

TRIM.FaTE USER'S GUIDE

MODULE 1: SOFTWARE OVERVIEW

This module describes the components of the TRIM.FaTE graphical user interface (GUI) and presents an overview of the basic user functions used to navigate TRIM.FaTE windows. Section 1 summarizes basic user functions that apply to TRIM.FaTE. Section 2 summarizes the components of the TRIM.FaTE Main Window that appears when the model is executed. Section 3 describes how to navigate the TRIM.FaTE library window, and Section 4 presents an overview of navigating the TRIM.FaTE project and scenario windows.

1. BASIC TRIM.FaTE FUNCTIONS

This section describes the main functions used to navigate through TRIM.FaTE as well as short-cuts and suggestions. The short-cuts discussed below are typically available in most Windows-based programs.

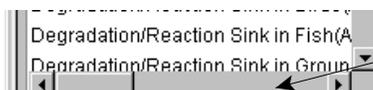
Cutting and Pasting. Data can be cut and pasted within TRIM.FaTE tables, and between TRIM.FaTE and certain other applications, using the standard method for your computer (e.g., for PCs, use Ctrl-C to copy, Ctrl-X to cut, and Ctrl-V to paste).

Selecting/Highlighting Items. Several methods can be used to select objects within TRIM.FaTE windows and tables.

- To select a single object, place the mouse pointer on the object and click once with the left mouse button.
- To select a continuous set of objects, select the first object as above, scroll to the last object to be selected, and hold down the Shift key while single clicking with the left mouse button.
- To select a non-continuous range of objects, select the first object, scroll to the next object to be selected, and hold down the Control key while single clicking with the left mouse button. Select any remaining desired objects while continuing to hold down the Control key.

Once an item has been selected, it will be highlighted by the model (i.e., the “background” behind the title of the object will be darkened).

Using Scroll Bars. If a window is not large enough to display all of its contents, scroll bars will appear to the left and/or bottom of the text, with small arrows at the top and bottom and/or left and right of the window. Click these arrows, or click and drag the small rectangle within the scroll bar, to move up/down or left/right and reveal additional text.



The user can use either the rectangle in the scroll bar or the arrows on the ends of the scroll bar to move up and down (or right and left) within the text.

Moving Windows. Windows in TRIM.FaTE can be moved around the Main Window (which is seen as a background when additional TRIM.FaTE windows are open) by placing the mouse pointer on the title bar (directly above the menu bar along the top) and clicking and holding the left mouse button while dragging the window to the desired position. TRIM.FaTE windows cannot be moved outside of the Main TRIM.FaTE Window.

Sizing Windows. When working within TRIM, it is common for several windows to be open simultaneously. In these cases, it can be helpful to adjust the size of the open windows to view more or fewer windows at once. Windows can be resized using the following steps.

- Place the mouse pointer on any corner of the window. The pointer should change into a black double-headed arrow (i.e., ↔).
- Click the left mouse button and drag the pointer outward or inward until the window is the desired size. An outline of the window will appear while the user adjusts the size of the window.

Using Window Splitters. Window splitters are dividers that separate panes within a single window. To change the relative sizes of the panes, place the mouse pointer on the boundary between the panes so that a black double arrow appears (i.e., ↔), then click and drag the divider to the left/right or up/down. The user can make an empty pane of the window disappear by placing the mouse pointer over one of the small arrows near the top of the splitter of the non-empty pane and single-clicking the left mouse button. The user can make the empty pane reappear by down-sizing an adjacent window.

Resizing and Rearranging Columns in a Table. The columns in a table displayed in a window can be resized by placing the mouse pointer between two column labels and then clicking and dragging the pointer to the left or right. The order of columns in a table can be rearranged by placing the mouse pointer over the title of the column, and clicking and dragging the mouse pointer to move the column to a new position.

Closing Windows. Open windows in TRIM.FaTE can be closed by clicking on the small grey box in the upper right hand corner of the window that is marked with an “X.”

2. TRIM.FaTE MAIN WINDOW

The TRIM.FaTE Main Window will appear when the model is started. This will consist of an empty window with a menu bar at the top. The menu bar in the TRIM.FaTE Main Window contains four pull-down menus: *File*, *Edit*, *Windows*, and *Help*. Table 1 lists the items found in each pull-down menu and their functions.

Table 1
TRIM.FaTE Main Window Pull-down Menu Items and Functions

Pull-down Menu	Menu Item	Function
File	New Project	Create a new project.
	Open Project	Open an existing project.
	Most Recently Opened Project	Open the most recently opened project.
	New Library	Create a new library.
	Open Library	Open an existing library.
	Most Recently Opened Library	Open the most recently opened library.
	Close All	Close all windows open in TRIM.FaTE. The user will receive a prompt asking whether they want to save or not.
	Preferences	Set preferences for running TRIM.FaTE, including user path, TRIM path, and username/password for MySQL database setup. By default, the system will look for and place data in a subdirectory of the user path named "data."
	Exit FaTE	Close TRIM.FaTE and all its windows.
Edit	Undo	Undo the last operation (where available).
	Redo	Redo the last operation (where available).
Windows	[varies according to which windows are currently open]	Show a list of all open TRIM.FaTE windows; go to a particular window by choosing from the list.
Help	TRIM.FaTE Computer Framework Guide	Open the TRIM.FaTE Computer Framework Guide that is packaged with the model [Note: the Framework Guide is not this set of User's Guide modules].
	Copyright...	Provide TRIM.FaTE copyright information.
	About...	Provide basic information about TRIM.FaTE.

3. NAVIGATING LIBRARIES

A library populated with objects (e.g., algorithms, chemicals, compartments) must be created and added to a TRIM.FaTE project before a TRIM.FaTE scenario can be developed. This section describes the windows and editors that can be used to examine and change existing libraries. Note that although the basic commands for creating a new library are presented here, this section is not meant to include comprehensive guidance on how to successfully create a working TRIM.FaTE library (see Module 4 for information on that topic).

The user can **open an existing library** by:

- Selecting "Open Library" from the *File* pull-down menu in the Main Window and
- Selecting the TRIM.FaTE library file to be opened in the File Browser.

The user can **create a new library** by:

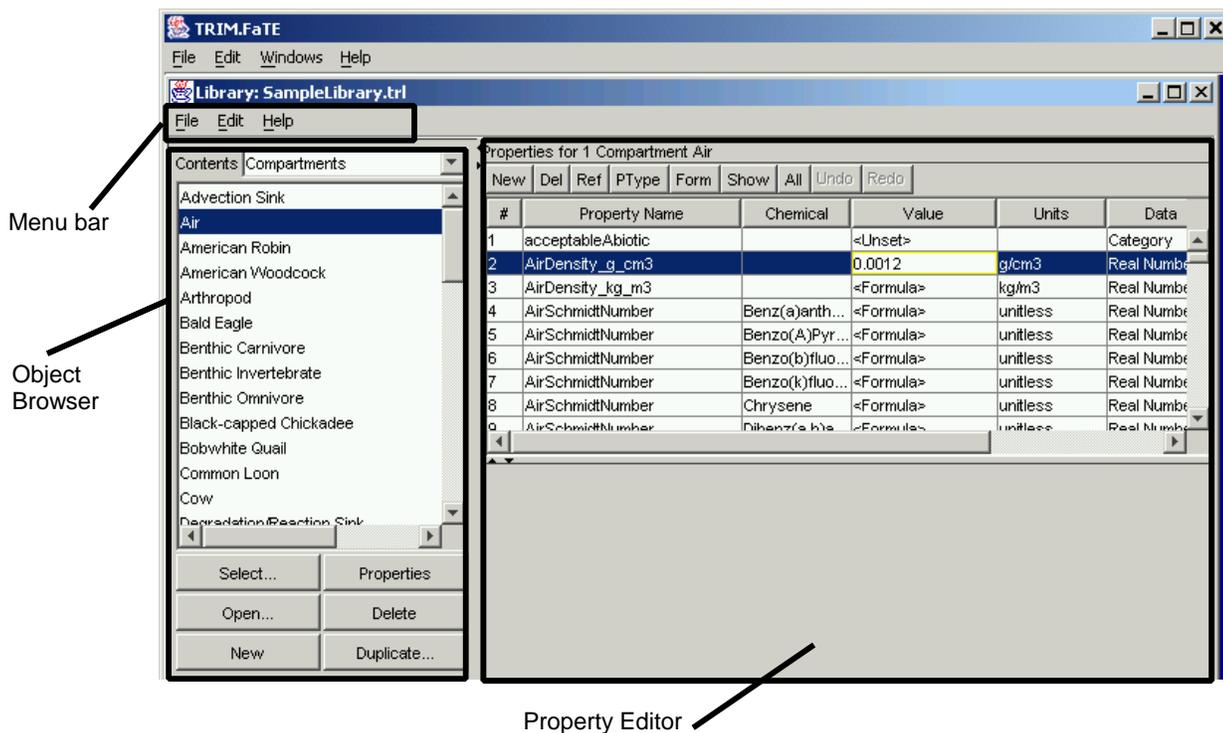
- Selecting “New Library” from the *File* pull-down menu in the Main Window and
- Entering a new name for the library in the pop-up window.

