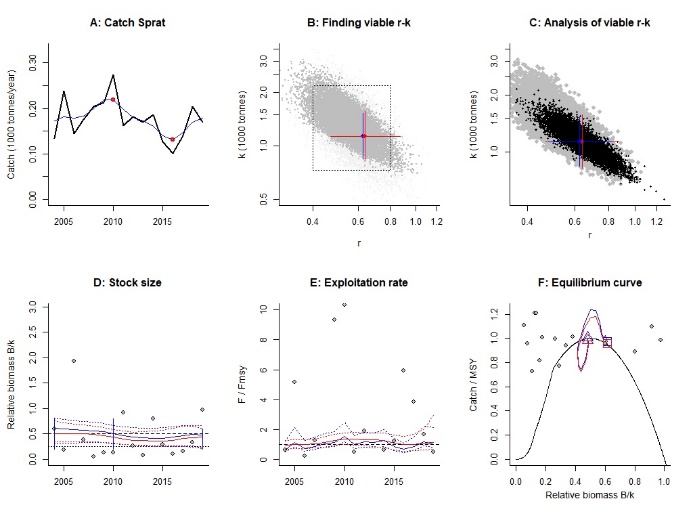
 

Figure 1A – European sprat in GSA 17 – CMSY model: fitting (left panel) and diagnostics (right panel).

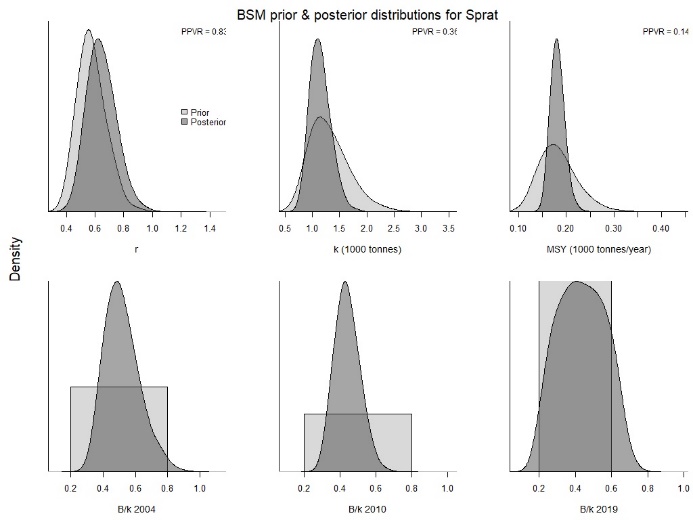


Figure 2A - European sprat in GSA 17 – Marginal posterior distributions along with prior densities. The lower the prior-posterior variance ratio (PPVR), the more the posterior knowledge is improved relative to prior knowledge

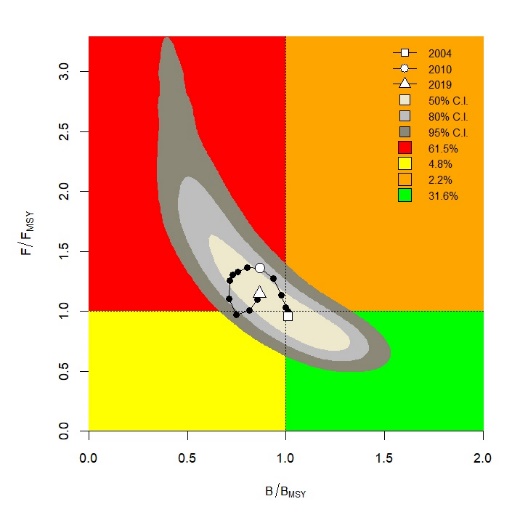
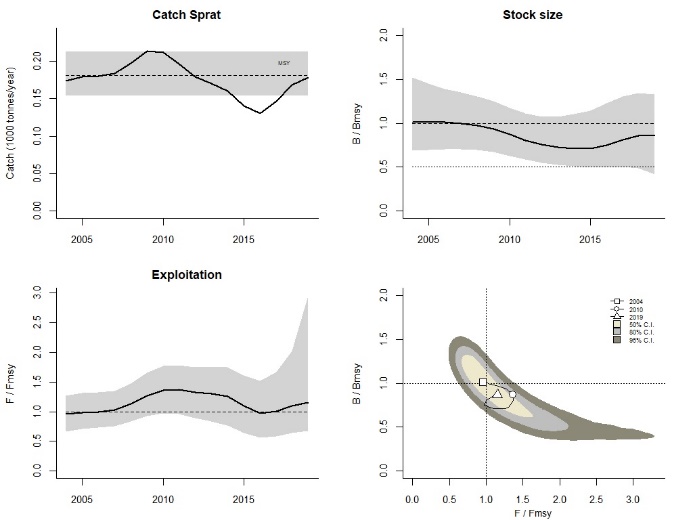


Figure 3A – European sprat in GSA 17 – CMSY model: output (left panel) and the Kobe pot (right panel).

