Michael Melnychuk <mmel@u.washington.edu>   May 19

to Daniel, Aureliano, Yannis, minadakn

hi all,

To follow up on our call, here is a little description of how we would best represent stock status. (Daniel, please correct or elaborate on anything below as needed).

We consider stock status in terms of abundance (B) as well as fishing pressure (U), and for each of these the benchmark for comparison (with current levels) can be either a specified management target (mgt) or a MSY-based value (msy). Crossing these 2 x 2 leads to these four time series variables:
BdivBmsytouse, BdivBmgttouse, UdivUmsytouse, UdivUmgttouse

These four variables are simply "pointers" that refer to what we consider to be the best representation of stock status. "B" can represent total biomass (TB), spawner biomass (SSB), or abundance (N), and "U" can represent either exploitation rate (ER) or instantaneous fishing mortality (F).

Here are a couple examples that may help to clarify:

- an assessment lists time series of F, and a Fmsy reference point, and it's stated that Fmsy is the target fishing mortality rate. We import these and then internally calculate their ratio, FdivFmsy. This time series FdivFmsy will be repeated under UdivUmsytouse because Fmsy is the best representation of a MSY-based reference point for fishing pressure. This time series FdivFmsy will also be repeated under UdivUmgttouse because Fmsy is the best representation of a management target for fishing pressure.

- as assessment lists time series of TB, time series of SSB, and reference points of SSB30% and SSB40%, and it's stated that SSB30% is a proxy for SSBmsy and SSB40% is target biomass. The time series SSB/SSB30% will be listed under SSBdivSSBmsytouse, and will be repeated as BdivBmsytouse because it is the best representation of a MSY-based reference point for abundance. Similarly, the time series SSB/SSB40% will be listed under SSBdivSSBmgttouse, and will be repeated as BdivBmgttouse because it is the best representation of target abundance.

Similar "pointing" occurs for the reference points themselves (the denominators of the ratios above):
Bmsytouse, Bmgttouse, Umsytouse, Umgttouse
These refer to specific types of reference points that have been extracted from assessments, and will repeat those values. *Occasionally*, a Bmsytouse may not be the same as the denominator of BdivBmsytouse if the preference protocols have led to selecting a particular ratio as a time series but a different kind of quantity as the reference point (for example, BdivBmgttouse could involve spawning biomass whereas Bmsytouse could involve total biomass). These are rare, but if such conflicts do occur we recommend that users use the four "touse" ratios above rather than calculating ratios based on the four "touse" reference points.

The addition of "mgt" reference points and ratios was relatively recent, so there will not be as many values as there are "msy" reference points and ratios.

I hope that helps - please let us know if we can clarify further.
(Please note I do not know Giulia Gorelli's email address.)

Mike