Alternatively, the user can create a new library by opening an existing library, clicking on the *File* pull-down menu on the Library window (see Section 3.1), selecting the “Save Library As...” command, and saving the library under a different name. This feature is useful if the user wishes to “customize” an existing library (e.g., by incorporating site-specific property values) while retaining many of the original library values.

The Library Window is displayed in Figure 1 and contains three sections described in the sections that follow:

- The menu bar at the top (Section 3.1);
- The Object Browser on the left (Section 3.2); and
- The Property Editor on the right (Section 3.3). The Property Editor appears only after the user has selected an object within the Object Browser and clicked on “Properties.”

Figure 1
Library Window



3.1 Menu Bar

The menu bar at the top of the Library Window has three pull-down menus: *File*, *Edit*, and *Help*. Table 2 below provides summaries and functions for each pull-down menu item.

Table 2
Library Window Pull-down Menu Items and Functions

Pull-down Menu	Menu Item	Function
File	Open Library	Open another library. The user is prompted with a file browser.
	Import	Import objects to the library from a file. The user is prompted for the type of importer to use and to choose a file to write to using a file browser.
	Export	Export all objects in the library to a file. The user is prompted for the type of exporter to use and to choose a file to write to using a file browser.
	Export Selected	Export only the currently selected objects in the library to a file. The user is prompted for the type of exporter to use and to choose a file to write to using a file browser.
	Save Library	Save the library to a file using its current filename (if it is a newly created library, the user is prompted to choose a filename).
	Save Library As	Save the library to a new filename.
	Close Library	Close the library. The user will receive a prompt to save any changes to the library.
	Close All	Close all open windows. The user will receive a prompt to save any changes.
Edit	Undo	Undo the last operation (when available).
	Redo	Redo the last operation (when available).
	Edit Library Description	Edit the textual description of the library.
Help	TRIM.FaTE Computer Framework Guide	Open the online TRIM.FaTE Computer Framework Guide that is packaged with the model.

3.2 Object Browser

The Object Browser, located in the left pane of the Library Window, allows the user to view and modify the contents of the library. Objects that exist in a library are grouped into the following categories:

What is an Object?

An **object** is any component that can be defined within the framework of TRIM.FaTE, such as a compartment, a property type, a volume element, or a scenario. Objects are the basic “building blocks” of a TRIM.FaTE simulation. Many of the objects that are used in TRIM.FaTE are contained in the TRIM.FaTE library.

- Algorithms;
- Chemicals;
- Compartments;
- Composite Compartments;
- Sources; and
- Property Types.

The user can view a list of the objects in each category by selecting the category name from the *Contents* pull-down menu at the top of the Object Browser. The Object Browser is shown in Figure 2 below; the functions of the components of the Object Browser are summarized in Table 3.

Figure 2
Object Browser

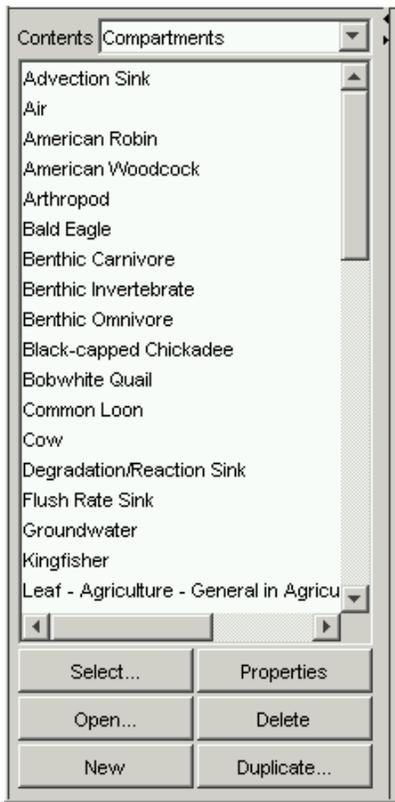


Table 3
Object Browser Functions

Object Browser Item	Function
Contents [pull-down menu]	Select the object category displayed in the Contents pull-down menu in the Object Browser Window. The available choices are Algorithms, Chemicals, Compartments, Composite Compartments, Sources, and Property Types.
Select	Select all objects in the selected “Contents category that contain a string of text. The user is prompted for the string. After selecting “OK,” all of the objects containing the string as part of their name will be selected.
Properties	In the Property Editor, show the properties for all selected objects.
Open	Open editors (usually Object Windows) for each of the selected objects.
Delete	Delete all selected objects.
New	Create a new object of the category type currently selected in the Contents menu.
Duplicate	Make duplicate copies of all selected objects. The user is prompted to name each of the duplicates.

3.3 Property Editor

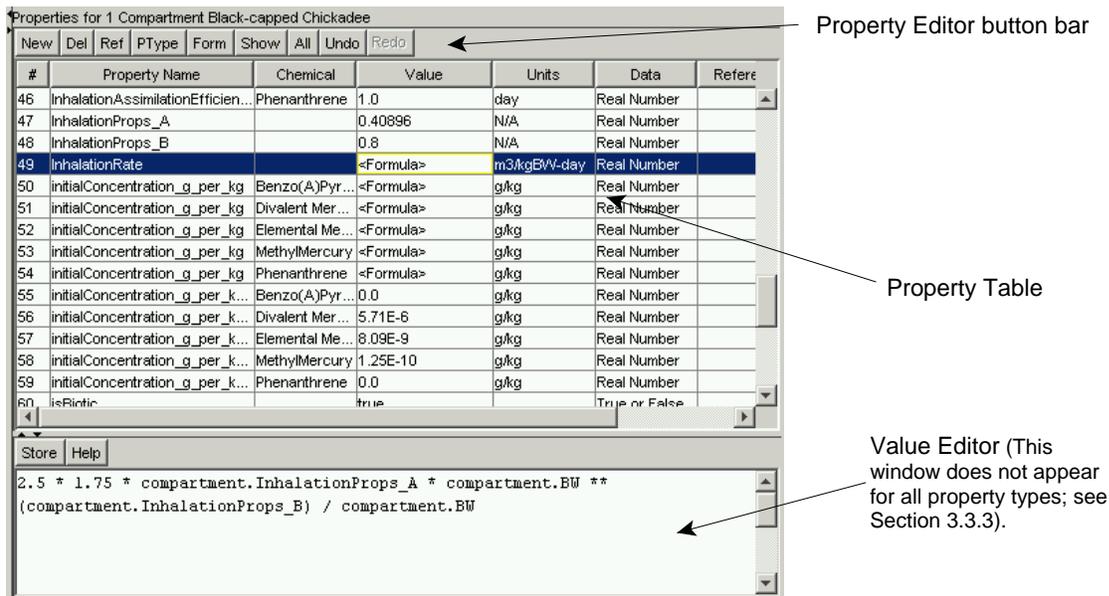
The Property Editor comprises the right side of the Library Window as presented in Figure 1 and is opened by selecting an object in the Object Browser (see Figure 2) and then clicking the “Properties” button. The Property Editor is used throughout TRIM.FaTE windows to add and remove properties (e.g., background concentration, mass fraction, demethylation rate) for objects (e.g., air, kingfisher, sediment) and to view and edit property values. This window is the main “portal” for users to see and edit the data stored within a TRIM.FaTE library.