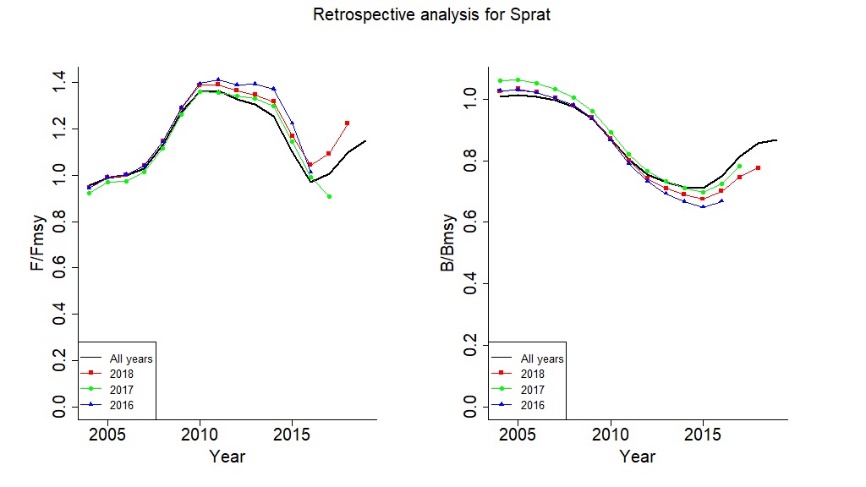


Figure 4A – European sprat in GSA 17 - CMSY model: retrospective analysis.

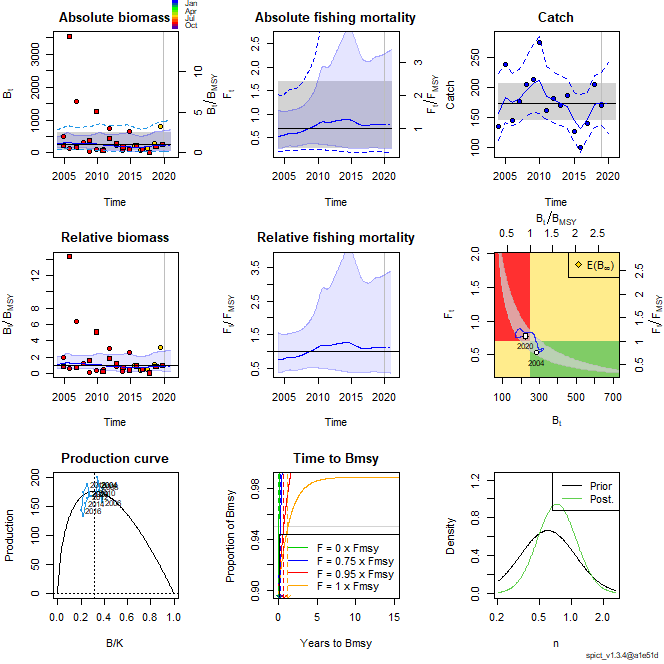
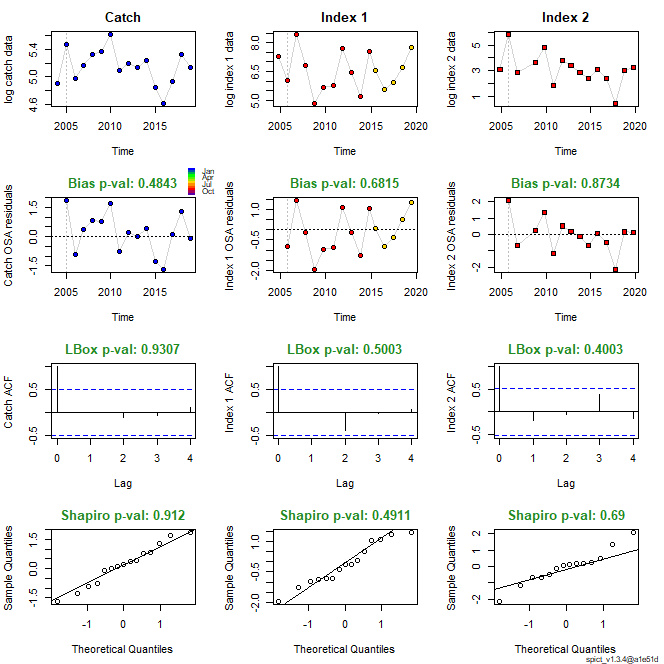
 

