CEH application to Beaverlodge scenario

- ERICA Tool with January 2011 draft wildlife TRS CR values

- Kd values – compared ERICA defaults CRs against scenario data. Where differed ‘considerable’ values derived from scenario data (U, Th, Po estimated from scenario; Pb and a ERICA default used).

Assumptions re equilibrium in U-238 decay-chain

U-238	In scenario
Th-234	Assume U238 activity concentr
U-234	Assume U238 activity concentr
Th-230	In scenario
Ra-226	In scenario
Ra-222	In Ra-226 DCC
Po-218	In Ra-226 DCC
Pb-214	In Ra-226 DCC
Bi-214	In Ra-226 DCC
Pb-210	In scenario
Bi-210	In Pb-210 DCC
Po-210	In scenario

Where a radionuclide missing for a specific site then value assumed based on ratio of radionuclides at other sites.
e.g. Hanson Bay Th-230 and Po-210 inuts estimated from isotopic ratios at Dubyna Lake

CR values

Wildlife	RN	AM	AMSD	Min	Max	n	Used
Fish - benthic feeding	Pb	1.8E+2	6.3E+2	3.2E+0	7.5E+3	148	Y
Fish - forage	Pb	1.7E+2	2.9E+2	2.0E+0	5.9E+2	40	Y
Fish - piscivorous	Pb	3.5E+2	7.8E+2	8.3E+0	5.7E+3	201	Y
Fish - benthic feeding	Po	1.6E+3	4.4E+3	6.3E+1	1.9E+4	90	Y
Fish - forage	Po	7.6E+3	1.2E+4	1.3E+2	2.6E+4	18	Y
Fish - piscivorous	Po	1.3E+3	6.7E+3	4.9E+1	3.7E+4	95	Y
Fish	Ra	1.6E+2	4.8E+2	1.4E-1	4.8E+3	307	Fish forage
Fish - benthic feeding	Ra	2.6E+2	7.4E+2	1.4E+1	4.8E+3	108	Y
Fish - piscivorous	Ra	1.1E+2	2.0E+2	6.7E+0	8.5E+2	78	Y
Fish	Th	6.7E+2	4.6E+3	3.3E+1	3.7E+4	64	All fish groups
Fish - benthic feeding	U	7.5E+1	2.1E+2	6.0E-1	7.6E+2	99	Y
Fish - Forage	U	1.1E+3	2.3E+3	3.5E+0	5.0E+3	52	Y
Fish - piscivorous	U	2.2E+1	4.0E+1	5.1E-1	1.7E+2	84	Y
Mollusc	Pb	6.0E+3	1.5E+4	1.1E+2	2.9E+4	32	Insect larvae
Mollusc - bivalve	Pb	6.0E+3	1.5E+4	1.1E+2	2.9E+4	32	Y
Mollusc	Po	1.2E+5	5.2E+4	1.7E+3	1.7E+5	147	Insect larvae
Mollusc - bivalve	Po	1.3E+5	4.9E+4	1.7E+3	1.7E+5	141	Y
Mollusc	Ra	1.1E+4	1.4E+4	1.2E+1	1.3E+5	350	Insect larvae
Mollusc - bivalve	Ra	1.1E+4	1.4E+4	1.2E+1	1.3E+5	350	Y
Mollusc	U	5.6E+2	1.3E+2			3	Insect larvae
Mollusc - Bivalve	U	5.6E+2	1.3E+2			3	Y (& for Th)
Phytoplankton	Th	1.2E+4	1.0E+4	2.1E+2	2.9E+4	30	Insect larvae