The Property Editor consists of the following three parts, as shown in Figure 3:

- The Property Editor button bar (at the top);
- The Property Table (in the center); and
- The Value Editor (at the bottom).

The three parts of the Property Editor and the Object Windows that can be used to add, remove, view or edit properties are described in the subsections below. In addition, several types of Object Windows (a special pop-up window that appears when directed by the user) are used to edit properties for certain objects (see Section 3.3.4).

Figure 3
Property Editor in Library Window



3.3.1 Property Editor Button Bar

The buttons on the Property Editor button bar and their functions are summarized in Table 4.

Table 4
Property Editor Button Bar Items and Functions

Property Editor Button	Function
New	Create new properties. The user is prompted to select one or more property types for which to create properties and one or more chemicals to which the new properties apply. If the property is not chemical-specific, the user should select "<None>" in the chemical window. The system then creates new properties for each selected property type using the selected chemical(s). If the Property Editor is editing multiple objects, the new properties are added to each object.
Del	Delete all selected properties from the objects for which the Property Editor displays properties.
Ref	Open windows that display the descriptions for all selected properties.
PType	Open the Property Type Windows for all selected properties and displays general information about the selected property or properties.
Form	This option is for real number properties only. The user is prompted to select the new form of the property. The available forms are constant, formula, or time-stepped values.
Show	Select the type of properties to be shown in the Property Editor. The user can select from the following properties in the Change Property Selection box which appears: All, Unset, Formula, Constant Numeric, Constant, Time Stepped, and Starting with the String (the user is prompted for a string).
All	Select all of the properties listed in the Property Table.
Undo	Undo the last operation (when available).
Redo	Redo the last operation (when available).

3.3.2 Property Table

The Property Table allows the user to view, add, delete, or modify properties for one or more objects. This table is configured in TRIM.FaTE so that the user can perform these actions on a number of objects simultaneously, thereby providing a very efficient way to make changes to a library.

To display properties in the property table, the user should select one or more objects using the Object Browser and click the "Properties" button below the Object Browser. The label at the top of the Property Editor indicates whether one or multiple objects are being displayed in the Property Table. Specifically, this label provides the number of compartments and lists the object names as space allows (e.g., "Properties for 1 Algorithm a," "Properties for 3 Algorithms a, b, c").

The Property Table displays information in separate columns about the properties for the selected object(s), including the property name, chemical qualifier (i.e., whether the property is specific to a chemical), property value, units (as applicable), data type for that property, reference, and auxiliary (an additional column that is not currently used). Only the Value and Reference fields can be edited directly in the property table. When editing either of these two fields, **the user must press Enter after making edits to store the changes that have been**

typed in or press Esc to cancel them. This is an important point for the user to remember because TRIM.FaTE does not prompt the user to store changes to the Value or Reference fields.

Viewing Property Values for Multiple Objects. When multiple objects are selected in the Object Browser window (e.g., both black-capped chickadee and American robin) and the “Properties” button is clicked, the values for the properties of these objects are compared and results are displayed in the Value field in the Property Table. There are three potential types of results.

- If the values are the same for all of the selected objects, the actual value is shown in the field.
- If the values are not the same for all of the selected objects, “<Differ>” appears in the field.
- If the property does not exist for all selected objects, “<Not in all>” is displayed.

To add a property that is currently included for only some of the selected objects to all selected objects (i.e., properties with “<Not in all>” values):

- Delete the property by using the Del button in the Property Editor; and
- Add the property back using the New button (as described in Table 4).

Note that data in the Value and Reference fields can also be changed for multiple objects simultaneously by editing the appropriate cell in the Property Table (as long as the value will be the same for each object).

Data Types in TRIM.FaTE. The Data field in the Property Table describes the data type for a given property (e.g., real number, text, true or false, category). The data types available in TRIM.FaTE are summarized in Table 5. The type of data is a characteristic of the property type and can be changed for some property types via the Property Type Window (see Section 3.3.4).

Table 5
Data Types in TRIM.FaTE

Data Type	Description
Real Number	Properties of this data type can be defined using one of the following formats (or forms, in TRIM.FaTE): <i>constant real numbers</i> (e.g., 0.056, 4.5E-10), <i>unevenly time-stepped real numbers</i> (a sequence of real numbers with associated dates and times), or <i>formula real numbers</i> (mathematical formulas that can include references to other properties). The syntax used for specifying values for formula real number properties is provided in Appendix A of Module 14.
Integer	Properties of this data type must be defined as integers (e.g., 10, 546).
True or False	Properties of this data type must be defined as either “true” or “false.”
Text	Properties of this data type must be defined as alphanumeric text (e.g., Mercury, benchmarks1).

Data Type	Description
Category	<p>Properties of this data type are defined using a hierarchical classification for objects ordered from most general to most specific, with each level separated by a vertical bar (" "). Each algorithm, chemical, and compartment is assigned a category. Chemical and compartment categories are used in algorithms to specify the types of compartments and chemicals to which the algorithm should apply. Users can specify more generalized categories in order to apply an algorithm to a group of chemicals and/or compartments. For example, an algorithm with the <i>chemicalCategory</i> "Mercury" will apply to chemicals with the categories "Mercury Divalent Mercury," "Mercury Elemental Mercury," and "Mercury MethylMercury." Users can specify that an algorithm applies to all chemicals or compartments in the library using the "All" category.</p>
Date and Time	<p>Properties of this data type are used to specify time during a model simulation (e.g., starting time, ending time, time when an input value changes). Properties of this data type should be specified in the following format:</p> <p style="text-align: center;">MM/DD/YYYY HH:MM:SS TimeZone</p> <p>For example, 12/10/2002 05:00:00 EST.</p>

Specifying Property Form. The values for properties with the "Real number" data type can be set to one of the following four forms:

- Formula real number;
- Unevenly time-stepped real number;
- Unevenly time-stepped real number from file; or
- Constant real number.

Properties of the form "formula real number" are calculated by TRIM.FaTE from other properties (refer to Module 4, Adding New Components to a Library, for more information on formula properties). The time-stepped real number forms are used to assign property values that change over time. Properties that are of the form "constant real number" can be assigned a number value by the user.

To create a property that varies over time:

- Select a property with the Real number data type (found in the Data field) and click the "Form" button on the Property Editor button bar.
- A Change Property Form box will appear. Choose "Unevenly Time Stepped Real Number."
- Use the "Insert" button or the Value Editor that appears to enter data by hand (see Section 3.3.3), or use the "Import" button to load data from a file (see Module 3, Library and Scenario Data Files, for a detailed description of how to format and use time-varying data saved to a file).

Specifying References for Property Values. The Property Reference field can be used to specify where a particular value was obtained or other useful information at the user's discretion.

3.3.3 Value Editor

The Value Editor that appears in the lower pane of the Property Editor is only used for a property whose value is *real number* but does not have the form *constant real number*. These forms include:

- Formula real number;
- Unevenly time-stepped real number; and
- Unevenly time-stepped real number from file.

For these property forms, the property value will be either a formula or a series of values that are valid for specified time ranges. The Value Editor is used to view and edit the formula or time-stepped data for properties with these forms. Note that values for other types of property forms (i.e., *not* formula or time-stepped) are edited directly in the Property Table; a Value Editor does not appear for these other property forms.

