Steps Required to Set Up Example Application
for "TRIM.Risk" Scenario of "Ecological Risk Assessment with TRIM.FaTE" Project
(revised on 12/9/2005)

This file provides step-by-step instructions for creating an example application of the "TRIM.Risk" scenario using the provided TRIM.FaTE output database. Exhibit 1 provides a list of input files and databases that are required to run the application. This table is intended to be used as a reference for the example application.

NOTE: This application is for training purposes only and is not intended to apply to any real world situation.

Exhibit 1. List of Input Files and Databases

File		Source of File	
Name	**Description**	**Downloaded**	**Created by User**
TRIM_EcoData_HAPs_092805	Ecological toxicity database	Downloaded from TRIM website	
Fate1yr_TrainingDB	TRIM.FaTE output database	Downloaded with this example application	

(1) Open TRIM.Risk by clicking on the Start button and selecting Programs > TRIM > TRIM, or by typing "runtrim.bat" from a run or DOS command window.

(2) Double-click on the "Ecological risk assessment with TRIM.FaTE (Generic)" project in the Project Selection window to open the scenario list.

(3) In the resulting window, click on the "TRIM.Risk" scenario and click the "Duplicate" button at the bottom of the window. When prompted to name the duplicate, type "Example Application - TRIM.Risk," and click "OK." A scenario with this name will the appear in the window.

(4) Open the "Example Application - TRIM.Risk" scenario by double-clicking on the name.

(5) The "Example Application - TRIM.Risk" scenario window will open. The left side of the window (called "Input Panels") lists parameters needed for the simulation. The right side shows the components of this scenario in the "Graph View." Some of the fields on the "Settings" tab should be filled in based on information you entered during the TRIM.Risk installation. Check that they are accurate for your computer, and fill in the blank fields based on instructions in Exhibit 2.

Exhibit 2. Parameters on Input Panels

Parameter	Instructions for Setting Parameter
Run Name	This property is a descriptive name for the run you are performing. Type in a name: e.g., **RiskEcoExample**.
TRIM Directory	Check that this parameter is filled in with the directory where the TRIM installation is on your computer. If not, navigate to the correct directory using the "Browse" button.
MySQL User Name	Check that the MySQL user name is set correctly. This should be the user name you entered during the TRIM installation.
MySQL Password	Check that the MySQL password is set correctly. This should be the password you entered during the TRIM installation.
R Bin Directory	Check that this parameter is filled in with the location of the R bin directory on your computer. If not, navigate to the correct directory using the "Browse" button.
Ecological Effects Database	This field needs to specify the ecological toxicity database that you downloaded from the EPA website and saved in your MySQL directory. Type in the name of the database: **TRIM_EcoData_HAPs_092805**.
Fate Output Database	This field needs to specify the TRIM.FaTE output database that you downloaded from the EPA website and saved in your MySQL directory. Type in the name of the database: **Fate1yr_TrainingDB**.
Eco Risk DB Name	This is the name of the output database that TRIM.Risk will create. Type in a name for the database: e.g., **EcoOut_TrainingDB**.

(6) After filling in the parameter values in the "Settings" tab of the "Input Panels," the run is ready. Click on the play button ( ) at the top of the scenario window and the TRIM.Risk$_{Eco}$ GUI will open.

(7) On Tab 1, Databases, the databases used or created for the simulation must be specified. These databases were selected on the "Input Panels" in (5); confirm that the names are correct.

- Step 1a: The name in this blank should match the name listed in the "Eco Risk DB Name" field on the "Input Panels" (e.g., EcoOut_TrainingDB).
- Step 1b: If it is not already selected, select the TRIM.FaTE output database named "Fate1yr_TrainingDB" from the drop-down menu.
- Step 1c: If it is not already selected, select the ecological toxicity database named "TRIM_EcoData_HAPs_092805" from the drop-down menu.

After making these selections, click "Done" and if there are no errors, a window will pop up that says "A MySQL database was created." Click "OK," the pop-up will close, and the GUI will open the next tab.

(8) Tab 2, Specify Analysis, allows you to make selections about what type of analysis you are going to perform.

- Step 2a: "User-Specified Analysis" is the only option at this time, so you don't have to do anything on this step.

- Step 2b: To calculate ecological risks based on oral intake or body burden exposure estimates, select either the first or second options. The "Use Receptor Assistant" option will give you a "head start" by recognizing and pairing up all of the exactly matching receptor names from the ecological toxicity database with compartment names from TRIM.FaTE; it then allows you to manually match up compartment names with ecological receptors having different names. The "Specify receptors manually" option allows you to view all possible combinations of compartments and receptors in one table and manually select all the desired combinations. For the example application, pick one of these options.

- Step 2c: For the example application, select "Use Media Assistant" in Step 2c. This option allows you to select receptors for an ecological risk assessment that will use exposure in terms of media concentrations.

Click the "Done" button after you have made your selections.

(9) Depending upon your choice in Step 2b, either Tab 3 or Tab 4 will open. If you selected "Use Receptor Assistant," Tab 3 will open – complete the steps in (9a). If you selected "Specify receptors manually," Tab 4 will open – complete the steps in (9b).

(9a) On Tab 3 the box next to "3a. Exact Matches" will be automatically checked. Click on the "Edit" button to see the exact matches. A list will be generated with all exact matches of TRIM.FaTE compartments from the Fate1yr_TrainingDB database to receptors in the ecological toxicity database with the same name for the type of exposure measure (e.g., oral intake) and the chemical being assessed. You can un-select any of these matches, or leave all of them selected, and click on the "Close" button.

