6.9 Other production

Other production refers to production represented in Ecopath by Migration and biomass accumulation. Migration is not the same as import ? emigration and immigration are production factors, while import is food consumption. See Dealing with open system problems for more information on how to treat groups that moves in and out of the modelled area.

If *B, P/B, Q/B* and *EE* are entered for a group, a prompt will appear during parameterization asking if you want to estimate biomass accumulation. If you answer no to this, a new prompt will ask if you want to estimate net migration. If you answer yes, the program will estimate net migration.

The net migration is calculated as immigration less emigration. This means that net migration will be negative if there is more coming into the system than leaving it. This may seem contradictory but it should be remembered that a negative mortality yields an increase in population. Fisheries biologists rarely consider migration, at least in biomass terms, and even more rarely quantify it. If the net migration is positive (immigration > emigration), but not entered, the main effect will depend on the previous entries:

- if the production had been entered, the fraction of production directed toward the detritus will be overestimated; or
- if production was to be estimated, this estimate will be underestimated.

Immigration

Migration into the area covered by the model. Must be entered as a non-negative value. Unit is a flow, e.g., t / km² / year.

Emigration

Migration out of the area. Must be entered as a non-negative value. Unit is a flow, e.g., t / km² / year.

Emigration rate

Emigration can also be presented as the proportion of the population emigrating from the system in a year (unit is /year). The immigration rate can be entered by setting the emigration rate to a negative value.

Biomass accumulation

Ecopath is not necessarily a steady-state model. If the biomass for a group is known, e.g., at the beginning of the year and at the beginning of the next year, the biomass accumulation (*BA*) can be calculated as the difference between these biomasses. *BA* is a production term that can be entered for all living groups (default is 0), but is calculated for detritus groups (Detritus fate). *BA* is a flow term, with a rate unit of, e.g., t / km² / year. The default value for *BA* is zero indicating no biomass accumulation. A negative value signifies biomass depletion (biomass decreased during period modelled).

If *B, P/B, Q/B* and *EE* are entered for a group, a prompt will ask during parameterization if you want to estimate *BA*. If you answer yes to this question the *BA* will be calculated, overruling any *BA* you may have entered.

Biomass accumulation rate

Biomass accumulation can also be represented as a rate (i.e., proportion of the total biomass; unit is /year).