



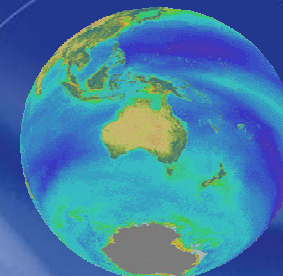
Australian Government

Australian Nuclear Science and Technology Organisation

Little Forest Burial Ground Scenario

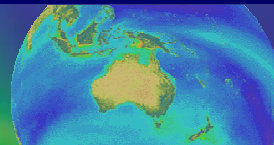
Results

September 2010, Vienna



Code	Participant	Version	CR sources	CR distributions	Soil Dist	alph
ERICA	CEH		WT Database Techdoc 1616 ERICA defaults TRS 472 j. refs	Trunc L-normal exponential	Trunc L-normal	10, 3,
ERICA	SCK		ERICA defaults Techdoc 1616	Trunc L-normal exponential	Trunc L-normal	10, 3,
ERICA	JSI		ERICA defaults	Trunc L-normal exponential	Trunc L-normal	10, 3,
FASTer-lite	NRPA		allometry (Eikos) Compartmental modeling (Ecolego) j. refs	Trunc L-normal		
K-Biota	KAERI		ERICA defaults TRS 364 allometry	Trunc L-normal exponential		10, 3,
RESRAD-Biota	ANL		RESRAD CR defaults j. refs	Trunc. L-norm. Bounded L- norm. exponential	L-normal	20, 1,

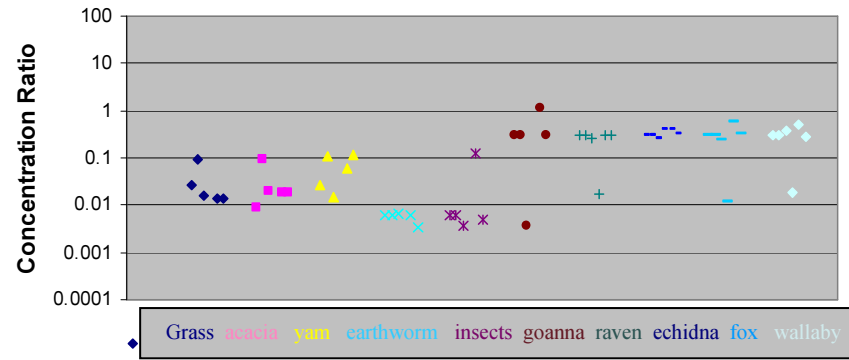
- Concentration ratios
- Tissue concentrations
- Whole organism doses



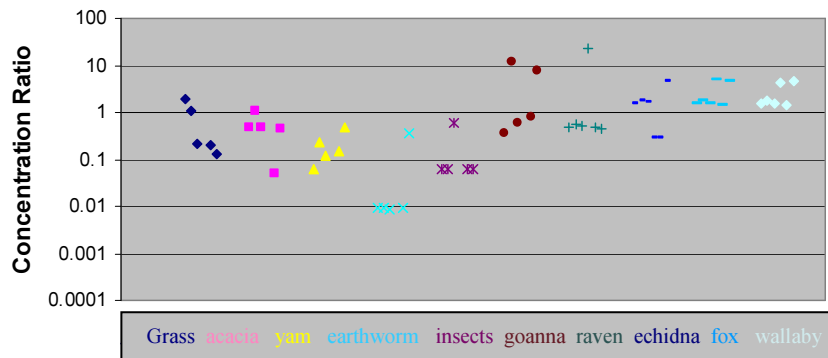
Mean Concentration Ratios by radionuclide

- Co-60, Sr-90, Cs-137

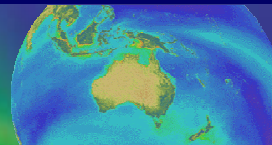
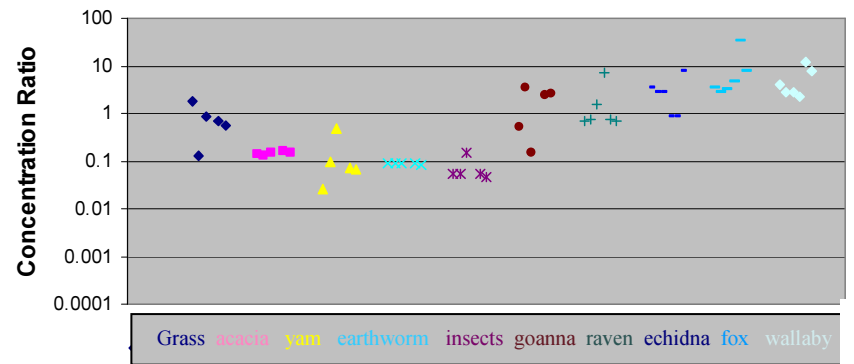
Co-60 modelled CRs among species