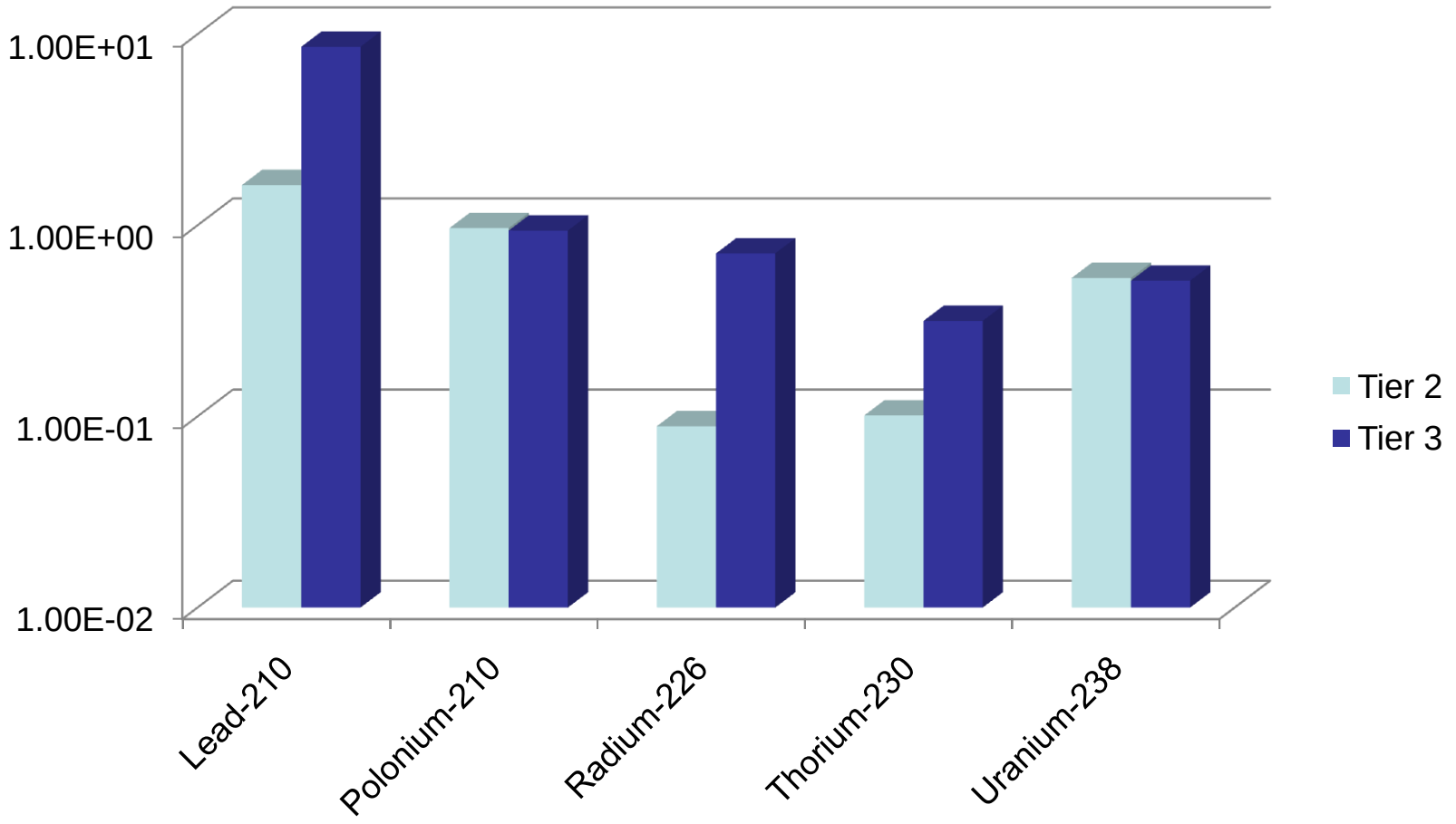
Kd values

Pb	100000
Po	351000 [ERICA = 2E7]
Ra	15200
Th	318000 [ERICA = 1.8E7]
U	39400 [ERICA=50]

Tier

- Initially ran at Tier 3 (probabilistic) but submitted Tier 2 (deterministic), because, e.g.:

Pelagic fish Bq/kg Vulture



Pelagic fish Bq/kg Dubyna