

Table U-11.
Exposure Parameters for Terrestrial Wildlife

Parameter	Ornate Shrew		Source	California Vole		Source	Striped Skunk		Source	American Badger		Source
	Assumed	Actual		Assumed	Actual		Assumed	Actual		Assumed	Actual	
Composition of Diet (percent) ^a												
Soil	13	NA	Based on short-tailed shrew; Sample and Suter, 1994	2.4	NA	Based on meadow vole; Beyer et al., 1994	9	NA	Based on raccoon; Beyer et al., 1994	9	NA	Beyer et al., 1994
Invertebrates	100	94.6	Calculated based on main food item in short-tailed shrew diet; USEPA, 1993.	0	0	Cal/EPA, 2007	0	30	Cal/EPA, 2007	0	0	--
Mammals	0	0	--	0	0	Cal/EPA, 2007	100	25	Cal/EPA, 2007	100	100	Sovada et al., 1999
Other	0	5.4	Based on composition of plant in diet of short-tailed shrew; USEPA, 1993	100	99.2	Based on composition of plant in diet; Cal/EPA, 2007	0	45	Cal/EPA, 2007	0	0	--
Body Weight (kg)	Juveniles 0.00210	Adults 0.00568	Mean body weight; Cal/EPA, 2007	Juveniles <0.025	Adults 0.0253	Only value for juvenile body weight; For adults, mean body weight; Cal/EPA, 2007	Juveniles 1.6	Adults 1.7	Median (juvenile) and 5th percentile (adult); USEPA, 1993	Juveniles 4	Adults 6.4	Silva and Downing, 1995; Wright,
Food Ingestion Rate - Total	Juveniles	Adults		Juveniles	Adults		Juveniles	Adults		Juveniles	Adults	
% Moisture in Food	71	71	Based on average terrestrial invertebrate diet; USEPA, 1993	38	38	Based on average terrestrial plant diet; USEPA, 1993	68	68	Based on average terrestrial invertebrate diet; USEPA, 1993	68	68	Based on average mammalian diet; USEPA, 1993
kg/day (dw)	0.00059	0.00110	Allometric equation; Nagy, 2001 (eq. 31)	NA	0.00404	Allometric equation; Nagy, 2001 (eq. 11)	0.060	0.063	Allometric equation; Nagy, 2001 (eq. 9)	0.865	1.298	Allometric equation; Nagy, 2001 (eq. 9)
kg/kg body weight-day (dw)	0.282	0.194	Calculated	NA	0.160	Calculated	0.0374	0.0371	Calculated	0.216	0.203	For juveniles, calculated from kg/day (dw)
kg/kg body weight-day (ww)	0.85365	0.58625	Allometric equation; Nagy, 2001 (eq. 32)	NA	0.37903	Allometric equation; Nagy, 2001 (eq. 12)	0.12297	0.12192	Allometric equation; Nagy, 2001 (eq. 10)	0.758	0.709	Allometric equation; Nagy, 2001 (eq. 10)
Food Ingestion Rate (kg/kg body weight-day) ^a	Juveniles	Adults		Juveniles	Adults		Juveniles	Adults		Juveniles	Adults	
Soil (dw)	0.0366	0.0252	Calculated	--	0.00384	Calculated	0.00337	0.00334	Calculated	0.0195	0.0182	Calculated
Invertebrates (dw)	0.282	0.194	Calculated	--	--		--	--	--	--	--	--
Mammals (dw)	--	--	--	--	--		0.037	0.037	Calculated	0.216	0.203	Calculated
Plant diet: (dw) ^b	--	--	--	--	0.159	Calculated	--	--	--	--	--	--
Drinking Water Ingestion	Juveniles	Adults		Juveniles	Adults		Juveniles	Adults		Juveniles	Adults	
L/day	0.000385	0.000942	Allometric equation; USEPA, 1993	NA	0.00361	Allometric equation; USEPA, 1993	0.151	0.160	Allometric equation; USEPA, 1993	0.344738	0.526256	Allometric equation; USEPA, 1993
L/kg body weight-day	0.183	0.166	Calculated	NA	0.143	Calculated	0.0945	0.0939	Calculated	0.086	0.082	Calculated
Home Range (acres) ^c												
Lower bound	NA	0.0740	Based on short-tailed shrew; USEPA, 1993	NA	0.250	Zeiner et al., 1990	NA	598	Cal/EPA, 2007	NA	395.2	Messick 1981
								13.0	Based on raccoon; USEPA, 1993			
Upper bound	NA	4.40	Based on short-tailed shrew; USEPA, 1993	NA	2.50	Zeiner et al., 1990	NA	761	Cal/EPA, 2007	NA	592.8	Messick 1981
								12,222	Based on raccoon; USEPA, 1993			

