

## **Wikiprint Book**

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## Running Ecosim on a variable time step

Ecosim can be run on a variable time step via a plugin. When run from the Scientific Interface Ecosim runs 1 time step per month, 12 time steps per year. The number of timesteps per month can be set in code via the `cEcosimDataStructures.StepsPerMonth` property. This allows a plugin to run Ecosim on sub time steps, multiple time steps in a month.

### Sub time step data

When running on sub time steps Ecosim will only update its results objects `cCore.cEcoSimResults()`, `cCore.cEcosimGroupOutput()`, `cCore.cEcosimOutput()` and `cCore.cEcosimFleetOutput()` once at the end of the month. Data computed for the sub time step can only be access via the `cEcosimDataStructures` provided by the `IEcosimSubTimestepsPlugin.EcosimSubTimeStepBegin()` and `IEcosimSubTimestepsPlugin.EcosimSubTimeStepEnd()` plugin points. The `IEcosimBeginTimeStepPlugin.EcosimBeginTimeStep()` and `IEcosimEndTimeStepPlugin.EcosimEndTimeStep()` will only be call at the start and end of the month not during the sub time step and will not contain the sub time step data.

### Sub time step plugin points

`IEcosimSubTimestepsPlugin.EcosimSubTimeStepBegin(ByRef BiomassAtTimestep() As Single, ByVal TimeInYears As Single, ByVal DeltaT As Single, ByVal SubTimestepIndex As Integer, ByVal EcosimDatastructures As Object)`

- Called at the start of a sub time step.
- `BiomassAtTimestep()` contains the biomass that will be used for the time step. Any changes to biomass by a plugin point will be use be by Ecosim for the time step.

`IEcosimSubTimestepsPlugin.EcosimSubTimeStepEnd(ByRef BiomassAtTimestep() As Single, ByVal TimeInYears As Single, ByVal DeltaT As Single, ByVal SubTimestepIndex As Integer, ByVal EcosimDatastructures As Object)`

- Called at the end of a sub time step.
- `BiomassAtTimestep()` contains the biomass computed for the time step.