Figure 5A – European sprat in GSA 17 - SPiCT model: output (left panel) and relative diagnostics (right panel).

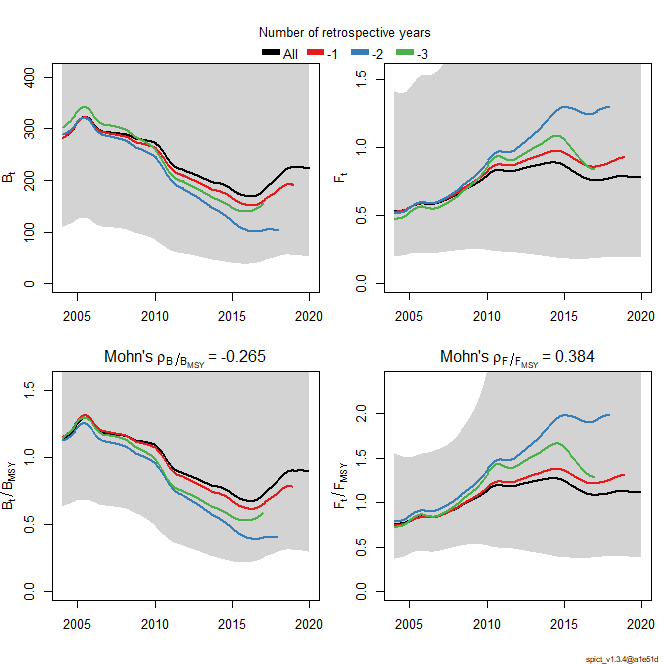


Figure 6A – European sprat in GSA 17 – SPiCT model: retrospective analysis.

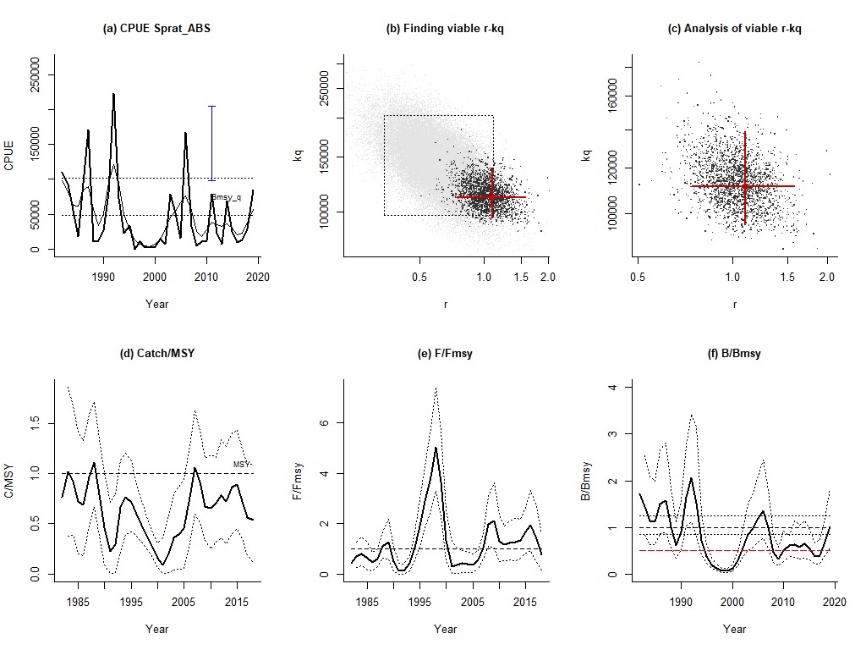


Figure 7A – European sprat in GSA 17 – AMSY model: output and diagnostics.