Sr-90 modelled CRs among species



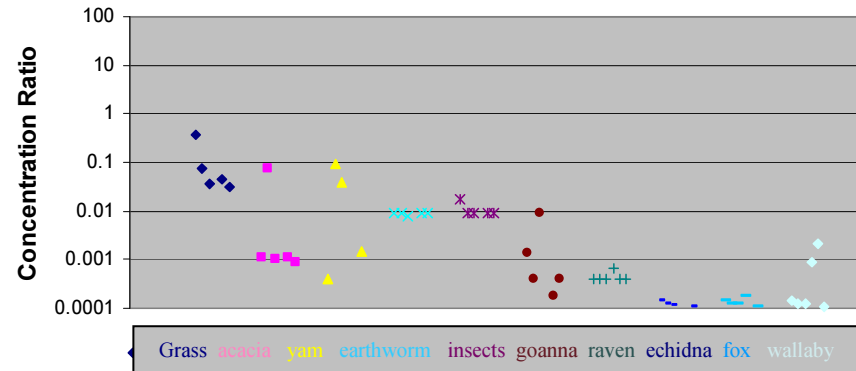
Cs-137 modelled CRs among species



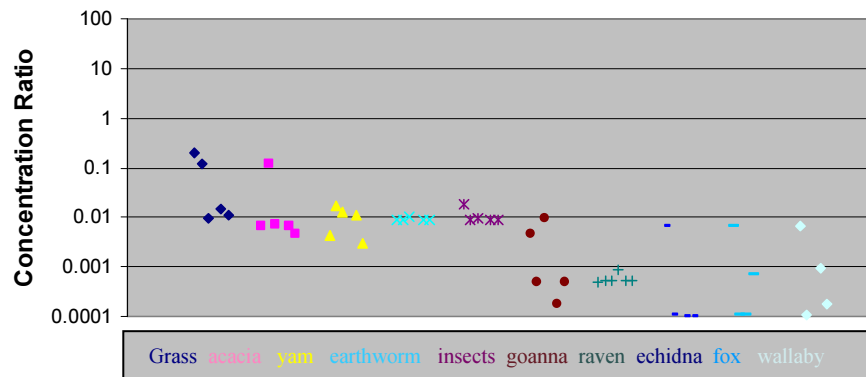
Mean Concentration Ratios by radionuclide

- Th-232, U-234, U-238

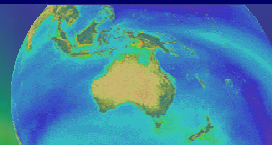
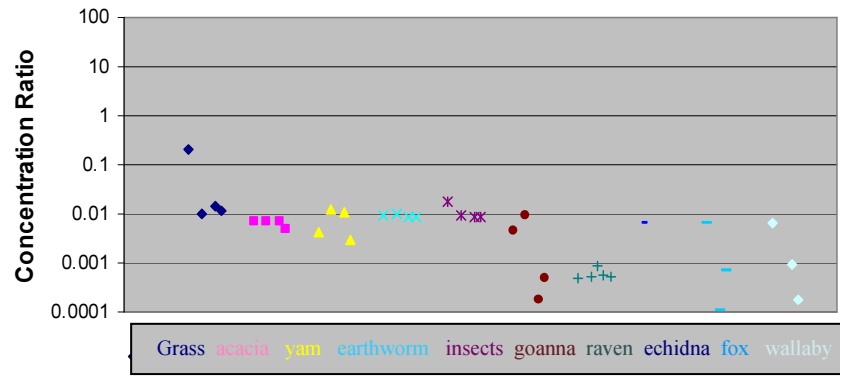
Th-232 modelled CRs among species