Formula Real Numbers

For a property whose value is designated as a **formula**, the Value Editor displays the formula. Formulas can be edited directly by the user in the Value Editor (refer to Module 4, Adding New Components to a Library, for more information on formula properties, including a complete description of the formula syntax used in TRIM.FaTE). An example of a formula property whose formula is displayed in the Value Editor is displayed in Figure 3.

Unevenly Time-stepped Real Numbers Not Saved to a File

For a time-varying property whose values consist of **time-stepped data** that are **not saved in a file** external to TRIM.FaTE, the user can specify the values using the functions summarized in Table 6. These functions appear as buttons at the top of the Value Editor. The time-stepped data values will appear in a matrix in the value editor and can be edited directly by the user.

Table 6
Value Editor Buttons for Time-stepped Real Number Properties
 (applies to time-varying data *not* saved to an external file only)

Value Editor Button	Function
Insert	Insert a row for a new time/value pair for an unevenly time-stepped property. The new row is placed after the currently selected row.
Delete	Delete all selected rows for an unevenly time-stepped property.
Store	Store the contents of the formula or unevenly time-stepped property with the property. Until Store is clicked, any changes made will not be saved with the property.
Import	Import the properties for an unevenly time-stepped property from an external file. The user is prompted for a text file from which values will be imported into an unevenly time-stepped property. Data do not need to be provided at regular intervals and are treated as a step function in intervening periods. For detailed information on data files containing time-varying data, refer to User's Guide Module 3.
Sort	Sort the data for an unevenly time-stepped property by date and time.
Help	Show a help window for the Value Editor.

Unevenly Time-stepped Real Numbers Saved to a File

For a time-varying property whose values consist of **time-stepped data that are saved in a file** external to TRIM.FaTE, the Value Editor will contain windows and buttons that can be used to select and save time-varying data stored in an external file (e.g., a text file). For a complete description of time-varying data files and how the Value Editor is used to access and store these data, refer to Module 3, Library and Scenario Data Files.

3.3.4 Object Windows

An Object Window is a special window used to view or edit the properties and other attributes of certain objects. An Object Window will appear only when directed by the user (see details below). There are three types of Object Windows:

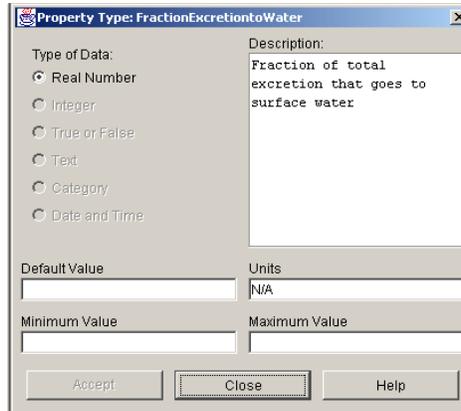
- Property Type Window;
- Composite Compartment Window; and
- Generic Object Window.

Each type of Object Window is discussed in a subsection below.

Property Type Window

The Property Type Window is used to show and edit (where allowable) property types, which are one of the object categories listed in the Contents pull-down menu in the Object Browser. The Property Type Window is the **only** place that the user can view and edit the attributes of a property type. A Property Type Window is shown in Figure 4.

Figure 4
Property Type Window



The Property Type Window can be opened by selecting a property of an object (e.g., inhalation rate of the bald eagle) and then clicking on the *PType* button at the top of the Property Editor window. The Property Type Window has six fields and three buttons, as described in Table 7.

Table 7
Property Type Window Items and Functions

Property Type Window Item	Function
Type of Data	Allows the user to select the type of data stored by the property. The type of data stored by the property is selected by clicking one of the following buttons: Real Number, Integer, True or False, Text, Category, or Date and Time.
Description	Allows the user to add a description for the Property Type. This description will be shown as a “tool tip” in the property table of the Property Editor. It should provide general information, such as a definition of the property type and its uses.
Default Value	Allows the user to enter a default value in the Default Value field (note that this is not the same as the property’s assigned value). This value must be valid for the type of data stored by the Property Type.
Units	Allows the user to enter units for numeric Property Types. If the Property Type is for numeric data (i.e., Integer or Real Number), the Units field must be filled in. This means that all properties with the same name/Property Type will have the same units. If different units are used for the same conceptual property, these must be defined as separate property types.
Minimum Value	Allows the user to enter minimum values for <i>numeric data</i> in the Minimum Value field. Other Property Types (i.e., True or False, Text, Category, Date and Time) do not include minimum values.
Maximum Value	Allows the user to enter maximum values for <i>numeric data</i> in the Maximum Value fields. Other Property Types (i.e., True or False, Text, Category, Date and Time) do not include maximum values.
Accept [button]	Allows the user to accept a change after it has been made. Window closes automatically after Accept is selected.

Property Type Window Item	Function
Close [button]	Closes the Window. When the user does not make any changes to the Property Type Window, Close is used to close the Window. When a change has been made to the fields in the Property Type Window, the user must first accept the change and can then close the Window.
Help [button]	Shows the online TRIM.FaTE Computer Framework Guide.

The only field that must be populated for all Property Types is the type of data. In addition, all numeric property types (e.g., real numbers, integers) must also specify the units of the property type. The user can edit any of these fields, provided that the Property Type is not “locked.” For some basic properties, such as the *category* property of any compartment in the public reference library, the Property Type is locked and the user does not have the option of making changes to Property Type fields.

Composite Compartment Window

The Composite Compartment Window is used to show and edit properties of composite compartments (refer to Module 4, Adding New Components to a Library, for a more complete description of composite compartments). This window can be opened by selecting a composite compartment object (e.g., coniferous forest) from a library. A composite compartment object can be selected from a library by completing these steps:

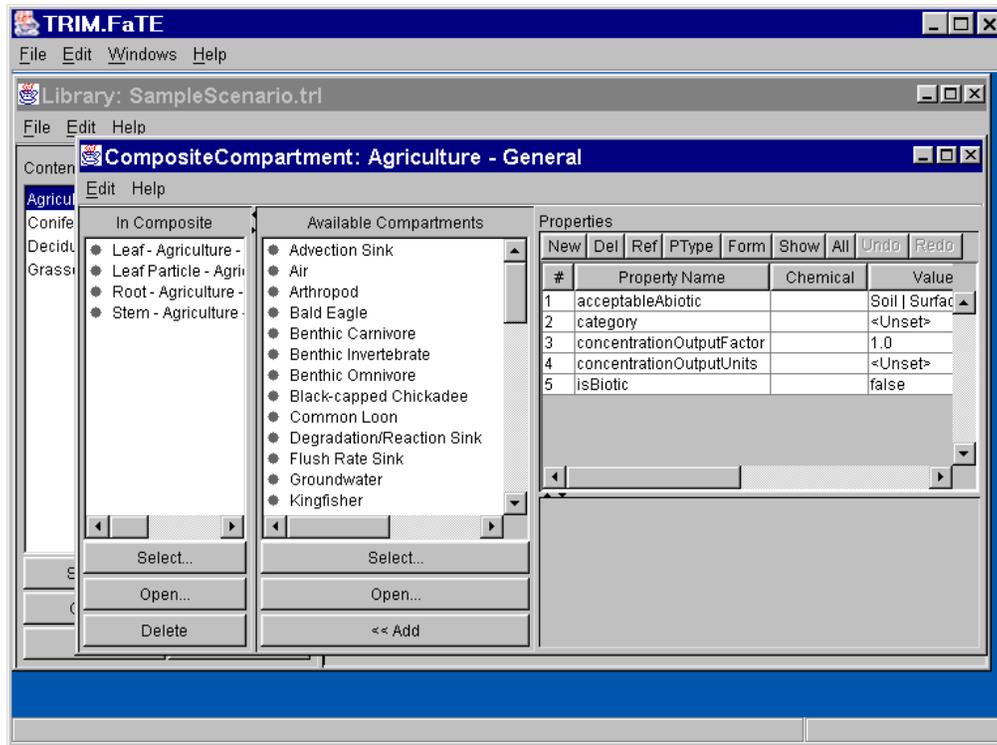
- Select “CompositeCompartments” from the pull-down menu on the object browser.
- Either double-click on the Composite Compartment name or click the “Open” button.

