

APPENDIX C

ERA MODEL INPUTS AND OUTPUTS



Jacques Whitford's Ecological Risk Assessment Model (Version 1.21)

Intake Parameters for the Snowy Owl

Receptor Name	Snowy Owl	
Name of Area	CAM-F	
Receptor Type	1	(1-Bird, 2-Mammal)
Small Mammal Type	1	(1-General, 2- Herbivore, 3-Insectivore) Default value should be 1
Benthic invertebrates, fish and aquatic plants based on Sediment or Surface Water Uptake	1	(1-Sediment, 2-Surface Water) Default value should be 1
General Parameters		
Body weight	2.05	kg
Food intake rate	0.290218284	kg wet-wt/day
Water intake rate	0.095439268	L/day
Ingestion of Soil		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction diet that is dry solid	0.32	
Fraction of food intake rate	0.028	
Ingestion rate	0.002600356	kg dry-wt/day
Fraction from site	1	
Intake factor (IFing-si)	0.001268466	kg/kg-day
Ingestion of Terrestrial Plants		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-tp)	0	kg/kg-day
Ingestion of Terrestrial Invertebrates		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-ti)	0	kg/kg-day
Ingestion of Terrestrial Mammals/Birds		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction of food intake rate	1	
Ingestion rate	0.290218284	kg wet-wt/day
Fraction from site	1	
Intake factor (IFing-tm)	0.141569895	kg/kg-day
Ingestion of Surface Water		
Applicable pathway?	1	(0 = no, 1 = yes)
Ingestion rate	0.095439268	L/day
Fraction from site	1	
Intake factor (IFing-sw)	0.04655574	L/kg-day
Ingestion of Sediment		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction diet that is dry solid	0	
Fraction of food intake rate	0	
Ingestion rate	0	kg dry-wt/day
Fraction from site	0	
Intake factor (IFing-sed)	0	kg/kg-day
Ingestion of Aquatic Plants		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-ap)	0	kg/kg-day
Ingestion of Benthic Invertebrates		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-ai)	0	kg/kg-day
Ingestion of Fish		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-fsh)	0	kg/kg-day

Jacques Whitford's Ecological Risk Assessment Model (Version 1.21)

Intake Parameters for the Ptarmigan

Receptor Name	Ptarmigan	
Name of Area	CAM-F	
Receptor Type	1	(1-Bird, 2-Mammal)
Small Mammal Type	1	(1-General, 2- Herbivore, 3-Insectivore) Default value should be 1
Benthic invertebrates, fish and aquatic plants based on Sediment or Surface Water Uptake	1	(1-Sediment, 2-Surface Water) Default value should be 1
General Parameters		
Body weight	0.5	kg
Food intake rate	0.124	kg wet-wt/day
Water intake rate	0.037	L/day
Ingestion of Soil		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction diet that is dry solid	0.3	
Fraction of food intake rate	0.02	
Ingestion rate	0.000744	kg dry-wt/day
Fraction from site	1	
Intake factor (IFing-sl)	0.001488	kg/kg-day
Ingestion of Terrestrial Plants		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction of food intake rate	1	
Ingestion rate	0.124	kg wet-wt/day
Fraction from site	1	
Intake factor (IFing-tp)	0.248	kg/kg-day
Ingestion of Terrestrial Invertebrates		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction of food intake rate	0.1	
Ingestion rate	0.0124	kg wet-wt/day
Fraction from site	1	
Intake factor (IFing-ti)	0.0248	kg/kg-day
Ingestion of Terrestrial Mammals/Birds		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-tm)	0	kg/kg-day
Ingestion of Surface Water		
Applicable pathway?	1	(0 = no, 1 = yes)
Ingestion rate	0.037	L/day
Fraction from site	1	
Intake factor (IFing-sw)	0.074	L/kg-day
Ingestion of Sediment		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction diet that is dry solid	0	
Fraction of food intake rate	0	
Ingestion rate	0	kg dry-wt/day
Fraction from site	0	

Jacques Whitford's Ecological Risk Assessment Model (Version 1.21)

Intake Parameters for the Ptarmigan

Receptor Name	Ptarmigan	
Name of Area	CAM-F	
Receptor Type	1	(1-Bird, 2-Mammal)
Small Mammal Type	1	(1-General, 2- Herbivore, 3-Insectivore) Default value should be 1
Benthic invertebrates, fish and aquatic plants based on Sediment or Surface Water Uptake	1	(1-Sediment, 2-Surface Water) Default value should be 1
Intake factor (IFing-sed)	0	kg/kg-day
Ingestion of Aquatic Plants		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-ap)	0	kg/kg-day
Ingestion of Benthic Invertebrates		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-ai)	0	kg/kg-day
Ingestion of Fish		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-fsh)	0	kg/kg-day