U-234 modelled CRs among species



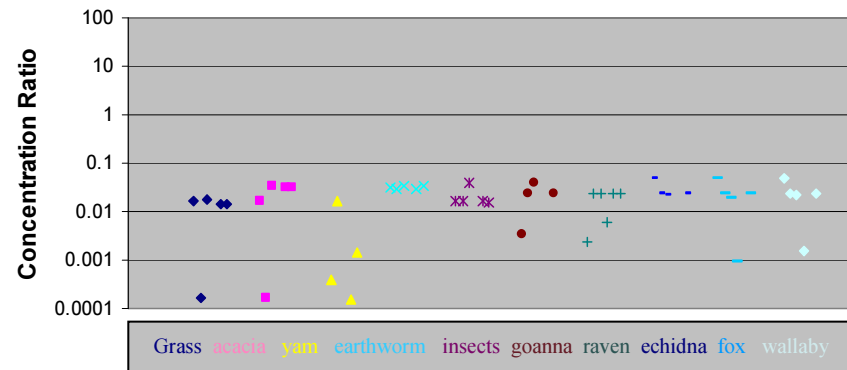
U-238 modelled CRs among species



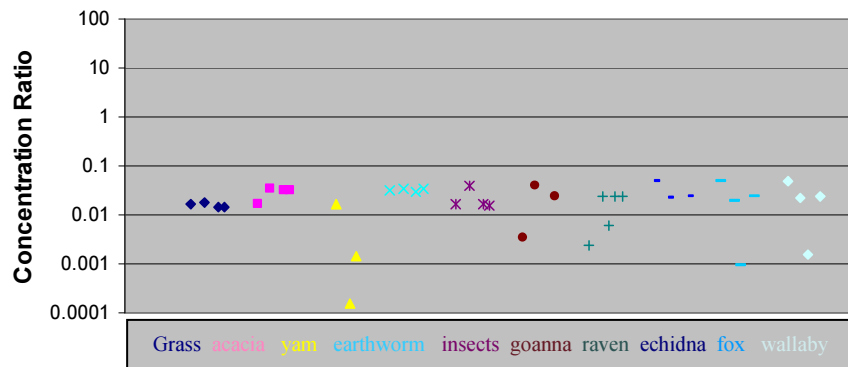
Mean Concentration Ratios by radionuclide

- Pu-238, Pu-239, Am-241

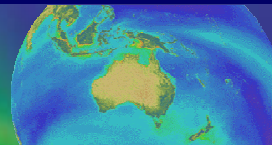
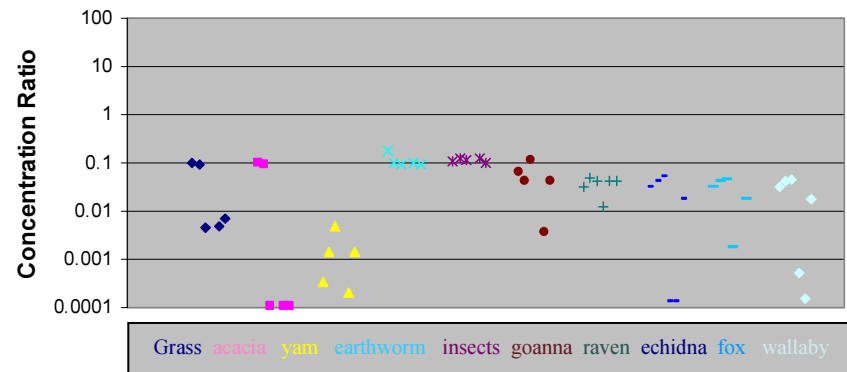
Pu-238 modelled CRs among species