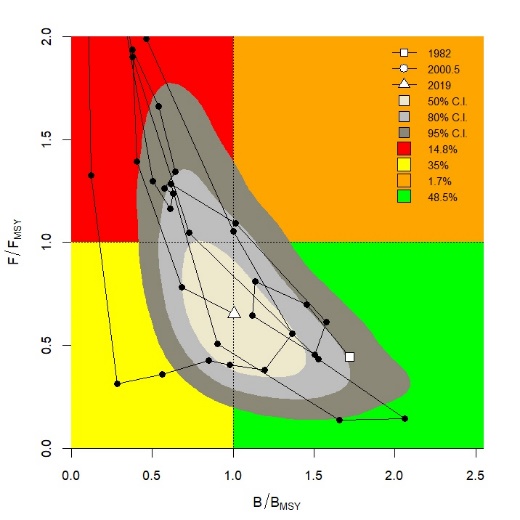


Figure 8A – European sprat in GSA 17 – AMSY model: the Kobe plot.

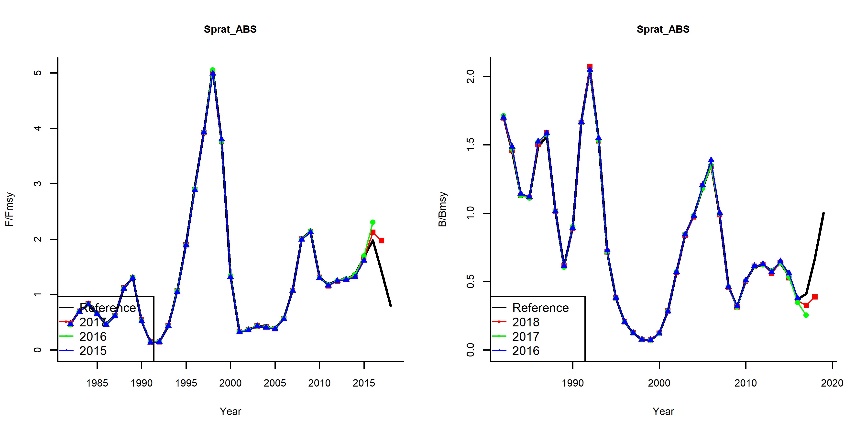


Figure 9A – European sprat in GSA 17 – AMSY model: retrospective analysis.

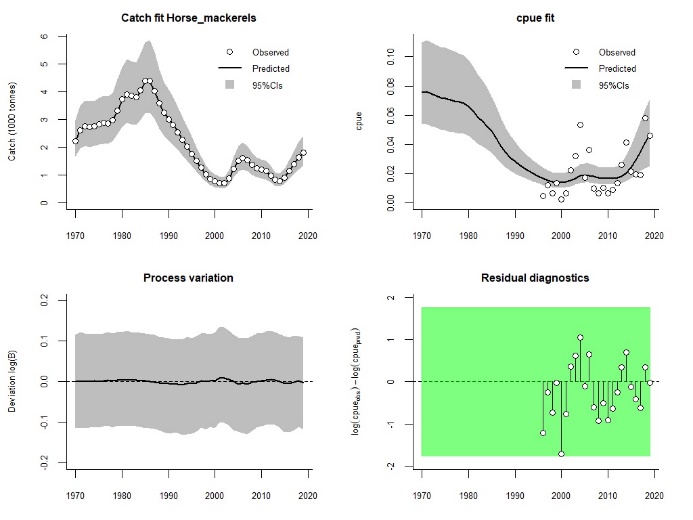
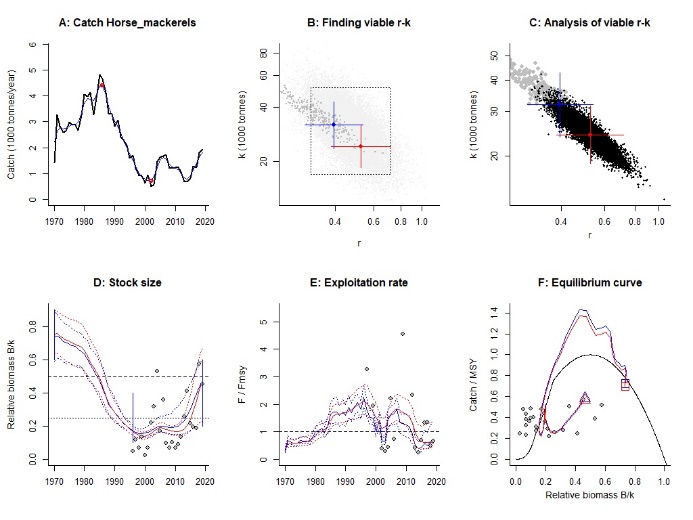
 

Figure 10A – Horse mackerels in GSA 17 – CMSY model: fitting (left panel) and diagnostics (right panel).

