

Chapter 5 – Using simple data: surplus production models*

QUESTIONS ASKED

- How to assess the state of a fishery with a simple series of catch and effort?
- How is a fishery model different from a trend analysis?
- Do the assumptions of the model affect the management values of interest?
- How to word a management advice?

BACKGROUND INFORMATION

- Wikipedia: [Population dynamics of fisheries](#)
- Conservation Strategy Fund – [Maximum Economic Yield](#)
- A fishery: BBC – [Underwater reef fishing in the Philippines](#)



COVERAGE

- Equilibrium version of the Schaefer model: fit by hand and with computer
- Introduction to Solver, an optimization tool in Excel
- Dynamic version of the Schaefer model

INFORMATION AND SOFTWARE

The Chapter 5 of FISH IT deals with the provision of management advice using a simple fishery model that has a biological core. The equilibrium version of the Schaefer model is not utilized in serious fisheries stock assessment. But, since it can be fitted by hand, and is widely used in bio-economics, it is a good introduction to modelling. Then, the biodynamic version of the model, which does not rely on the assumption of equilibrium, is introduced. This part benefited from the recommendations from Punt & Hilborn (1996, 2001). The dataset utilized (King, 2005) is the same as in the previous chapter and allows an interesting comparison among the predictions made with the different methods.

- [Ch5 Surplus production equilibrium and dynamic models JdS.xlsx](#)



* Santos, J. 2015. FISH IT 1.0 – Student Manual: A Training System for Aquatic Resource Managers. *Septentrio Educational* 2015(3). DOI: <http://dx.doi.org/10.7557/se.2015.3> . This work is licensed under a [Creative Commons Attribution 4.0 International License](#).

SNAPSHOTS