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Intake Parameters for the Lemming

Receptor Name	Lemming	
Name of Area	CAM-F	
Receptor Type	2	(1-Bird, 2-Mammal)
Small Mammal Type	1	(1-General, 2- Herbivore, 3-Insectivore) Default value should be 1
Benthic invertebrates, fish and aquatic plants based on Sediment or Surface Water Uptake	1	(1-Sediment, 2-Surface Water) Default value should be 1
General Parameters		
Body weight	0.04	kg
Food intake rate	0.023	kg wet-wt/day
Water intake rate	0.009	L/day
Ingestion of Soil		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction diet that is dry solid	0.3	
Fraction of food intake rate	0.02	
Ingestion rate	0.000138	kg dry-wt/day
Fraction from site	1	
Intake factor (IFing-sl)	0.00345	kg/kg-day
Ingestion of Terrestrial Plants		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction of food intake rate	1	
Ingestion rate	0.023	kg wet-wt/day
Fraction from site	1	
Intake factor (IFing-tp)	0.575	kg/kg-day
Ingestion of Terrestrial Invertebrates		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-ti)	0	kg/kg-day
Ingestion of Terrestrial Mammals/Birds		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	1	
Intake factor (IFing-tm)	0	kg/kg-day
Ingestion of Surface Water		
Applicable pathway?	1	(0 = no, 1 = yes)
Ingestion rate	0.009	L/day
Fraction from site	1	
Intake factor (IFing-sw)	0.225	L/kg-day
Ingestion of Sediment		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction diet that is dry solid	0.1	
Fraction of food intake rate	0.01	
Ingestion rate	0.000023	kg dry-wt/day

Jacques Whitford's Ecological Risk Assessment Model (Version 1.21)

Intake Parameters for the Lemming

Receptor Name	Lemming	
Name of Area	CAM-F	
Receptor Type	2	(1-Bird, 2-Mammal)
Small Mammal Type	1	(1-General, 2- Herbivore, 3-Insectivore) Default value should be 1
Benthic invertebrates, fish and aquatic plants based on Sediment or Surface Water Uptake	1	(1-Sediment, 2-Surface Water) Default value should be 1
Fraction from site	1	
Intake factor (IFing-sed)	0	kg/kg-day
Ingestion of Aquatic Plants		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	1	
Intake factor (IFing-ap)	0	kg/kg-day
Ingestion of Benthic Invertebrates		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0.25	
Ingestion rate	0.00575	kg wet-wt/day
Fraction from site	1	
Intake factor (IFing-ai)	0	kg/kg-day
Ingestion of Fish		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0.25	
Ingestion rate	0.00575	kg wet-wt/day
Fraction from site	1	
Intake factor (IFing-fsh)	0	kg/kg-day

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Intake Parameters for the Ermine

Receptor Name	Ermine	
Name of Area	CAM-F	
Receptor Type	2	(1-Bird, 2-Mammal)
Small Mammal Type	1	(1-General, 2- Herbivore, 3-Insectivore) Default value should be 1
Benthic invertebrates, fish and aquatic plants based on Sediment or Surface Water Uptake	1	(1-Sediment, 2-Surface Water) Default value should be 1
General Parameters		
Body weight	0.128	kg
Food intake rate	0.026336787	kg wet-wt/day
Water intake rate	0.009273303	L/day
Ingestion of Soil		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction diet that is dry solid	0.3	
Fraction of food intake rate	0.028	
Ingestion rate	0.000221229	kg dry-wt/day
Fraction from site	1	
Intake factor (IFing-sl)	0.001728352	kg/kg-day
Ingestion of Terrestrial Plants		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction of food intake rate	0.05	
Ingestion rate	0.001316839	kg wet-wt/day
Fraction from site	1	
Intake factor (IFing-tp)	0.010287807	kg/kg-day
Ingestion of Terrestrial Invertebrates		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction of food intake rate	0.1	
Ingestion rate	0.002633679	kg wet-wt/day
Fraction from site	1	
Intake factor (IFing-ti)	0.020575615	kg/kg-day
Ingestion of Terrestrial Mammals/Birds		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction of food intake rate	0.85	
Ingestion rate	0.022386269	kg wet-wt/day
Fraction from site	1	
Intake factor (IFing-tm)	0.174892727	kg/kg-day
Ingestion of Surface Water		
Applicable pathway?	1	(0 = no, 1 = yes)
Ingestion rate	0.009273303	L/day
Fraction from site	1	
Intake factor (IFing-sw)	0.072447678	L/kg-day
Ingestion of Sediment		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction diet that is dry solid	0	
Fraction of food intake rate	0	
Ingestion rate	0	kg dry-wt/day