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Parameter	Western Meadowlark		Source	American Kestrel		Source
	Assumed	Actual		Assumed	Actual	
Composition of Diet (percent) ^a						
Soil	10	NA	Based on American woodcock; Beyer et al., 1994	1	NA	Based on American bald eagle; Pascoe et al., 1996
Invertebrates	100	60	Cal/EPA, 2007	0	40	Cal/EPA, 2007
Mammals	0	0	Cal/EPA, 2007	100	50	Cal/EPA, 2007
Other	0	30	Cal/EPA, 2007	0	10	Cal/EPA, 2007
Body Weight (kg)						
	Juveniles	Adults		Juveniles	Adults	
	0.00780	0.102	Only value (juvenile); median (adults); Cal/EPA, 2007	0.0751	0.0837	5th percentile; Cal/EPA, 1999
Food Ingestion Rate - Total						
	Juveniles	Adults		Juveniles	Adults	
% Moisture in Food	71	71	Based on average terrestrial invertebrate diet; USEPA, 1993	68	68	Based on average mammalian diet; USEPA, 1993
kg/day (dw)	0.00256	0.0148	Allometric equation; Nagy, 2001 (eq. 37)	0.015	0.016	Allometric equation; Nagy, 2001 (eq. 63)
kg/kg body weight-day (dw)	0.329	0.146	Calculated	0.1981	0.1910	Calculated
kg/kg body weight-day (ww)	1.08753	0.39673	Allometric equation; Nagy, 2001 (eq. 38)	0.71726	0.69167	Allometric equation; Nagy, 2001 (eq. 64)
Food Ingestion Rate (kg/kg body weight-day) ^a						
	Juveniles	Adults		Juveniles	Adults	
Soil (dw)	0.0329	0.0146	Calculated	0.001981	0.001910	Calculated
Invertebrates (dw)	0.329	0.146	Calculated	--	--	--
Mammals (dw)	--	--	--	0.198	0.191	Calculated
Plant diet: (dw) ^b	0.329	0.146	Calculated	--	--	--
Drinking Water Ingestion						
	Juveniles	Adults		Juveniles	Adults	
L/day	0.00228	0.0127	Allometric equation; USEPA, 1993	0.0104	0.0112	Allometric equation; USEPA, 1993
L/kg body weight-day	0.293	0.126	Calculated	0.139	0.134	Calculated
Home Range (acres) ^c						
Lower bound	NA	10.0	Cal/EPA, 2007	NA	269	Cal/EPA, 2007
		0.740	Based on American woodcock; USEPA, 1993		24.0	USEPA, 1993
Upper bound	NA	32.0	Cal/EPA, 2007	NA	1,117	Zeiner et al., 1990
		423	Based on American woodcock; USEPA, 1993		1,236	USEPA, 1993

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kg	Kilograms.
L	Liters.
dw	Dry weight.
ww	Wet weight.
NA	Not available

^a Assumed that diet consists of 100% of the most contaminated food item for ingestion calculations.

^b Based on data for raccoon.

^c Based on data for American woodcock.

^d Bald eagle used as surrogate species based on feeding habit.

^e The western meadowlark, which ingest both plants and invertebrates, will be evaluated under two scenarios in Tier 1. Scenario 1 assumes a diet of invertebrates only and Scenario 2 assumes a diet of plants only, to allow evaluation of both herbivorous and insectivorous receptors.

^f Includes home range, foraging range, and territory size.

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