The Composite Compartment Window consists of four parts:

- A menu bar across the top of the window;
- On the left side of the window, a list of compartments currently in the composite compartment (labeled “In Composite”);
- In the middle of the window, a list of compartments that are available in the library (labeled “Available Compartments”); and
- On the right side of the window, a Property Editor for the composite compartment (this editor functions in the same manner as the Property Editor in the main part of the library as described in Section 3.3).

An example of a Composite Compartment Window is shown in Figure 5.

Figure 5
Composite Compartment Window



The menu bar in the Composite Compartment Window contains two pull-down menus. Table 8 summarizes the items in these menus and their functions.

Table 8
Composite Compartment Window Menu Bar Items and Functions

Composite Compartment Pull-down Menu	Menu Item	Function
Edit	Redo	Allows the user to redo the last action (when available).
	Undo	Allows the user to undo the last action (when available).
	Edit Composite Compartment Description	Allows the user to add a new or edit an existing composite compartment description in the Composite Compartment Description Window. When an edit has been made, the user can choose to Accept (and close) the Description Window, or to Cancel the edit to the Composite Compartment Window.
Help	TRIM.FaTE Computer Framework Guide	Show the online TRIM.FaTE Computer Framework Guide.

Table 9 summarizes the buttons below the “In Composite” section of the Composite Compartment Window and their functions.

**Table 9
In Composite Buttons and Functions**

In Composite Item	Function
Select	Allows the user to search for and select compartments from the In Composite list of compartments based on a specified string being contained in the compartment name or compartment category. When the Select button is clicked, a Select In Composite box appears (see Figure 6 below). The Negate Selection check box (in the Select In Composite box) will cause all compartments that do <i>not</i> meet the specified name and category criteria to be selected.
Open	Opens Object Windows for all compartments selected in the list.
Delete	Deletes compartments from the composite compartments. The user first needs to select compartment(s) from the In Composite list by single-clicking on them with the left mouse button and then clicking the Delete button.

**Figure 6
Select In Composite Window**

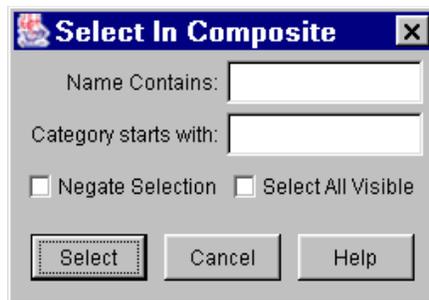


Table 10 summarizes the buttons below the “Available Compartments” section of the Composite Compartment Window and their functions.

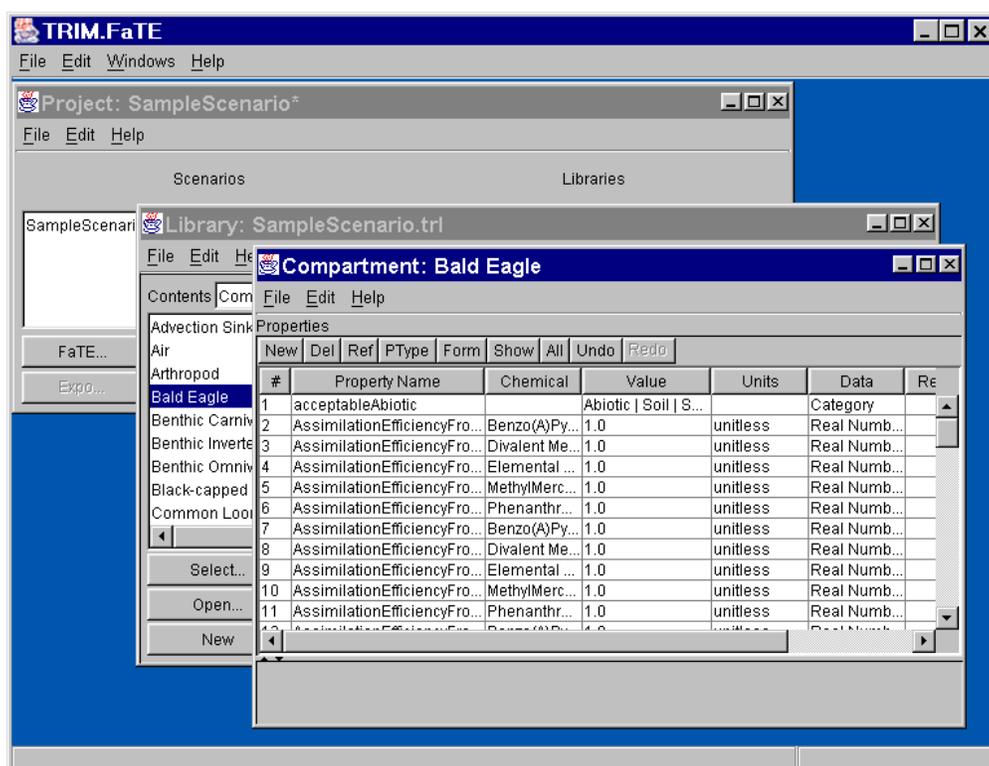
**Table 10
Available Compartments Buttons and Functions**

Available Compartments Item	Function
Select	Allows the user to search for and select compartments from the Available Compartment(s) list of compartments based on a specified string being contained in the compartment name or compartment category. When the Select button is clicked, a Select Available Compartments box appears (similar to Figure 8 above). The Negate Selection check box (in the Select Available Compartments box) will cause all compartments that do not meet the specified name and category criteria to be selected.
Open	Opens Object Windows for all compartments selected in the list.
<< Add	Adds compartments to the composite. The user first needs to select compartment(s) in the Available Compartments list by single-clicking on them with the left mouse button and then clicking the << Add button.

Generic Object Window

For all object types other than property types and composite compartments, opening an object (either by highlighting and clicking the “Open” button in the Object Browser or by double-clicking the object name) displays the same information that is displayed in the Property Editor for a selected object when the “Properties” button is clicked. However, the information that appears when the “Open” button is clicked is presented in a new window (i.e., a “generic object window”) instead of in the Property Editor. Within this window, the user can change the name of the object and view or edit the description of the object. See Figure 7 for an example of a generic object window for the compartment type “Bald Eagle.”

Figure 7
Generic Object Window



The Generic Object Window consists of two parts:

- A menu bar at the top, and
- A Property Editor.

The menu bar contains three pull-down menus: *File*, *Edit*, and *Help*. Table 11 summarizes the items and corresponding functions listed under each pull-down menu.

Table 11
Generic Object Window Pull-Down Menu Items and Functions

Object Window Menu Item	Option	Function
File	Save All	Save all open projects and libraries to disk.
	Close Window	Close this window. The user will receive a prompt to save before closing.
	Close All	Close all windows open in TRIM.FaTE. The user will receive a prompt to save before closing.
Edit	Undo	Undo the last operation (when available).
	Redo	Redo the last operation (when available).
	Rename	Rename this object. (Note that this function is <i>not</i> available via the commands in the Library Window.)
	Description	Edit the description of this object.
Help	TRIM.FaTE Computer Framework Guide	Show the online TRIM.FaTE Computer Framework Guide.

The Property Editor in the Generic Object Window is identical to the Property Editor that appears in the Library Window (as described in Section 3.3). In addition, the commands on the menu bar at the top of both windows are very similar and can be used to view and edit the object description. However, the Generic Object Window also gives the user the option of changing the name of the object using the “Rename” option in the *Edit* menu (this option is not accessible via the Library Window).