Check the box next to "3b. Select Other Matches" and click the "Edit" button to view all matches between the TRIM.FaTE compartments and the receptors in the toxicity database that are based on the category of the compartment (e.g., bird, mammal). You can select any of these matches that you would like to include in the analysis, and click the "Close" button.

Click the "Review" button to view the matches that you made, close the window, and then click "Done." A pop-up window will appear with the message "Receptor Matches saved to <DOS root directory>\ReceptorMatches.txt." Click "OK" to continue.

(9b) On Tab 4 there is a list of all possible matches between TRIM.FaTE compartments and receptors in the ecological toxicity database based on exposure measure, chemical, and either receptor name or taxa group name. Click on a few boxes in the "Select" column to pick matches to include in the example analysis. Then click the "Done" button.

(10) Tab 5, Media Assistant, opens because you selected "Use Media Assistant" in Step 2c of Tab 2. The list of receptors shown on this tab is generated from a comparison of the list of abiotic media in the Fate1yr_TrainingDB database with the abiotic media concentration toxicity values for the chemicals being assessed that are available in the ecological toxicity database. You can click on the "Select All" button to select all media-receptor combinations, or just select a few of the matches. After making selections, click the "Done" button.

(11) On Tab 6, Media Locations, you can select the locations at which to calculate the HQs using abiotic media concentrations as the exposure estimates. The table on this tab lists the abiotic media selected in Tab 5 and all of the locations (in terms of TRIM.FaTE volume element names) with the corresponding media types from the TRIM.FaTE database. For the example application, click the boxes in the "Select" column next to at least one location for each type of media, or use the "Select All" button at the top of the list. Then click the "Done" button.

(12) On Tab 7, you can specify temporal characteristics of the exposure values to be used in the risk characterization. The "Steady-state exposure values" option will not be available because the run used to create the TRIM.FaTE output database was not steady-state. Instantaneous (values output at specific timesteps) and averaged exposure values are both included in the database. The Fate1yr_TrainingDB TRIM.FaTE database contains instantaneous (every 6 hours) and monthly averaged data.

- Step 7a: Pick either "Averaged exposure values" or "Instantaneous exposure values." Note that if you pick the instantaneous exposure values, it takes TRIM.Risk$_{Eco}$ a few minutes to compile the next choices (because of the size of the database).

- Step 7b: After making a selection in Step 7a, you can make temporal specifications regarding the exposure data to be compared with each type of exposure estimate. The first option in this step ("For all types of exposure estimates") should be selected if the same temporal specification is to be used for all exposure types (e.g., oral intake, sediment concentration, etc). The second option ("For each type of exposure estimate") should be selected to make a different temporal specification for each type of exposure estimate.
  To make a temporal specification (for either a specific type or for all types of exposure estimates), you should first select a time point type from the pull-down list in the "Time Point Type" column. The time point type options include All Times, Maximum Time, Last Time, Time Point, and Time Range. Depending on the time point type, you may need to specify additional information in the "Begin Time" and "End Time" columns. Note that if you select the Time Point option, the "Begin Time" and "End Time" must both be set to the same time. In the TRIM.FaTE output database used in this example, only one averaging period is included and thus the "Averaging Period" drop down menu includes only this single averaging period. Thus no user selection is required for this column.

After selecting time points for each type of exposure estimate, click the "Done" button. If the second option was selected for Step 7b and different time point types are selected for each exposure estimate type, a table will appear listing the type of exposure estimate, the selected time point or range, the data interval (if applicable), and the averaging time (if applicable). Click "Close" to close this table. If some of the temporal information is missing or contains errors (e.g., begin time greater than end time), an error message will appear describing the problem.

(13) On Tab 8, Toxicity Values, you can select the toxicity values to use for the analysis. There is a check box in the middle of the tab allowing you the option to "Select All" toxicity values (and then further refine your choices). You can de-select it, or leave it selected, and click on the "Edit/Review" button. A window will open in which you can make toxicity value selections. The options provided here are based on the choices you have made going through the other tabs. Scroll through the list of toxicity values at the bottom of the window. Each value has information associated with it describing the match from the TRIM.FaTE database, the chemical, exposure measure, toxicity metric, effect, the value, and its units. You can use the menus at the top of the window to display toxicity values with certain properties only. Select some (or all) of the toxicity values by checking the boxes to the right of the values. After making your selections, click on the "Close" button.

Click the "Save" button to save the selections to the output database. A box opens saying "You have successfully saved your selections to the database." Click "OK." Then click on the "Exit" button to close the GUI and begin the run. A "Confirm Exit" dialogue box appears, click "Yes" to exit, and the TRIM.Risk$_{Eco}$ simulation will begin.

(14) The green circle next in the Risk-Eco module instance box will appear filled in (●) while the model is running. The time TRIM.Risk takes to run depends on the selections you made in the GUI, but normally the run-time is not longer than 20 minutes for this example application.

(15) When TRIM.Risk$_{Eco}$ is finished, the "DAVE Database Selector" window will open. In this window, select the name of the output database (EcoOut_TrainingDB) and click either "Analyze" or "Export" to view the results. The analyze option allows you to create tables and graphs based on the results of the TRIM.Risk simulation. The export option will export a single common-delimited file with all of the HQ values that were calculated. This file can be viewed in a text or spreadsheet program.