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Intake Parameters for the Ermine

Receptor Name	Ermine	
Name of Area	CAM-F	
Receptor Type	2	(1-Bird, 2-Mammal)
Small Mammal Type	1	(1-General, 2- Herbivore, 3-Insectivore) Default value should be 1
Benthic invertebrates, fish and aquatic plants based on Sediment or Surface Water Uptake	1	(1-Sediment, 2-Surface Water) Default value should be 1
Fraction from site	0	
Intake factor (IFing-sed)	0	kg/kg-day
Ingestion of Aquatic Plants		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-ap)	0	kg/kg-day
Ingestion of Benthic Invertebrates		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-ai)	0	kg/kg-day
Ingestion of Fish		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-fsh)	0	kg/kg-day

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Intake Parameters for the Caribou

Receptor Name	Caribou	
Name of Area	CAM-F	
Receptor Type	2	(1-Bird, 2-Mammal)
Small Mammal Type	1	(1-General, 2- Herbivore, 3-Insectivore) Default value should be 1
Benthic invertebrates, fish and aquatic plants based on Sediment or Surface Water Uptake	1	(1-Sediment, 2-Surface Water) Default value should be 1
General Parameters		
Body weight	117.5	kg
Food intake rate	18.6639	kg wet-wt/day
Water intake rate	7.222196069	L/day
Ingestion of Soil		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction diet that is dry solid	0.15	
Fraction of food intake rate	0.082	
Ingestion rate	0.22956597	kg dry-wt/day
Fraction from site	1	
Intake factor (IFing-sl)	0.001953753	kg/kg-day
Ingestion of Terrestrial Plants		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction of food intake rate	1	
Ingestion rate	18.6639	kg wet-wt/day
Fraction from site	1	
Intake factor (IFing-tp)	0.158841702	kg/kg-day
Ingestion of Terrestrial Invertebrates		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-ti)	0	kg/kg-day
Ingestion of Terrestrial Mammals/Birds		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-tm)	0	kg/kg-day
Ingestion of Surface Water		
Applicable pathway?	1	(0 = no, 1 = yes)
Ingestion rate	7.222196069	L/day
Fraction from site	1	
Intake factor (IFing-sw)	0.061465498	L/kg-day
Ingestion of Sediment		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction diet that is dry solid	0	
Fraction of food intake rate	0	
Ingestion rate	0	kg dry-wt/day

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Intake Parameters for the Caribou

Receptor Name	Caribou	
Name of Area	CAM-F	
Receptor Type	2	(1-Bird, 2-Mammal)
Small Mammal Type	1	(1-General, 2- Herbivore, 3-Insectivore) Default value should be 1
Benthic invertebrates, fish and aquatic plants based on Sediment or Surface Water Uptake	1	(1-Sediment, 2-Surface Water) Default value should be 1
Fraction from site	0	
Intake factor (IFing-sed)	0	kg/kg-day
Ingestion of Aquatic Plants		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-ap)	0	kg/kg-day
Ingestion of Benthic Invertebrates		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-ai)	0	kg/kg-day
Ingestion of Fish		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-fsh)	0	kg/kg-day

Jacques Whitford's Ecological Risk Assessment Model (Version 1.21)

Intake Parameters for the Arctic Fox

Receptor Name	Arctic Fox	
Name of Area	CAM-F	
Receptor Type	2	(1-Bird, 2-Mammal)
Small Mammal Type	1	(1-General, 2- Herbivore, 3-Insectivore) Default value should be 1
Benthic invertebrates, fish and aquatic plants based on Sediment or Surface Water Uptake	1	(1-Sediment, 2-Surface Water) Default value should be 1
General Parameters		
Body weight	5.75	kg
Food intake rate	0.933	kg wet-wt/day
Water intake rate	0.478	L/day
Ingestion of Soil		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction diet that is dry solid	0.31	
Fraction of food intake rate	0.03	
Ingestion rate	0.0086769	kg dry-wt/day
Fraction from site	1	
Intake factor (IFing-sl)	0.001509026	kg/kg-day
Ingestion of Terrestrial Plants		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction of food intake rate	0.05	
Ingestion rate	0.04665	kg wet-wt/day
Fraction from site	1	
Intake factor (IFing-tp)	0.008113043	kg/kg-day
Ingestion of Terrestrial Invertebrates		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-ti)	0	kg/kg-day
Ingestion of Terrestrial Mammals/Birds		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction of food intake rate	0.95	
Ingestion rate	0.88635	kg wet-wt/day
Fraction from site	1	
Intake factor (IFing-tm)	0.154147826	kg/kg-day
Ingestion of Surface Water		
Applicable pathway?	1	(0 = no, 1 = yes)
Ingestion rate	0.478	L/day
Fraction from site	1	
Intake factor (IFing-sw)	0.083130435	L/kg-day
Ingestion of Sediment		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction diet that is dry solid	0	
Fraction of food intake rate	0	
Ingestion rate	0	kg dry-wt/day