4. NAVIGATING PROJECTS AND SCENARIOS

A project contains one or more modeling scenarios and references a library or set of libraries. A scenario is a configuration for a simulation that includes properties such as the starting date/time, ending date/time, and all the information that constitutes the outdoor environment (i.e., volume elements, compartments, and links defined for the project scenario, along with the algorithms associated with each link). Once a library is established, a project can be created with multiple scenarios. Projects and their contents can be saved to a hard drive or disk.

4.1 Project Window

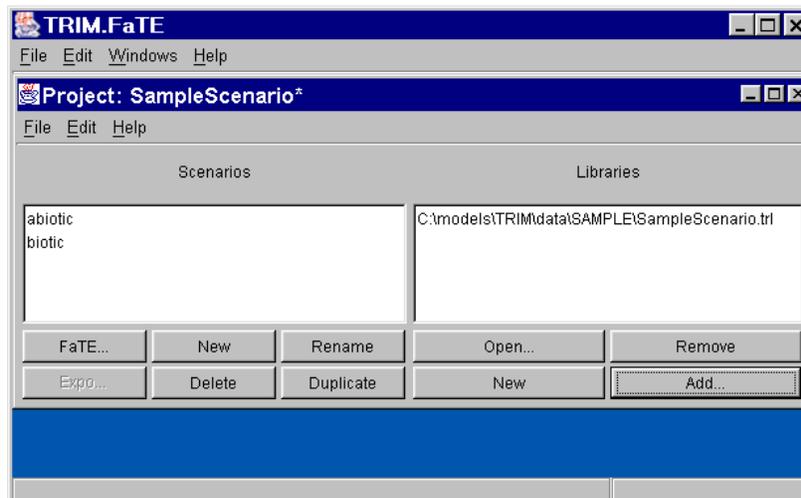
New projects are created with one scenario by default. The user is prompted to name the scenario when a new project is created, and additional scenarios can be added to a project as needed. For convenience, it is suggested that scenarios within a project be related in some manner (e.g., they all pertain to the same geographic location). Each project must be associated with at least one library; the library provides objects for the scenarios.

The user can navigate projects via the Project Window (Figure 8).¹ The Project Window can be opened using the commands under the “File” pull-down menu on the TRIM.FaTE Main Window. There are three parts of the Project Window:

- The menu bar,
- The Scenarios list (left side of window), and
- The Libraries list (right side of window).

There are several buttons located below the Scenarios and Libraries list. Each of the parts of the Project window are described in the sections that follow.

Figure 8
Project Window



4.1.1 Menu Bar

The menu bar of the Project Window has three pull-down menus: *File*, *Edit*, and *Help*. Table 12 summarizes the items listed under each pull-down menu and their functions.

¹ The current version of TRIM.FaTE includes an “Expo” button at the bottom of the Project Window. This button is not functional and will be removed from TRIM.FaTE in a future version.

Table 12
Project Window Pull-down Menu Items and Functions

Pull-down Menu	Item	Function
File	Open Project	Open another project. The user is prompted with a file browser.
	Save Project	Save this project to a file using its current file name. The user is prompted to choose a file name if this is a newly created project.
	Save Project As	Save this project to a new file name.
	Close Project	Close this project. The user will receive a prompt to save before closing.
	Close All	Close all open windows. The user will receive a prompt to save before closing.
Edit	Undo	Undo the last operation (when available).
	Redo	Redo the last operation (when available).
	Edit Project Description	Edit the textual description of the project.
Help	TRIM.FaTE Computer Framework Guide	Show the online TRIM.FaTE Computer Framework Guide.

4.1.2 Scenarios List

The Scenarios List displays the names of the scenarios contained by the project. Table 13 summarizes the buttons that appear below the Scenarios List pane and their functions.

Table 13
Scenarios List Buttons and Functions

Button	Function
FaTE...	Open FaTE Scenario window(s) for the selected scenario(s).
New	Create a new scenario in the project. The user is prompted to name the scenario.
Rename	Rename the selected scenario(s).
Delete	Delete the selected scenario(s).
Rename	Rename the selected scenario(s).
Duplicate	Duplicate the selected scenario(s). The user is prompted for the new name(s). The new scenario is noted to be derived from the original scenario.

4.1.3 Libraries List

The Libraries List window displays the library (or libraries) associated with the current project. Table 14 summarizes the buttons that appear below the Libraries List pane and their functions.

Table 14
Libraries List Buttons and Functions

Button	Function
Open	Open the selected libraries in a Library Window.
Remove	Remove the selected libraries from the project.
New	Create a new library. The user is asked if it is to be added to the project.
Add	Add a previously created library to the project. A file browser is provided to select a library.

4.2 Scenario Window

As described above, a TRIM.FaTE scenario is the basic configuration for a specific modeling application. All objects and properties specific to a simulation comprise the scenario, including the chemicals to be modeled, the media in which fate and transport for these chemicals are modeled, the connections between these media, the spatial layout information constituting the outdoor environment, and the values for all settings. The user should refer to Volume I of the TRIM.FaTE Technical Support Document (EPA 2002) for a complete description of TRIM.FaTE concepts and terminology, as well as other modules of this User's Guide for information regarding implementation of scenario properties.

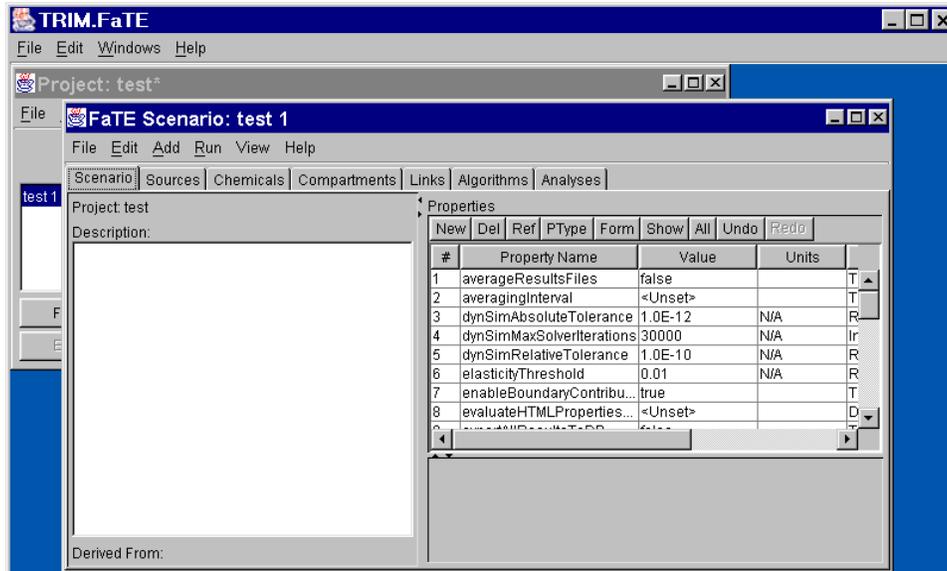
Within the TRIM.FaTE computer framework, the user accesses the properties of a scenario using many of the same (or similar) tools and methods used to manipulate and access properties of a library. *Most importantly, the Property Editor that is used to view and edit properties for an object in a scenario is identical to the Property Editor used to view and modify objects in a library (as discussed in Section 3.3).* Therefore, the user should refer to Section 3.3 for detailed information applicable to navigating the Property Editor in the Scenario Window.

This section includes a description of the components of the Scenario Window that are different from the components of the Library Window; specifically, the Menu Bar and the various views contained within a scenario that are accessed via the tabs in the Scenario Window. In addition, a brief description of the Property Editor and Value Editor in the Scenario Window is included in this section.

4.2.1 Components of the Scenario Window

Highlighting a scenario in the Scenarios List (described in Section 4.1.2) and clicking the "FaTE" button beneath the Scenarios list opens the Scenario Window for the selected scenario (see Figure 9). This window consists of a menu bar and a set of seven tabbed views, which allow the user to view and define the properties and other aspects of the scenario. The menu bar and the seven tabbed views that comprise the Scenario Window are described in the sections that follow.