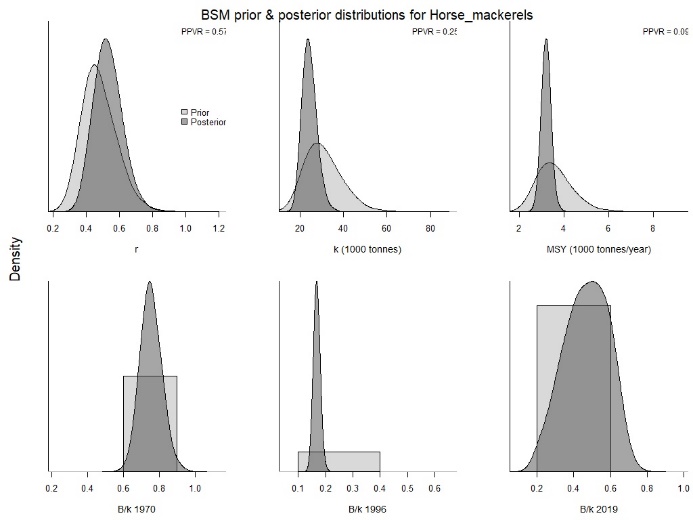


Figure 11A - Horse mackerels in GSA 17 – Marginal posterior distributions along with prior densities. The lower the prior-posterior variance ratio (PPVR), the more the posterior knowledge is improved relative to prior knowledge

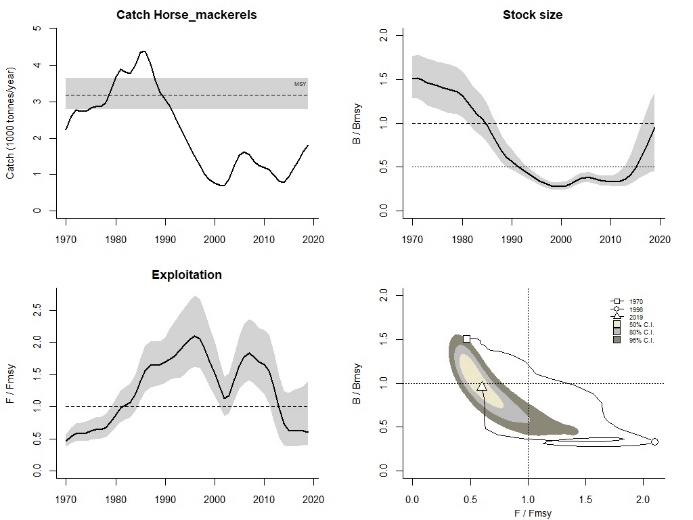
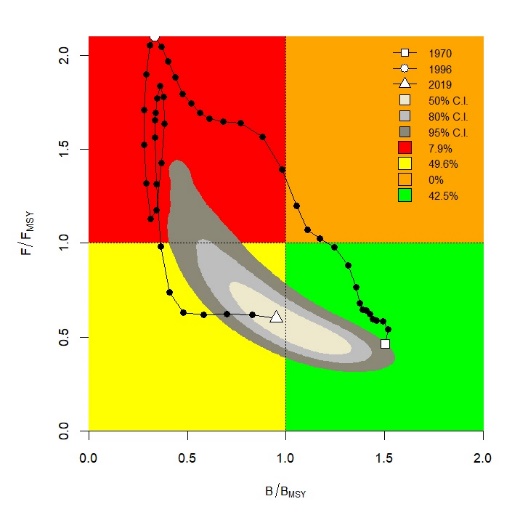
 

Figure 12A – Horse mackerels in GSA 17 – CMSY model: output (left panel) and the Kobe pot (right panel).