Pu-239 modelled CRs among species

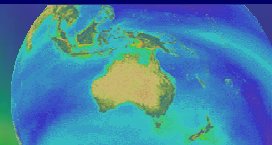
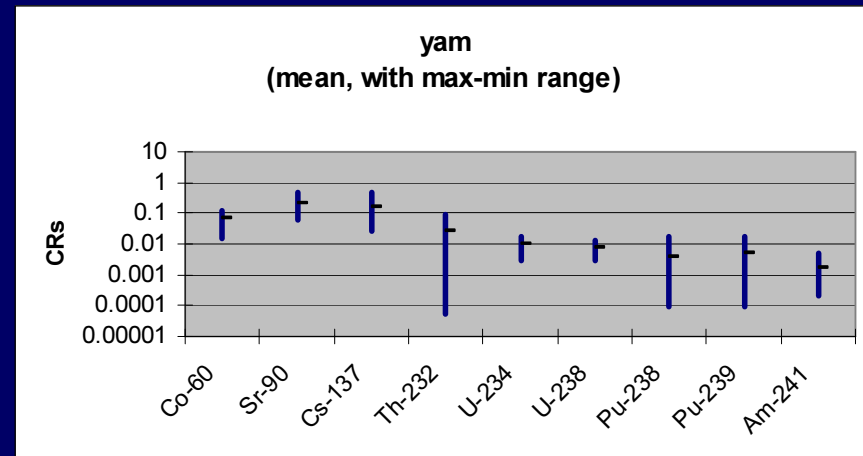
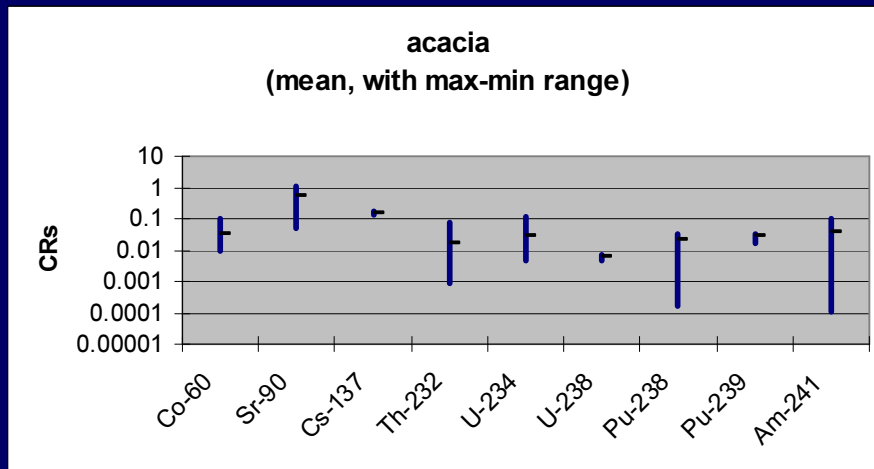
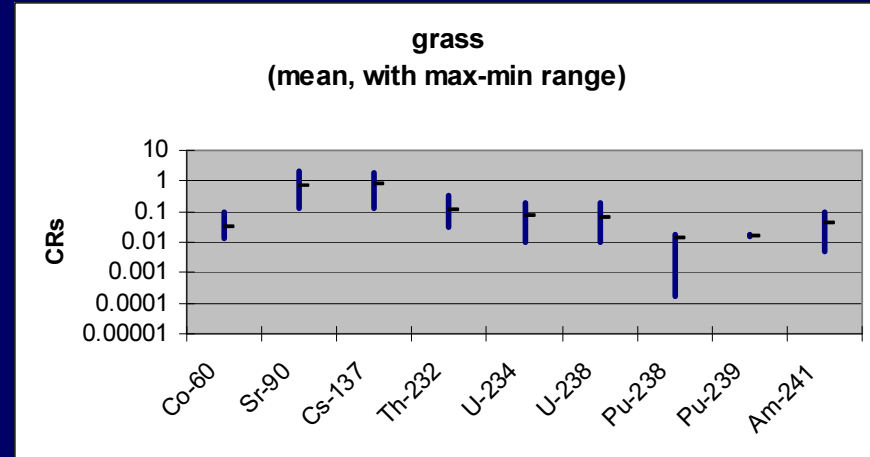


