8.2 Ecosim parameters

Enter and store key information on the current Ecosim simulation using the *Ecosim parameters* form (*Time dynamic (Ecosim) >Input > Ecosim parameters*).

Scenario

The top panel of the Ecosim parameters form provides fillable boxes where you can add a scenario **Description** and fill in **Author** and **Contact** details. You can also change the **Name** of the scenario.

Initialization

Duration of simulation (years)

Default is 50 years.

Base proportion of free nutrients

The *Base proportion of free nutrients* parameter sets the base proportion of free nutrients in the algorithm used to represent nutrient cycling. You should read the section on Nutrient cycling and nutrient limitation in Ecosim before attempting to simulate nutrient forcing.

The default free nutrient proportion is set at unity, which causes the free nutrient concentration to be virtually constant over time. Thus to ?turn on? nutrient limitation effects, you must set a lower value for the base proportion of free nutrients parameter, (e.g., 0.3). You can also assign a forcing function to drive nutrient cycling (see below).

Nutrient loading forcing function number

Changes in nutrient loading can be simulated by assigning a time forcing function number to the annual total nutrient concentration on the Ecosim parameters form (the forcing time series can be read from a csv file, see Import time series, or typed directly using the Time series form). In this case, total nutrient concentration N_T is calculated as $N_T = f_t N_T o$, where $N_T o$ is the Ecopath base estimate of N_T (at the start of each simulation) and f_t is a time multiplier ($f_t = 1$ implies Ecopath base value of $N_T o$) supplied by the user the same as any other time forcing function.

Before attempting to simulate nutrient forcing, you should read the section on Nutrient cycling and nutrient limitation in Ecosim.

Fleet/effort dynamics

Ecosim users can specify temporal changes in fishing fleet sizes and fishing effort in three ways:

(1) by sketching temporal patterns of effort in the model run interface (Run Ecosim);

(2) by entering annual patterns via reference csv files along with historical ecological response data (see Time series); or

(3) by treating dynamics of fleet sizes and resulting fishing effort as unregulated and subject to fisher investment and operating decisions.

To invoke the fleet/effort dynamics model (Option (3) above), check the *fleet/effort dynamics* box on the *Ecosim parameters* form. When this box is checked, Ecosim erases all previously entered time patterns for fishing efforts and fishing rates, and replaces these with simulated values generated as each simulation proceeds. See Modelling effort dynamics for detailed description of the effort dynamics model. Set the input parameters for this model, using the Fleet size dynamics form.

Contaminant tracing

When the *Contaminant tracing* box is checked, Ecosim can be used to predict changes in concentrations (and per-biomass burdens) of chemicals like organic contaminants and isotope tracers that ?flow? passively along with the biomass flows. Set the parameters for contaminant tracing using the Ecotracer input form?. This form also contains description of how contaminant tracing is handled in Ecosim.