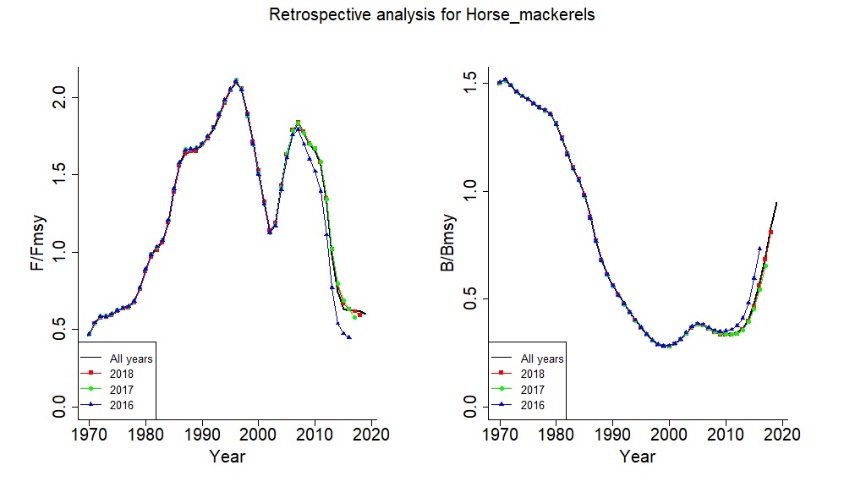


Figure 13A – Horse mackerels in GSA 17 - CMSY model: retrospective analysis.

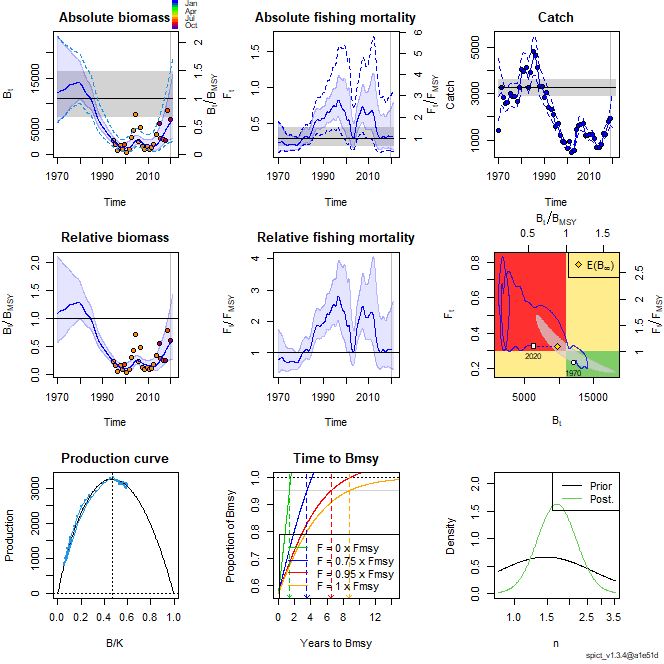
 

Figure 14A – Horse mackerels in GSA 17 - SPiCT model: output (left panel) and relative diagnostics (right panel).

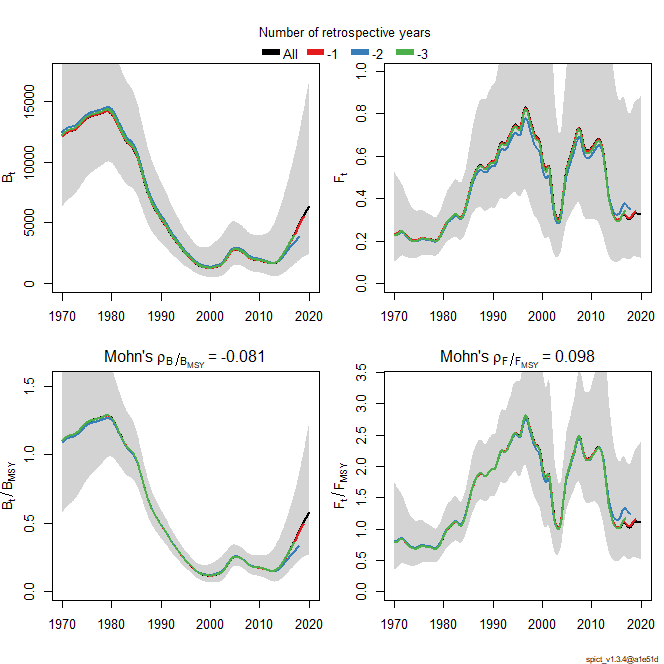


Figure 15A – Horse mackerels in GSA 17 – SPiCT model: retrospective analysis.