Am-241 modelled CRs among species



CRs - mean and range of the group participants

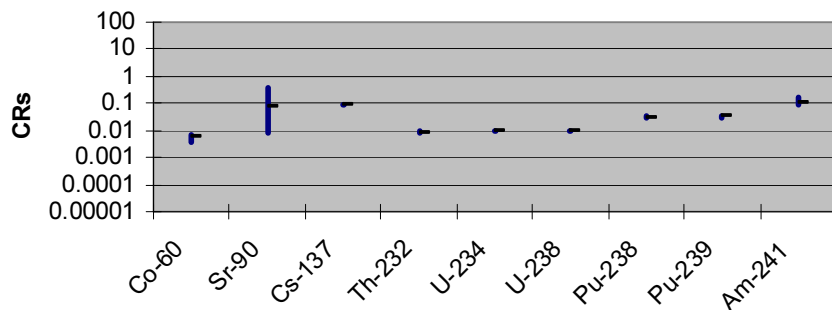
- Vegetation



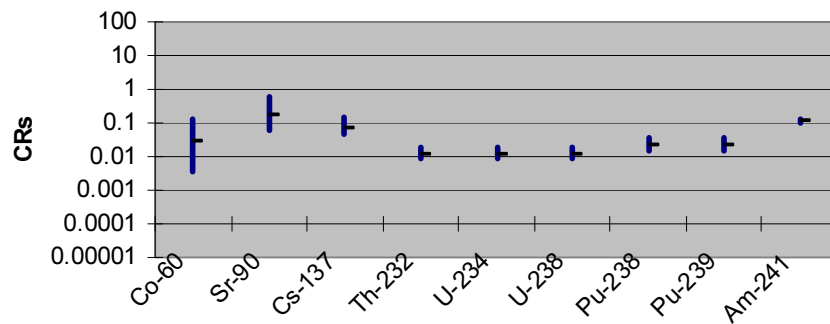
CRs - mean and range of the group of participants

- Arthropods, reptile, bird

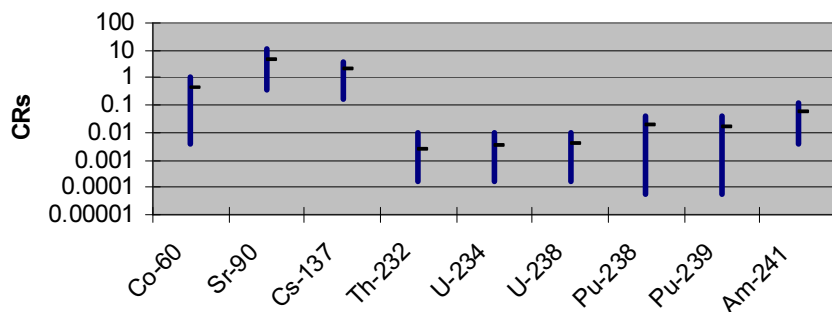
earthworm
(mean, with max-min range)



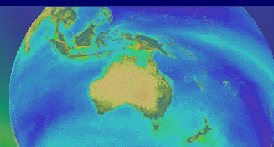
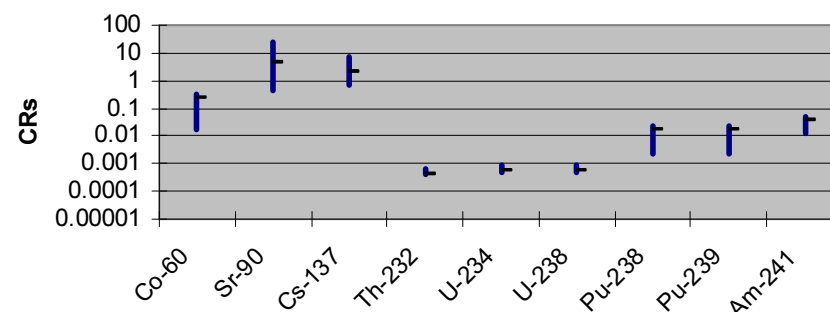
insects
(mean, with max-min range)



goanna
(mean, with max-min range)