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Intake Parameters for the Arctic Fox

Receptor Name	Arctic Fox	
Name of Area	CAM-F	
Receptor Type	2	(1-Bird, 2-Mammal)
Small Mammal Type	1	(1-General, 2- Herbivore, 3-Insectivore) Default value should be 1
Benthic invertebrates, fish and aquatic plants based on Sediment or Surface Water Uptake	1	(1-Sediment, 2-Surface Water) Default value should be 1
Fraction from site	0	
Intake factor (IFing-sed)	0	kg/kg-day
Ingestion of Aquatic Plants		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-ap)	0	kg/kg-day
Ingestion of Benthic Invertebrates		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-ai)	0	kg/kg-day
Ingestion of Fish		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-fsh)	0	kg/kg-day

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Intake Parameters for the Arctic Hare

Receptor Name	Arctic Hare	
Name of Area	CAM-F	
Receptor Type	2	(1-Bird, 2-Mammal)
Small Mammal Type	1	(1-General, 2- Herbivore, 3-Insectivore) Default value should be 1
Benthic invertebrates, fish and aquatic plants based on Sediment or Surface Water Uptake	1	(1-Sediment, 2-Surface Water) Default value should be 1
General Parameters		
Body weight	4.3	kg
Food intake rate	1.149	kg wet-wt/day
Water intake rate	0.368	L/day
Ingestion of Soil		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction diet that is dry solid	0.22	
Fraction of food intake rate	0.024	
Ingestion rate	0.00606672	kg dry-wt/day
Fraction from site	1	
Intake factor (IFing-sl)	0.001410865	kg/kg-day
Ingestion of Terrestrial Plants		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction of food intake rate	0.95	
Ingestion rate	1.09155	kg wet-wt/day
Fraction from site	1	
Intake factor (IFing-tp)	0.253848837	kg/kg-day
Ingestion of Terrestrial Invertebrates		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-ti)	0	kg/kg-day
Ingestion of Terrestrial Mammals/Birds		
Applicable pathway?	1	(0 = no, 1 = yes)
Fraction of food intake rate	0.05	
Ingestion rate	0.05745	kg wet-wt/day
Fraction from site	1	
Intake factor (IFing-tm)	0.013360465	kg/kg-day
Ingestion of Surface Water		
Applicable pathway?	1	(0 = no, 1 = yes)
Ingestion rate	0.368	L/day
Fraction from site	1	
Intake factor (IFing-sw)	0.085581395	L/kg-day
Ingestion of Sediment		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction diet that is dry solid	0	
Fraction of food intake rate	0	
Ingestion rate	0	kg dry-wt/day

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Intake Parameters for the Arctic Hare

Receptor Name	Arctic Hare	
Name of Area	CAM-F	
Receptor Type	2	(1-Bird, 2-Mammal)
Small Mammal Type	1	(1-General, 2- Herbivore, 3-Insectivore) Default value should be 1
Benthic invertebrates, fish and aquatic plants based on Sediment or Surface Water Uptake	1	(1-Sediment, 2-Surface Water) Default value should be 1
Fraction from site	0	
Intake factor (IFing-sed)	0	kg/kg-day
Ingestion of Aquatic Plants		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-ap)	0	kg/kg-day
Ingestion of Benthic Invertebrates		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-ai)	0	kg/kg-day
Ingestion of Fish		
Applicable pathway?	0	(0 = no, 1 = yes)
Fraction of food intake rate	0	
Ingestion rate	0	kg wet-wt/day
Fraction from site	0	
Intake factor (IFing-fsh)	0	kg/kg-day

Reference Toxicity Doses for Bird Species Exposed to Constituents to Concern from CAM-F

