

ECOFATE

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| Model Uses | ECOFATE is a computer tool used for assessing chemical emissions from point and non-point source pollution sources for the purpose of developing Ecosystem-based risk assessments and determining potential effect on human health. | |
| Major Categories | Geomorphology; Decision Support; Water Quality | <u>Subject Knowledge Level</u> Intermediate |
| Minor Categories | Chemical; Ecological Risk Assessment; Point Source; Non-point Source; Time Series | <u>Technical Difficulty Level</u> Intermediate |
| Model Type | Conceptual Model | <u>Geographic in Nature?</u> No |

Abstract

EcoFate is a software package for conducting ecosystem based environmental and ecological risk assessments of chemical emissions by point and non-point sources in freshwater and marine aquatic ecosystems, including lakes, rivers and marine inlets.

EcoFate is designed to assess the cumulative impact of chemical inputs in terms of contaminant concentrations in water, sediment and biota of an entire ecosystem and to interpret these concentrations in terms of exceedance of environmental criteria and standards, potential for toxic effects in biota of the ecosystem and risks to human beings exposed to contaminated fish products or contaminated water.

EcoFate consists of a combination of an environmental fate, food-web bioaccumulation, toxicological hazard, and human health risk assessment model, which are integrated to directly relate chemical emissions to concentrations, toxic effects and human health risks. Each of the models is based on best available knowledge of the mechanisms of chemical distribution, toxicity and risk. The assessments can be done on a time-dependent and time-independent (i.e. steady-state) basis.

The main purpose of EcoFate is to investigate whether existing or planned chemical emissions can be expected to pose an ecological or human health risk, meet environmental quality standards or criteria and to identify the “assimilative capacity” of ecosystems for chemical substances in terms of maximum daily loadings.

Future Developments

Unknown

Model Limitations

Unknown

Model Features

- Capable of modeling in freshwater or marine ecosystems
- Contains a combination of models that address environmental fate, food-web bioaccumulation, toxicological hazard, human health risk
- Capable of working on a time-dependent or independent basis

Required Data Types

Information pertaining to concentration, type and point / non-point source.

Model Outputs

Unknown.

Source

Simon Fraser University, Canada

Source (URL)

<http://www.rem.sfu.ca/ecofate/ecofate.html>

Hardware Requirements

PC (386 or higher CPU)
VGA monitor or better
4 MB of memory
5 MB of disk space
DOS 3.1 or later

| Supported Platforms | | | |
|---------------------|-------------------------------------|-----------|--------------------------|
| DOS | <input type="checkbox"/> | UNIX | <input type="checkbox"/> |
| Windows | <input checked="" type="checkbox"/> | Macintosh | <input type="checkbox"/> |

Software Requirements

Windows 3.1 or later

Cost, Licensing and Availability

Free, available from the link above.