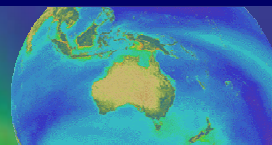
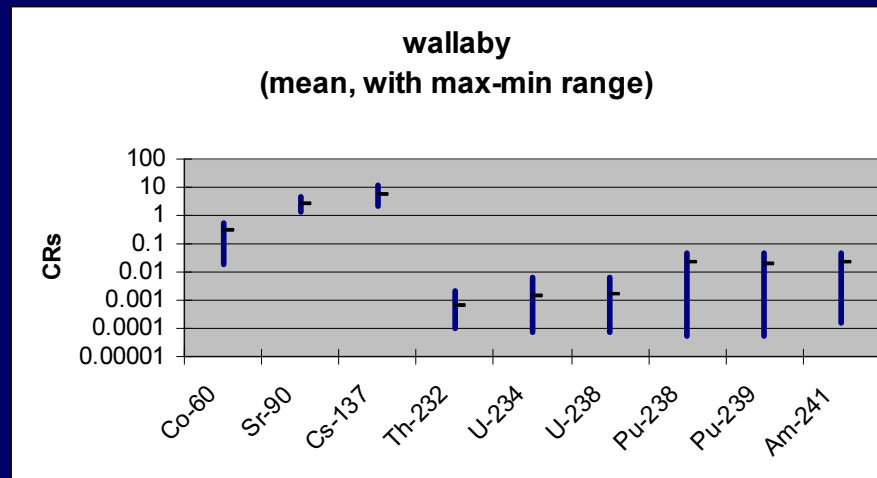
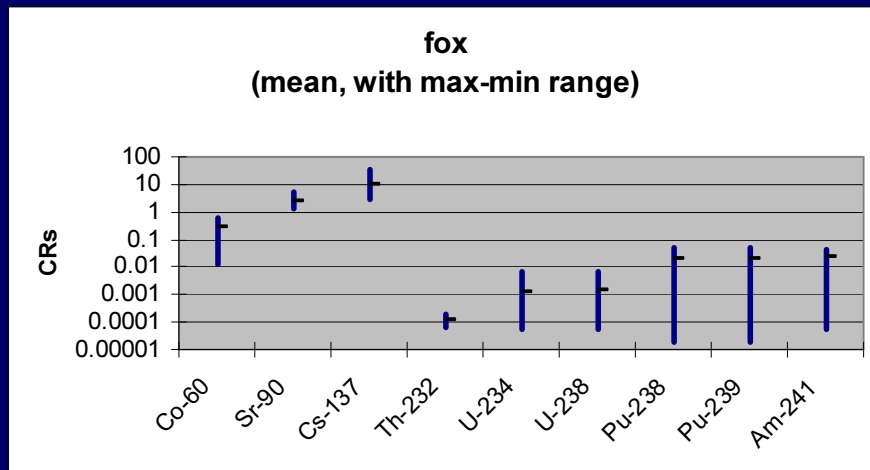
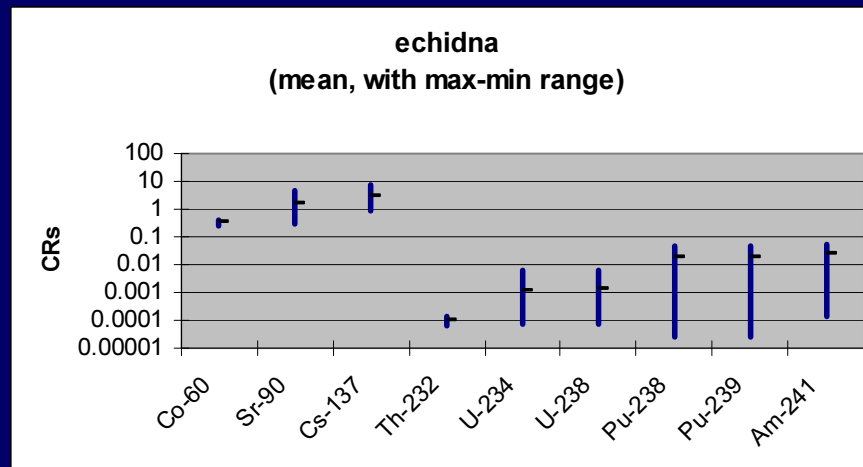


raven
(mean, with max-min range)