Constituent	Test Species	Test Species Body Weight (kg wet)	Body Weight Reference	Effect	Reference	Endpoint	Daily Dose (mg/kg- day)	Total Uncertainty Factor (a)	Chronic LOAEL-Test Species (b) (mg/kg- day)	Receptor Species	Body Weight Scaling Factor	Reference Toxicity Dose (mg/kg-day)
BTEX												
Benzene	Mouse	0.03	USEPA (1988a)	reproduction	Nawrot & Staples (1979), Sample et al. (1996)	chronic LOAEL	2.64E+02	5	5.27E+01	Parimigan	1.76E+00	9.25E+01
Ethylbenzene	Rat	0.35	USEPA (1988a)	liver and kidney toxicity	Wolf et al. (1956)	subchronic NOAEL	9.71E+01	5	1.94E+01	Parimigan	1.07E+00	2.09E+01
Toluene	Mouse	0.03	USEPA (1988a)	reproduction	Nawrot & Staples (1979), Sample et al. (1996)	chronic LOAEL	2.60E+02	5	5.20E+01	Parimigan	1.76E+00	9.13E+01
Xylenes	Mouse	0.03	USEPA (1988a)	reproduction	Marks et al. (1982), Sample et al. (1996)	chronic LOAEL	2.58E+00	5	5.16E-01	Parimigan	1.76E+00	9.06E-01
TPH - CCME CWS												
Aliph>C06-C08 - F1	Mallard Duck	1	Heinz et al. 1989	Liver hypertrophy and splenic atrophy	Adapted from Szaro et al. (1978)	chronic LOAEL	5.00E+02	1	5.00E+02	Parimigan	8.71E-01	4.35E+02
Aliph>C08-C10 -F1	Mallard Duck	1	Heinz et al. 1989	Liver hypertrophy and splenic atrophy	Adapted from Szaro et al. (1978)	chronic LOAEL	5.00E+02	1	5.00E+02	Parimigan	8.71E-01	4.35E+02
Arom>C08-C10 -F1	Mallard Duck	1	Heinz et al. 1989	Liver hypertrophy and splenic atrophy	Adapted from Szaro et al. (1978)	chronic LOAEL	5.00E+01	1	5.00E+01	Parimigan	8.71E-01	4.35E+01
F1 - Total							--		--			--
Aliph>C10-C12 -F2	Mallard Duck	1	Heinz et al. 1989	Liver hypertrophy and splenic atrophy	Adapted from Szaro et al. (1978)	chronic LOAEL	5.00E+02	1	5.00E+02	Parimigan	8.71E-01	4.35E+02
Aliph>C12-C16 -F2	Mallard Duck	1	Heinz et al. 1989	Liver hypertrophy and splenic atrophy	Adapted from Szaro et al. (1978)	chronic LOAEL	5.00E+02	1	5.00E+02	Parimigan	8.71E-01	4.35E+02
Arom>C10-C12 -F2	Mallard Duck	1	Heinz et al. 1989	Liver hypertrophy and splenic atrophy	Adapted from Szaro et al. (1978)	chronic LOAEL	5.00E+01	1	5.00E+01	Parimigan	8.71E-01	4.35E+01
Arom>C12-C16 -F2	Mallard Duck	1	Heinz et al. 1989	Liver hypertrophy and splenic atrophy	Adapted from Szaro et al. (1978)	chronic LOAEL	5.00E+01	1	5.00E+01	Parimigan	8.71E-01	4.35E+01
F2 - Total							--		--			--
Aliph>C16-C21-F3	Mallard Duck	1	Heinz et al. 1989	Liver hypertrophy and splenic atrophy	Adapted from Szaro et al. (1978)	chronic LOAEL	1.00E+03	1	1.00E+03	Parimigan	8.71E-01	8.71E+02
Aliph>C21-C34 -F3	Mallard Duck	1	Heinz et al. 1989	Liver hypertrophy and splenic atrophy	Adapted from Szaro et al. (1978)	chronic LOAEL	1.50E+02	1	1.50E+02	Parimigan	8.71E-01	1.31E+02