Figure 9
Scenario Window



4.2.1.1 Scenario Window Menu Bar

The menu bar at the top of the Scenario Window contains six pull-down menus: *File*, *Edit*, *Add*, *Run*, *View*, and *Help*. Table 15 summarizes the items under each pull-down menu and their functions.

Table 15
Scenario Window Menu Bar Items and Functions

Pull-down Menu	Menu Item	Function
File	Close Scenario	Close this scenario.
	Import Volume Elements	Import volume elements into the current scenario. The user is prompted to select a Volume Element Import file from which to import the data using a file browser window that appears. (This and other import files are discussed in Module 3, Library and Scenario Data Files.)
	Export	Export data from this scenario. The user is prompted for an exporter to use and any information needed by the exporter.
	Read Compartments from File	Read a Compartment Import file (an external data file that contains information on compartments to be added to the scenario). The user is prompted to find the file using a file browser window that appears.
	Write Compartments	Create a Compartment Import file based on the compartments currently included in the scenario.
	Load Properties from File	Load a set of properties into the current scenario from a Property Import file. The user is prompted to find the file using a file browser window that appears.

Pull-down Menu	Menu Item	Function
	Load Runs from File	Load a set of characteristics (for multiple simulations to be run sequentially) via a single Run Import file. The user is prompted to find the file using a file browser window that appears.
	Save Project	Save the project that contains this scenario to hard drive or disk (thereby also saving the scenario to hard drive or disk).
Edit	Undo	Undo the last operation (when available).
	Redo	Redo the last operation (when available).
	Map Projection	Allows the user to select a map projection (used to set the frame of reference for the scenario spatial layout).
Add	Selected properties to Sequential Run "Run n"	Add the properties selected on the current view to the list of properties to be used in the current Sequential Run. "n" increases with each sequential run.
	Selected properties to Sensitivity Analysis "Scenario"	Add the properties selected on the current view to the list of properties to be used in a sensitivity analysis. (Refer to Module 15 for more information on sensitivity and Monte Carlo analyses within TRIM.FaTE.)
	Selected properties to Monte Carlo Analysis	Add the properties selected on the current view to the list of properties to be used in a Monte Carlo analysis.
	Selected properties to Output List	Add the properties selected on the current view to the output list.
Run	Verify Scenario	Verify that all data needed to run TRIM.FaTE are available. Notifies the user of any errors (e.g., if any properties that are needed are not present).
	Run Scenario	Run TRIM.FaTE according to the settings specified in the scenario properties.
	Initialize from previous Run	Allows the user to begin a simulation using the modeling results from a previously completed run. This command will bring up a dialog window through which the user can select a set of previous TRIM.FaTE results files that will be used to initialize the new simulation.
	Sequential Runs	Open the Sequential Run Window.
	Sensitivity Analysis	Open the Sensitivity Analysis Window (also accessible via the Analyses view).
	Monte Carlo Analysis	Open the Monte Carlo Analysis Window (also accessible via the Analyses view).
View	Project: "Scenario Name"	View the Project Window for the project to which the scenario belongs.
	Property Values for selected objects	Prompts the user for a date/time at which to evaluate the properties for the selected object(s). A window with values for all of the properties for each of the selected objects is then opened. If the selected objects are links, the user is prompted to choose sending and receiving chemicals, and the system evaluates all the algorithms on the links using the selected chemicals. (This function cannot be used until after a simulation has been run for the current scenario.)

Pull-down Menu	Menu Item	Function
	Run Results	View the numeric results from the last simulation on the current scenario. The user is prompted to select the chemical(s) and units for which to tabulate results. (This function cannot be used until after a simulation has been run for the current scenario.)
	Graphical Results	View the results of a completed simulation using the TRIM.FaTE Graphical Results Viewer. The user is prompted to select a TRIM.FaTE results file for which the results will be viewed.
	Food Chain	For the selected compartment(s), display the food chain comprised of all compartments linked by food-chain relationships. If the user has not selected a compartment, TRIM.FaTE will prompt the user to do so.
Help	TRIM.FaTE Computer Framework Guide	Show the online TRIM.FaTE Computer Framework Guide.

4.2.2.2 Scenario Window Views

There are seven tabs in the Scenario Window that allow the user to access views specific to various aspects of the scenario:

- Scenario;
- Sources;
- Chemicals;
- Compartments;
- Links;
- Algorithms; and
- Analyses.

Each of these views provides an interface that allows the user to obtain information and make changes to different parts of a TRIM.FaTE scenario. Before running a scenario, these views are used to define the settings of the scenario and populate the scenario with sources, chemicals, compartments, links, and algorithms. These views are described in the subsections below. Note that this module of the User's Guide is not meant to provide detailed information on successfully setting up a scenario. Other modules of this User's Guide provide more specific guidance on how to set up and populate a scenario with data.

Scenario View

The Scenario view within the Scenario Window contains general information on the scenario, including the scenario properties (refer to Module 9 for details on scenario properties). See Figure 9 above for an example of the Scenario view within the Scenario Window. The left side of the Scenario view is comprised of a pane labeled "Description," where the user can add text describing the scenario by clicking within the pane and typing the desired description (the entered text is stored the next time the project is saved). The right side of the Scenario view is comprised of a Property Editor that contains the scenario properties. Brief descriptions of all of the components of the Scenario view are presented in Table 16.

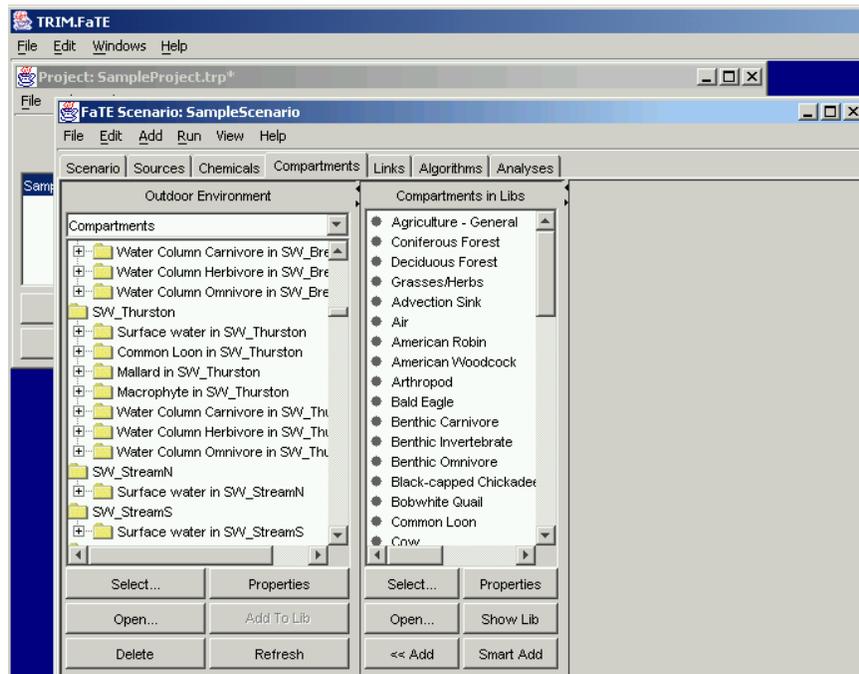
Table 16
Scenario View Components

Scenario View Component	Function
Project label [located at the top left corner of the view]	Displays the project to which the current scenario belongs.
Description pane [left side of view]	Displays the textual description of the scenario; the description can be entered and edited by the user directly in this pane.
Derived From label [located at the bottom left corner of the view]	If the current scenario was generated by duplicating an existing scenario, displays the name of the original scenario from which the copy was made.
Property Editor [right side of view]	Allows the user to view and edit the scenario properties; displays a table containing the scenario properties and buttons (located above the table) used to modify the scenario properties.

