

3.4 Configure Ecological Exposure

Figure 18 shows the ECOLOGICAL EXPOSURE tab. Here, you can select receptors to run and edit diet fractions. The receptors are grouped into two categories: aquatic and terrestrial. Aquatic receptors are those that live in waterbodies: amphibians, aquatic invertebrates, aquatic plant, fish, and sediment biota; the “aquatic community” receptor includes all of those more specific aquatic receptors and is typically used only when more specific receptor data are not available. Terrestrial receptors are those living on land. And include a variety of birds and mammals, as well as soil invertebrates and terrestrial plants.

The screenshot shows the 'Configure Model' window with the 'Ecological Exposure' tab selected. The window has a title bar with standard window controls and a 'Close Form' button. Below the title bar are tabs for 'Scenarios', 'Chemicals', 'Human Exposure', 'Ecological Exposure', and 'Inputs'. The 'Ecological Exposure' tab is active, showing a table of receptors. On the left side of the table are buttons for 'Select All' and 'Deselect All'. The table has four columns: 'Receptor Category', 'Select Receptor(s)', 'Pathway Type (Benchmark Type)', and a button to 'View/Edit Diet Fractions'. The receptors are listed in two groups: Aquatic and Terrestrial. Each receptor has a checkbox in the 'Select Receptor(s)' column. The 'Pathway Type (Benchmark Type)' column specifies the exposure pathway and whether it is concentration-based or dose-based. The 'View/Edit Diet Fractions' button is present for each receptor. A 'Reset All Diet Fractions' button is located at the top right of the table area.

Receptor Category	Select Receptor(s)	Pathway Type (Benchmark Type)	View/Edit Diet Fractions
Aquatic	<input type="checkbox"/> Amphibians	Direct Contact, water (conc-based)	View/Edit Diet Fractions
Aquatic	<input type="checkbox"/> Aquatic Community	Direct Contact, water (conc-based)	View/Edit Diet Fractions
Aquatic	<input type="checkbox"/> Aquatic Invertebrates	Direct Contact, water (conc-based)	View/Edit Diet Fractions
Aquatic	<input type="checkbox"/> Aquatic Plants	Direct Contact, water (conc-based)	View/Edit Diet Fractions
Aquatic	<input type="checkbox"/> Fish	Direct Contact, water (conc-based)	View/Edit Diet Fractions
Aquatic	<input type="checkbox"/> Sediment Biota	Direct Contact (sediment)	View/Edit Diet Fractions
Terrestrial	<input type="checkbox"/> American Kestrel	Ingestion, carnivore (dose-based)	View/Edit Diet Fractions
Terrestrial	<input type="checkbox"/> American Robin	Ingestion, omnivore (dose-based)	View/Edit Diet Fractions
Terrestrial	<input type="checkbox"/> American Woodcock	Ingestion, omnivore (dose-based)	View/Edit Diet Fractions
Terrestrial	<input type="checkbox"/> Belted Kingfisher	Ingestion, carnivore (dose-based)	View/Edit Diet Fractions
Terrestrial	<input type="checkbox"/> Birds	Ingestion (conc-based)	View/Edit Diet Fractions
Terrestrial	<input type="checkbox"/> Black Bear	Ingestion, omnivore (dose-based)	View/Edit Diet Fractions
Terrestrial	<input type="checkbox"/> Canada Goose	Ingestion, herbivore (dose-based)	View/Edit Diet Fractions
Terrestrial	<input type="checkbox"/> Coopers Hawk	Ingestion, carnivore (dose-based)	View/Edit Diet Fractions
Terrestrial	<input type="checkbox"/> Coyote	Ingestion, omnivore (dose-based)	View/Edit Diet Fractions

Figure 18. ECOLOGICAL EXPOSURE tab: Select one or more.

Click on the checkbox to the left of a receptor to select or deselect it. To select all receptors, click the SELECT ALL button on the left side of the tab. To deselect all receptors, click the DESELECT ALL button. Use the scroll bar on the right to scroll through the entire list of receptors.

Unlike human receptors, which have multiple exposure pathways, the ecological receptors each have only one associated pathway. Following the receptor name is the pathway type relevant to that receptor, and whether the toxicity value is concentration or dose based. Receptors that are

specific species of birds and mammals have ingestion toxicity values, while all others (including the general “birds” and mammals” receptors) have direct contact toxicity values.²

For receptors with a dose-based toxicity value, the overall average diet is represented by a set of diet fractions for 20 potential dietary items. The default diet fractions are intended to be broadly representative and do not reflect any particular sex, life stage, or seasonality (consistent with the use of annual average media and prey concentrations). You can modify the default diet fractions by clicking on the VIEW/EDIT DIET FRACTIONS button to the right of the pathway, as shown in **Figure 19**. (Diet fractions are not used for concentration-based toxicity values, so if you click on the VIEW/EDIT DIET FRACTIONS button for one of those receptors, you will get a message saying diet fractions are not used instead of the form in Figure 19.) The VIEW/EDIT RECEPTOR DIET form shows only the food items that might be eaten by the selected receptor; additional food items cannot be added. The dietary fraction for any food item may be set to zero, but the dietary fractions for all food items for a receptor must sum to 1, or you will get an error message when you try to close the form. Changes are saved immediately, so click on the × in the upper right-hand corner of the window to close the form. The user-modified flag cannot be edited; the Tool will automatically check it when you change a dietary fraction.

Receptor	Food	Dietary Fraction	User Modified
Short-tailed shrew	Diet fraction-exposed vegetables	0.139	<input type="checkbox"/>
Short-tailed shrew	Diet fraction-worms	0.417	<input type="checkbox"/>
Short-tailed shrew	Diet fraction-exposed fruits	0.056	<input type="checkbox"/>
Short-tailed shrew	Diet fraction-other soil invertebrates	0.333	<input type="checkbox"/>
Short-tailed shrew	Diet fraction-small mammals	0.056	<input type="checkbox"/>

Figure 19. View/Edit Receptor Diet form.

² The generic receptors “birds” and “mammals” are based on Ecological Soil Screening Levels (Eco-SSLs; see <https://www.epa.gov/chemical-research/ecological-soil-screening-level>), which are based on soil concentrations.