Arom>C16-C21 -F3	Mallard Duck	1	Heinz et al. 1989	Liver hypertrophy and splenic atrophy	Adapted from Szaro et al. (1978)	chronic LOAEL	1.00E+02	1	1.00E+02	Parimigan	8.71E-01	8.71E+01
Arom>C21 -C34 -F3	Mallard Duck	1	Heinz et al. 1989	Liver hypertrophy and splenic atrophy	Adapted from Szaro et al. (1978)	chronic LOAEL	1.50E+02	1	1.50E+02	Parimigan	8.71E-01	1.31E+02
F3 - Total							--		--			--
Aliph>C34-C50 -F4	Mallard Duck	1	Heinz et al. 1989	Liver hypertrophy and splenic atrophy	Adapted from Szaro et al. (1978)	chronic LOAEL	3.00E+03	1	3.00E+03	Parimigan	8.71E-01	2.61E+03
Arom>C34-C50 -F4	Mallard Duck	1	Heinz et al. 1989	Liver hypertrophy and splenic atrophy	Adapted from Szaro et al. (1978)	chronic LOAEL	1.50E+02	1	1.50E+02	Parimigan	8.71E-01	1.31E+02
F4 - Total							--		--			--
Organics												
Aroclor 1254 (Total PCBs)	Ring-necked Pheasant	1	EPA 1993a	reproductive	Dahlgren et al 1972, Sample et al., 1996	chronic LOAEL	1.80E+00	1	1.80E+00	Parimigan	8.71E-01	1.57E+00
Inorganics												
Antimony	Mouse	0.03	USEPA (1988a)	lifespan, longevity	Sample et al. (1996)	chronic LOAEL	1.25E+00	5	2.50E-01	Parimigan	1.76E+00	4.39E-01
Barium	Chicken (chicks)	0.121	EPA 1988a	mortality	Johnson et al. 1960, Sample et al. (1996), ORNL ES/ERTM-86/R3	chronic LOAEL	4.17E+01	1	4.17E+01	Parimigan	1.33E+00	5.54E+01
Beryllium	Rat	0.35	USEPA (1988a)	longevity, weight loss (sub lethal)	Sample et al. (1996), ORNL ES/ERTM-86/R3	chronic NOAEL	6.60E-01	1	6.60E-01	Parimigan	1.07E+00	7.09E-01
Boron	Mallard duck	1	Heinz et al. 1989	reproduction	Smith & Anders (1989), Sample et al. (1996)	chronic LOAEL	1.00E+02	1	1.00E+02	Parimigan	8.71E-01	8.71E+01
Cadmium	Mallard duck	1	Heinz et al. 1989	reproduction	White & Finley (1978), Sample et al. (1996)	chronic LOAEL	2.00E+01	1	2.00E+01	Parimigan	8.71E-01	1.74E+01
Chromium (Total)	Black duck	1.25	Dunning 1964	reproduction	Sample et al. (1996)	chronic LOAEL	5.00E+00	1	5.00E+00	Parimigan	8.33E-01	4.16E+00
Copper	Chicken (chicks)	0.121	EPA 1988a	growth, mortality	Mehring et al. (1960), Sample et al. (1996)	chronic LOAEL	6.17E+01	1	6.17E+01	Parimigan	1.33E+00	8.19E+01
Lead	Japanese quail	0.15	Vos et al. 1971	reproduction	Edens et al. (1976), Sample et al. (1996)	chronic LOAEL	1.13E+01	1	1.13E+01	Parimigan	1.27E+00	1.44E+01
Tin	Japanese quail	0.15	Vos et al. 1971	reproduction	Sample et al. (1996), ORNL ES/ERTM-86/R3	chronic LOAEL	1.69E+01	1	1.69E+01	Parimigan	1.27E+00	2.15E+01
Zinc	White Leghorn hen	1.851	Sample et al. 1996	reproduction	Stahl et al. (1990), Sample et al. (1996)	chronic LOAEL	1.31E+02	1	1.31E+02	Parimigan	7.70E-01	1.01E+02

