

## Management Strategy Evaluator = *User notes (beta ver. 6.0.6.1112)*

### Inputs

**Input uncertainty** Sets inputs use for the perturbation of variables

#### Groups

- **CV** Coefficient of variation used for perturbation of biomass
- **Kalman weight** Kalman weight used for perturbation of biomass

#### Fleets

- **CV** Coefficient of variation used for perturbation of effort
- **Annual increase in catchability** Amount catchability will increase each year

**Input reference levels** Sets reference levels for performance evaluation and target fishing mortalities

- **MSY** Uses the results a Maximum Sustainable Yield search to set Biomass limit, Biomass base and F max. for the target fishing mortalities

**Group** Evaluation of model runs has not been implemented yet so setting of reference levels has no effect

- **Biomass lower** Lower biomass limit
- **Biomass upper** Upper biomass limit
- **Catch lower** Lower catch limit on a group
- **Catch upper** Upper catch limit on a group

#### Fleet

- **Lower** Lower catch limit by a fleet
- **Upper** Upper catch limit by a fleet

**Input regulatory** Sets inputs used for the fisheries regulations

**Regulatory option** Sets how the effort of a fleet will be regulated

- **Max effort** *Not implemented at this time.* Caps the effort of a fleet no matter what regulatory option has been chosen
- **Not used** No regulation will be used for this fleet
- **Effort** *Warning has not been tested or validated.* Effort is regulated by computing target fishing mortality using Biomass limit, Biomass base and F max. from estimated biomass. If target fishing mortality exceeds achieved fishing mortality then fishing effort is scaled back.
- **Weakest Stock quota** Quota for the year is computed from Biomass limit, Biomass base and F Max using estimated biomass. Effort is regulated if any catch (landings + discards) on a group exceeds its quota.
- **Strongest stock + discards quota** Quota for the year is computed from Biomass limit, Biomass base and F Max using estimated biomass. Effort is regulated if landings on the strongest stock exceed the quota. Bycatch on other stocks is discarded.
- **Selective fishing quota** *still needs explanation*
- **Fleet Quotas** Quota by group and fleet used to compute fleet share of quota on a group.
- **Target fishing mort policy** Sets parameters for target fishing mortality. Biomass limit Biomass base and F max.
- **Fixed escapement** Sets fixed escapement biomass of a group. If this value is set then the quota for the year is computed as [estimated biomass] - [fix escapement] instead of using the target fishing mortality parameters.

**Input effort tracking** Sets weights used when evaluating current Ecosim scenario.

- **Objectives weights**
- **Ecological weights**
- **Fleet weights**

### Outputs

**Run MSE** Run the Management Strategy Evaluation.

**Effort and regulatory options** Options to set how or if the fishery is regulated for the current run.

- **Predict effort(fleet size dynamics) regulate using quotas** Effort for the year is predicted by Ecosim using the Fleet/effort dynamics model. The fishing effort is then regulated according to the target fishing mortality and the options selected in the **Regulatory options** dialogue.
- **Ecosim effort regulate using quotas** Ecosim is run using effort from the current scenario. The fishing effort is then regulated according to the target fishing mortality and the options selected in the **Regulatory options** dialogue.
- **No regulations evaluate current Ecosim scenario** Ecosim is run using effort from the current scenario. No attempt is made to regulate the fishing effort. This option is used to evaluate the current Ecosim scenario.

**Ecosim scenario options** Option on how perturbation are implemented when the **No regulations evaluate current Ecosim scenario** is in effect

- **Catch/estimated biomass**
- **Direct exploitation**

- **Exact biomass known**