

Table 749-4

Wildlife Exposure Model for Site-Specific Evaluations^a

Plant	
K _{Plant}	Plant uptake coefficient (dry weight basis)
	Units: mg/kg plant/mg/kg soil
	Value: chemical specific (See Table 749-5)
Soil Biota - Surrogate receptor: Earthworm	
BAF _{Worm}	Earthworm bioaccumulation factor (dry weight basis)
	Units: mg/kg worm/mg/kg soil
	Value: chemical-specific (See Table 749-5)
Mammalian Predator - Surrogate receptor: Shrew (<i>Sorex</i>)	
P _{SB(Shrew)}	Proportion of contaminated food (earthworms) in shrew diet
	Units: unitless
	Value: 0.50
FIR _{Shrew,DW}	Food ingestion rate (dry weight basis)
	Units: kg dry food/kg body weight-day
	Value: 0.45
SIR _{Shrew,DW}	Soil ingestion rate (dry weight basis)
	Units: kg dry soil/kg body weight-day
	Value: 0.0045
RGAF _{Soil,shrew}	Gut adsorption factor for a hazardous substance in soil expressed relative to the gut adsorption factor for the hazardous substance in food.
	Units: unitless
	Value: chemical specific (See Table 749-5)
T _{Shrew}	Toxicity reference value for shrew
	Units: mg/kg-day
	Value: chemical specific (See Table 749-5)
Home Range	0.1 Acres
Avian Predator - Surrogate receptor: American Robin (<i>Turdus migratorius</i>)	
P _{SB(Robin)}	Proportion of contaminated food (soil biota) in Robin diet
	Units: unitless
	Value: 0.52
FIR _{Robin,DW}	Food ingestion rate (dry weight basis)
	Units: kg dry food/kg body weight-day
	Value: 0.207

SIR _{Robin,DW}	Soil ingestion rate (dry weight basis)
	Units: kg dry soil/kg body weight-day
	Value: 0.0215
RGAF _{Soil,Robin}	Gut adsorption factor for a hazardous substance in soil expressed relative to the gut adsorption factor for the hazardous substance in food.
	Units: unitless
	Value: chemical specific (See Table 749-5)
T _{Robin}	Toxicity reference value for Robin
	Units: mg/kg-day
	Value: chemical specific (See Table 749-5)
Home Range	0.6 Acres
Mammalian herbivore - Surrogate receptor: Vole (<i>Microtus</i>)	
P _{Plant,Vole}	Proportion of contaminated food (plants) in vole diet
	Units: unitless
	Value: 1.0
FIR _{Vole,DW}	Food ingestion rate (dry weight basis)
	Units: kg dry food/kg body weight-day
	Value: 0.315
SIR _{Vole,DW}	Soil ingestion rate (dry weight basis)
	Units: kg dry soil/kg body weight-day
	Value: 0.0079
RGAF _{Soil,Vole}	Gut adsorption factor for a hazardous substance in soil expressed relative to the gut adsorption factor for the hazardous substance in food.
	Units: unitless
	Value: chemical specific (See Table 749-5)
Home Range	0.08 Acres
Soil concentrations for wildlife protection^b	
(1) Mammalian predator:	
$SC_{MP} = (T_{Shrew}) / [(FIR_{Shrew,DW} \times P_{SB(Shrew)} \times BAF_{Worm}) + (SIR_{Shrew,DW} \times RGAF_{Soil,Shrew})]$	
(2) Avian predator:	
$SC_{AP} = (T_{Robin}) / [(FIR_{Robin,DW} \times P_{SB(Robin)} \times BAF_{Worm}) + (SIR_{Robin,DW} \times RGAF_{Soil,Robin})]$	
(3) Mammalian herbivore:	
$SC_{MH} = (T_{Vole}) / [(FIR_{Vole,DW} \times P_{Plant,Vole} \times K_{Plant}) + (SIR_{Vole,DW} \times RGAF_{Soil,Vole})]$	

Table 749-4 Notes

^a Substitutions for default receptors may be made as provided for in WAC 173-340-7493(7). If substitute species is used, the values for food and soil ingestion rates, and proportion of contaminated

food in the diet, may be modified to reasonable maximum exposure estimates for the substitute species based on a literature search conducted in accordance with WAC 173-340-7493(4). Additional species may be added on a site-specific basis as provided in WAC 173-340-7493(2)(a). The department shall consider proposals for modifications to default values provided in this table based on new scientific information in accordance with WAC 173-340-702(14).

^b Use the lowest of the three concentrations calculated as the wildlife value.

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