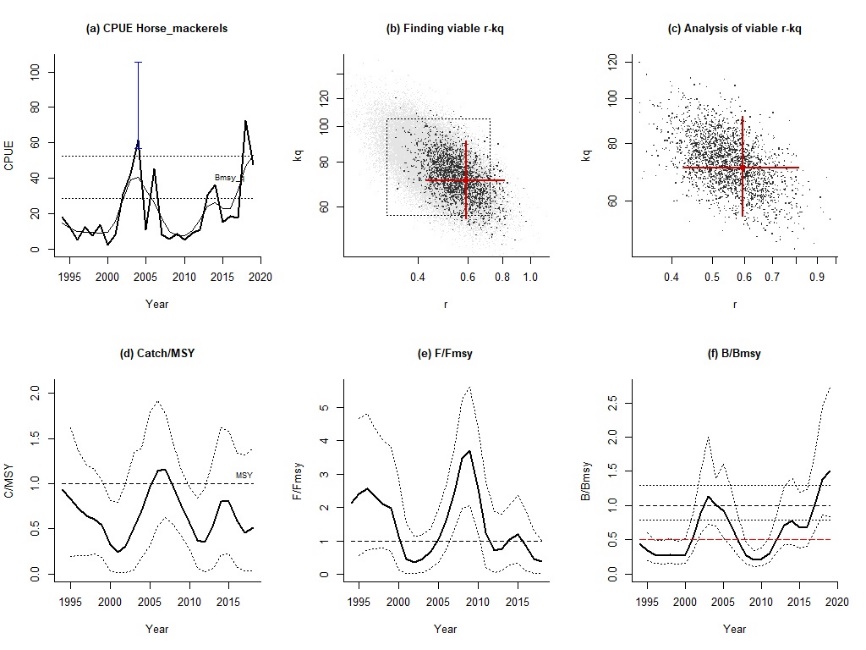


Figure 16A – Horse mackerels in GSA 17 – AMSY model: output and diagnostics.

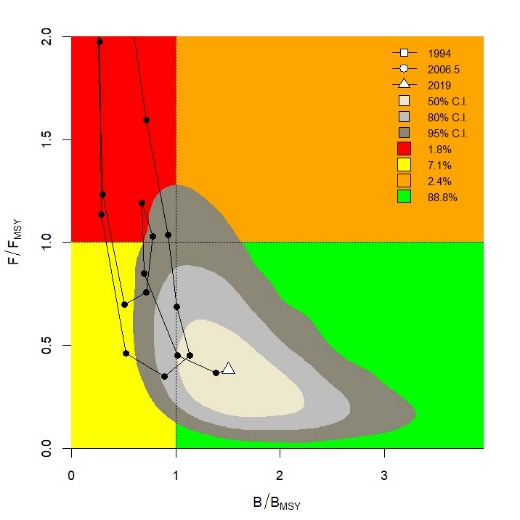


Figure 17A – Horse mackerels in GSA 17 – AMSY model: the Kobe plot.

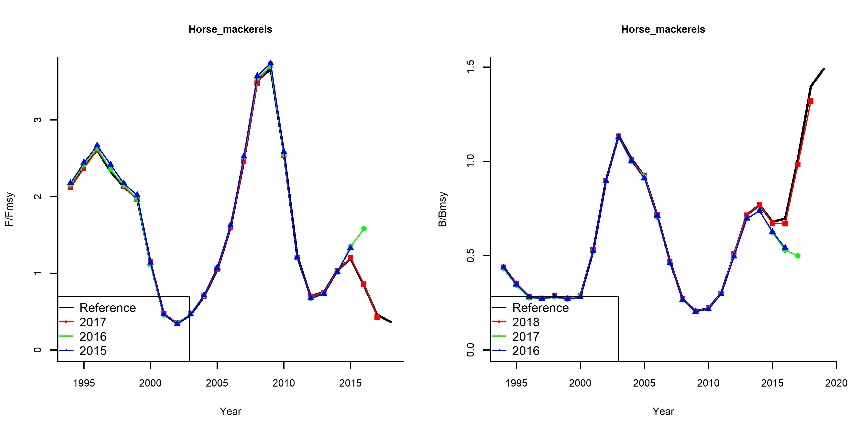


Figure 18A – Horse mackerels in GSA 17 – AMSY model: retrospective analysis.