Notes.

- (a) The following uncertainty factors are used: 5 for subchronic to chronic; 0.2 for NOAEL to LOAEL (5 for LOAEL to NOAEL); 6 for LD₅₀ or LD₀₁ to LOAEL; 5 for mammal to bird
 - (b) The chronic LOAEL is calculated as the Daily Dose divided by the Total Uncertainty Factor
- NA - Not Available

Reference Toxicity Doses for Test Organisms - Mammals - Exposed to Constituents fo Concern from CAM-F												
Constituent	Test Species	Test Species Body Weight (kg wet)	Body Weight Reference	Effect	Reference	Endpoint	Daily Dose (mg/kg-day)	Total Uncertainty Factor (a)	Chronic LOAEL - Test Species (b) (mg/kg-day)	Receptor Species	Body Weight Scaling Factor	Reference Toxicity Dose (mg/kg-day)
BTEX												
Benzene	Mouse	0.03	USEPA (1988a)	reproduction	Nawrot & Staples (1979), Sample et al. (1996)	chronic LOAEL	2.64E+02	1	2.64E+02	Arctic Fox	7.30E-01	1.92E+02
Ethylbenzene	Rat	0.35	USEPA (1988a)	liver and kidney toxicity	Wolf et al. (1956)	subchronic NOAEL	9.71E+01	1	9.71E+01	Arctic Fox	8.45E-01	8.21E+01
Toluene	Mouse	0.03	USEPA (1988a)	reproduction	Nawrot & Staples (1979), Sample et al. (1996)	chronic LOAEL	2.60E+02	1	2.60E+02	Arctic Fox	7.30E-01	1.90E+02
Xylenes	Mouse	0.03	USEPA (1988a)	reproduction	Marks et al. (1982), Sample et al. (1996)	chronic LOAEL	2.60E+00	1	2.60E+00	Arctic Fox	7.30E-01	1.90E+00
TPH - CCME CWS												
Aliph>C06-C08 - F1	Mouse	0.03	USEPA (1988a)	Various	Weight of Evidence from ATSDR (200X), TPHCWG (1997), Hutcheson et al. (1996) and CWS (2001)	chronic LOAEL	2.00E+02	1	2.00E+02	Arctic Fox	7.30E-01	1.46E+02
Aliph>C08-C10 -F1	Mouse	0.03	USEPA (1988a)	Various	Weight of Evidence from ATSDR (200X), TPHCWG (1997), Hutcheson et al. (1996) and CWS (2001)	chronic LOAEL	2.00E+02	1	2.00E+02	Arctic Fox	7.30E-01	1.46E+02
Arom>C08-C10 -F1	Mouse	0.03	USEPA (1988a)	Various	Weight of Evidence from ATSDR (200X), TPHCWG (1997), Hutcheson et al. (1996) and CWS (2001)	chronic LOAEL	5.00E+01	1	5.00E+01	Arctic Fox	7.30E-01	3.65E+01
F1 - Total							--		--		0.00E+00	--
Aliph>C10-C12 -F2	Mouse	0.03	USEPA (1988a)	Various	Weight of Evidence from ATSDR (200X), TPHCWG (1997), Hutcheson et al. (1996) and CWS (2001)	chronic LOAEL	2.00E+02	1	2.00E+02	Arctic Fox	7.30E-01	1.46E+02
Aliph>C12-C16 -F2	Mouse	0.03	USEPA (1988a)	Various	Weight of Evidence from ATSDR (200X), TPHCWG (1997), Hutcheson et al. (1996) and CWS (2001)	chronic LOAEL	2.00E+02	1	2.00E+02	Arctic Fox	7.30E-01	1.46E+02
Arom>C10-C12 -F2	Mouse	0.03	USEPA (1988a)	Various	Weight of Evidence from ATSDR (200X), TPHCWG (1997), Hutcheson et al. (1996) and CWS (2001)	chronic LOAEL	1.00E+02	1	1.00E+02	Arctic Fox	7.30E-01	7.30E+01
Arom>C12-C16 -F2	Mouse	0.03	USEPA (1988a)	Various	Weight of Evidence from ATSDR (200X), TPHCWG (1997), Hutcheson et al. (1996) and CWS (2001)	chronic LOAEL	1.00E+02	1	1.00E+02	Arctic Fox	7.30E-01	7.30E+01
F2 - Total							--		--		0.00E+00	--
Aliph>C16-C21-F3	Mouse	0.03	USEPA (1988a)	Various	Weight of Evidence from ATSDR (200X), TPHCWG (1997), Hutcheson et al. (1996) and CWS (2001)	chronic LOAEL	4.00E+02	1	4.00E+02	Arctic Fox	7.30E-01	2.92E+02
Aliph>C21-C34 -F3	Mouse	0.03	USEPA (1988a)	Various	Weight of Evidence from ATSDR (200X), TPHCWG (1997), Hutcheson et al. (1996) and CWS (2001)	chronic LOAEL	4.00E+02	1	4.00E+02	Arctic Fox	7.30E-01	2.92E+02
Arom>C16-C21 -F3	Mouse	0.03	USEPA (1988a)	Various	Weight of Evidence from ATSDR (200X), TPHCWG (1997), Hutcheson et al. (1996) and CWS (2001)	chronic LOAEL	1.00E+02	1	1.00E+02	Arctic Fox	7.30E-01	7.30E+01
Arom>C21-C34 -F3	Mouse	0.03	USEPA (1988a)	Various	Weight of Evidence from ATSDR (200X), TPHCWG (1997), Hutcheson et al. (1996) and CWS (2001)	chronic LOAEL	1.00E+02	1	1.00E+02	Arctic Fox	7.30E-01	7.30E+01
F3 - Total							--		--		0.00E+00	--
Aliph>C34-C50 -F4	Mouse	0.03	USEPA (1988a)	Various	Weight of Evidence from ATSDR (200X), TPHCWG (1997), Hutcheson et al. (1996) and CWS (2001)	chronic LOAEL	1.00E+03	1	1.00E+03	Arctic Fox	7.30E-01	7.30E+02
Arom>C34-C50 -F4	Mouse	0.03	USEPA (1988a)	Various	Weight of Evidence from ATSDR (200X), TPHCWG (1997), Hutcheson et al. (1996) and CWS (2001)	chronic LOAEL	1.00E+02	1	1.00E+02	Arctic Fox	7.30E-01	7.30E+01
F4 - Total							--		--		0.00E+00	--