Sources, Chemicals, Compartments, Links, and Algorithms Views

The next five views within the Scenario window (i.e., the Sources, Chemicals, Compartments, Links, and Algorithms views) contain other information related to that scenario. Each of these views has a pair of panes on the left side (see, for example, the Compartments View presented in Figure 10).

Figure 10
Compartments View (Scenario Window)



For the Sources, Chemicals, Compartments and Algorithms views, the pane farthest to left contains objects that are saved to the current scenario (note that in these views the scenario is referred to as the Outdoor Environment). The adjacent pane (to the right) shows objects that are in the library (or libraries) associated with that scenario. Using the Sources, Chemicals, and Compartments views, the user can select objects saved in the libraries (using the right pane) and add them to the scenario, customizing the added objects as needed. Objects that have been added to the scenario will appear in the left pane. The Links view also has two panes on the left; however, *both* of these panes contain links and other components of the Outdoor Environment that exist in the scenario only (note that links are part of the scenario set-up and do not exist in the library). The dual panes on the Links view allow the user to create links between compartments for a scenario.

There are four buttons that appear on all five of these views (i.e., all views other than the Scenario and Analyses views): “Select,” “Open,” “Properties,” and “Delete.” In addition, there are several other buttons that appear on one or more of these five views, but not all five views. Each of the buttons that appear on these five views are listed in Table 17 with a description of their function.

Table 17
Buttons on the Sources, Chemicals, Compartments, Links, and Algorithms Views

View	Button	Function
ALL FIVE VIEWS	Select	Select one or more objects in the associated pane using the TRIM.FaTE Select tool.
	Open	Open an Object Window for object(s) selected in the corresponding list.
	Properties	Show the properties for object(s) selected in the corresponding list or tree in the associated pane.
	Delete	Delete the object(s) selected in the corresponding list or tree on the right side of the pane.
Sources and Chemicals	Add To Lib	Add the object(s) selected in the corresponding list or tree to a library (e.g., after modifying their properties).
	Show Lib	Show the file name(s) of the libraries that contain the name(s) of the selected objects.
	<< Add	Add the sources or chemicals selected in the corresponding list to the current scenario.

View	Button	Function
Compartments ^a	Refresh	Redraw the tree in the outdoor environment panel based on the objects currently present in the outdoor environment.
	<< Add	Add the compartments selected in the corresponding list to the volume elements selected in the Outdoor Environment pane.
	Show Lib	Show the file name(s) of the libraries that contain the name(s) of the selected objects.
	Smart Add	Automatically add compartments (usually biotic) to the selected volume elements by determining whether the category property of the volume element's primary abiotic compartment is the same as or more specific than the acceptable abiotic property for the selected compartments. Any compartments that meet this criteria are automatically added to the volume elements by TRIM.FaTE.
Links ^a	Refresh	Redraw the tree in either of the outdoor environment panels based on the objects currently present in the outdoor environment.
	Smart Link	Create links for the volume elements selected in either list between adjacent or collocated compartments if algorithms that connect their compartment types exist in the project's libraries.
	<< Link >>	Create links between all volume elements selected in the right-hand list and all volume elements selected in the left-hand list. Appropriate algorithms are included with the new links.
Algorithms	Show Algs	Show all the algorithms that exist for all the selected links in the outdoor environment.
	Refresh	Redraw the tree in the outdoor environment panel based on the objects currently present in the outdoor environment.
	Add	View a list of algorithms that can be added to the links selected in the outdoor environment panel and add the selected algorithms to the selected links.
	Add to Lib	Add the object(s) selected in the corresponding list or tree to a library (e.g., after modifying their properties).

^aThe current version of TRIM.FaTE includes a shaded "Add to Lib" button on the Compartments and Links views. This button is not functional and will be removed from TRIM.FaTE in a future version.

For each of these five views (i.e., all views other than the Scenario and Analyses views), the user can select an object and click on the "Properties" button below the window to bring up a Property Editor window on the right-hand side of the Scenario Window. Note that there are two "Properties" buttons (one for each of the windows on the left); the Property Editor will show properties for the object(s) selected in the list that is above the most recently clicked "Properties" button (see the section below on the Scenario Property Editor).

Analyses View

The Analyses view is used to access the results of sensitivity and uncertainty analyses for a TRIM.FaTE scenario. An example of an Analyses view is displayed in Figure 11. The buttons that appear on the Analyses view are described in Table 18. Refer to Module 15, TRIM.FaTE Sensitivity and Monte Carlo Analyses, for a complete description of the components of the

Analyses view and information on how to access the sensitivity and Monte Carlo analyses features in TRIM.FaTE.

Figure 11
Analyses View (Scenario Window)

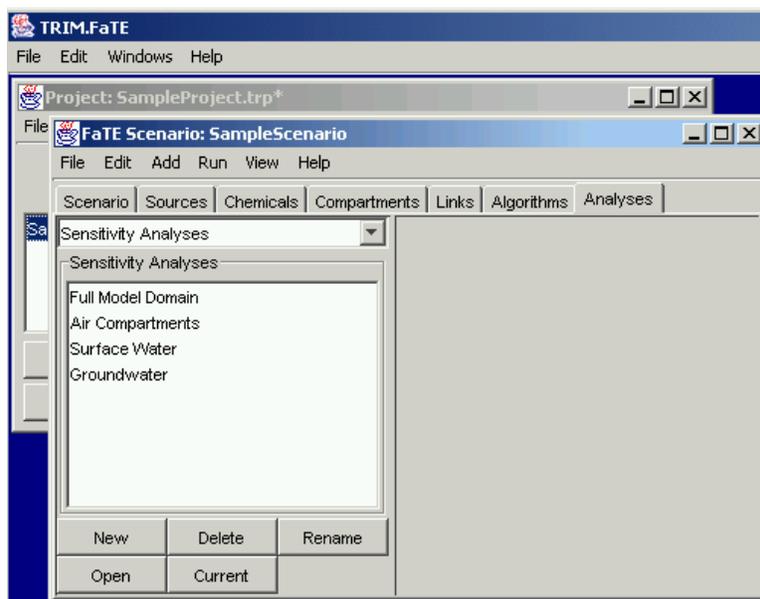


Table 18
Buttons on the Analyses View

Button	Function
New	Define a new TRIM.FaTE analysis (e.g., sensitivity analysis).
Open	Open the highlighted analysis.
Delete	Delete the analysis highlighted.
Current	Set the highlighted analysis as the current analysis.
Rename	Rename the highlighted analysis.

4.2.3 Property Editor and Value Editor in the Scenario Window

The Property and Value Editors in a scenario are analogous to the Property and Value Editors in the library (see Section 3.3). These editors are opened by highlighting an object (e.g., a specific chemical, compartment, or link) on one of the views within the Scenario Window and clicking the “Properties” button. The Property Editor (and Value Editor, if a formula or time-varying property is highlighted) will appear on the right side of the view. These editors are used to enter and change properties of scenario objects in the same manner as they are used to edit library objects. The types of data fields displayed in the Property Editor in these views are the same as the types of data fields displayed in the Library window, and the same tools and

functions are used with the Property Editors in both the scenario views and library window (e.g., viewing property values, editing property values). The user should refer to Section 3.3 for specific instructions on using the Property Editor and related functions.

However, the user should be aware of two differences between the properties of objects in the library and the properties of objects in the scenario.

- Objects in the library can be added to a scenario; once an object is added to a scenario, its properties can be changed for that scenario (e.g., to assign a compartment a spatially-specific property). Changing the properties of an object in a scenario does not change the properties of the original object in the library.
- Links between compartments do not exist in the library. They are created as a part of a scenario (not a library).

5. REFERENCES

U.S. Environmental Protection Agency. 2002. TRIM.FaTE Technical Support Document. Volume I: Description of Module. EPA-453/R-02-011a. Office of Air Quality Planning and Standards.

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