Reference Toxicity Doses for Test Organisms - Mammals - Exposed to Constituents fo Concern from CAM-F

Constituent	Test Species	Test Species Body Weight (kg wet)	Body Weight Reference	Effect	Reference	Endpoint	Daily Dose (mg/kg-day)	Total Uncertainty Factor (a)	Chronic LOAEL - Test Species (b)	Receptor Species	Body Weight Scaling Factor	Reference Toxicity Dose (mg/kg-day)
Organics												
Atrocor 1254 (Total PCBs)	Mink	1	USEPA (1988a)	reproduction	Sample et al. (1996)	chronic LOAEL	6.85E-01	1	6.85E-01	Arctic Fox	9.00E-01	6.17E-01
Inorganics												
Antimony	Mouse	0.03	USEPA (1988a)	lifespan, longevity	Ondreicka et al. (1966), Sample et al. (1996)	chronic LOAEL	1.25E+00	1	1.25E+00	Arctic Fox	7.30E-01	9.12E-01
Barium	Rat	0.35	USEPA (1988a)	growth, hypertension	Schroeder & Mitchner (1971), Sample et al. (1996)	chronic NOAEL	5.10E+00	0.2	2.55E+01	Arctic Fox	8.45E-01	2.16E+01
Beryllium	Rat	0.35	USEPA (1988a)	longevity, weight loss	Schroeder & Mitchner (1971), Sample et al. (1996)	chronic NOAEL	6.60E-01	0.2	3.30E+00	Arctic Fox	8.45E-01	2.79E+00
Boron	Rat	0.35	USEPA (1988a)	reproduction	Weir & Fisher (1972), Sample et al. (1996)	chronic LOAEL	9.36E+01	1	9.36E+01	Arctic Fox	8.45E-01	7.91E+01
Cadmium	Rat	0.35	USEPA (1988a)	reproduction	Sutou et al. (1980), Sample et al. (1996)	chronic LOAEL	1.00E+01	1	1.00E+01	Arctic Fox	8.45E-01	8.45E+00
Chromium (Total)	Rat	0.35	USEPA (1988a)	reproduction	Ivankovic & Preussmann (1975), Sample et al. (1996)	chronic NOAEL	2.74E+03	0.2	1.37E+04	Arctic Fox	8.45E-01	1.16E+04
Copper	Mink	1	USEPA (1988a)	reproduction	Aulerich et al. (1982), Sample et al. (1996)	chronic LOAEL	1.51E+01	1	1.51E+01	Arctic Fox	9.00E-01	1.36E+01
Lead	Rat	0.35	USEPA (1988a)	reproduction	Azar et al. (1973), Sample et al. (1996)	chronic LOAEL	8.00E+01	1	8.00E+01	Arctic Fox	8.45E-01	6.76E+01
Tin	Mouse	0.03	USEPA (1988a)	reproduction	Davis et al. (1987), Sample et al. (1996)	chronic LOAEL	3.50E+01	1	3.50E+01	Arctic Fox	7.30E-01	2.55E+01
Zinc	Rat	0.35	USEPA (1988a)	reproduction	Schlucker & Cox (1968), Sample et al. (1996)	chronic LOAEL	3.20E+02	1	3.20E+02	Arctic Fox	8.45E-01	2.71E+02

Notes:

(a) The following uncertainty factors are used: 5 for subchronic to chronic; 0.2 for NOAEL to LOAEL (5 for LOAEL to NOAEL); 6 for LD₅₀ or LD₀₁ to LOAEL.

(b) The chronic LOAEL is calculated as the Daily Dose divided by the Total Uncertainty Factor.

NA - Not Available