CRs - mean and range of the group of participants

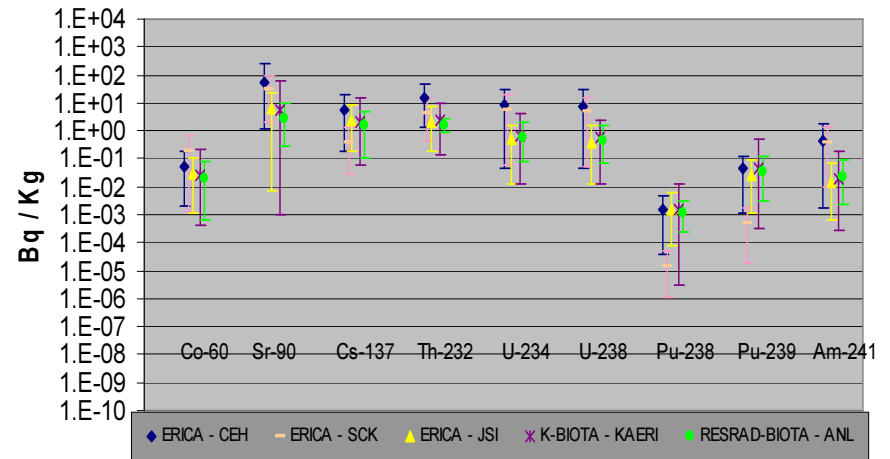
Mammals



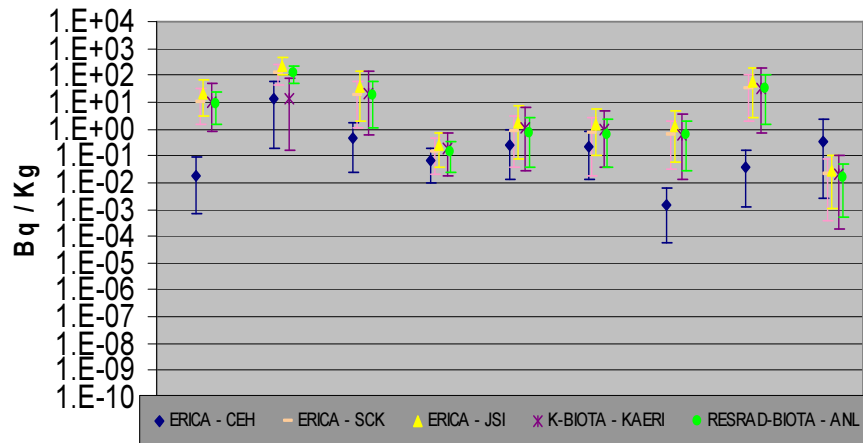
Mean tissue concentrations

vegetation

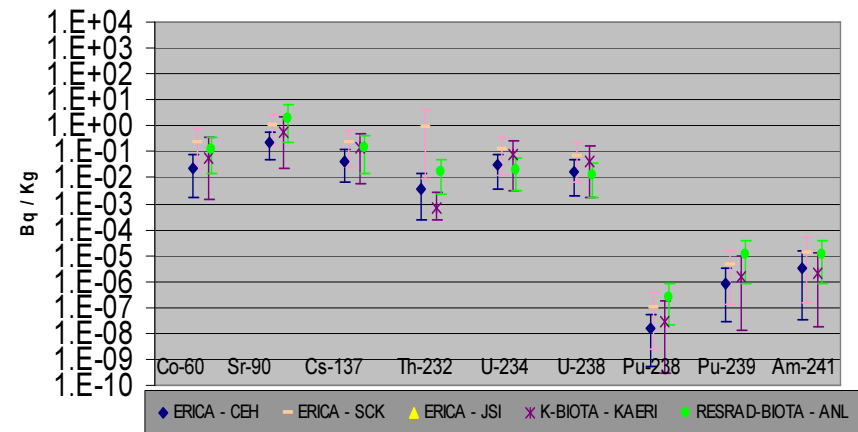
Grass - Tissue Concentrations
(mean, 5th-95th percentiles)



Acacia - Tissue Concentrations
(mean, 5th-95th percentiles)



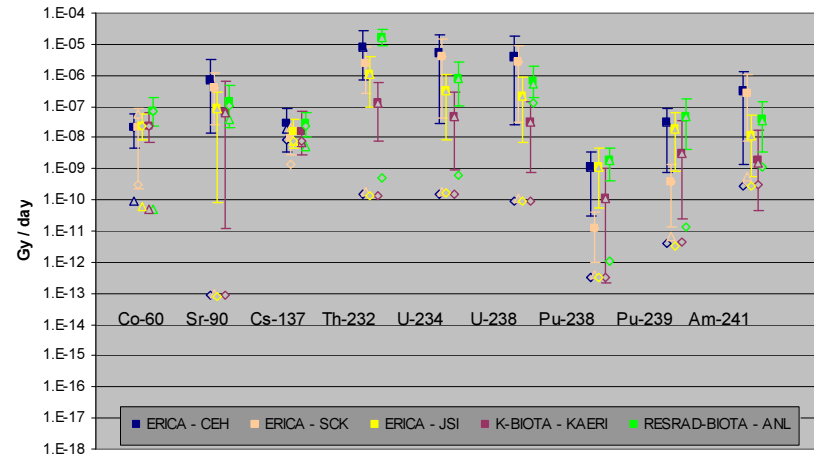
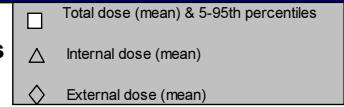
Yam - Tissue Concentrations
(mean, 5th-95th percentiles)



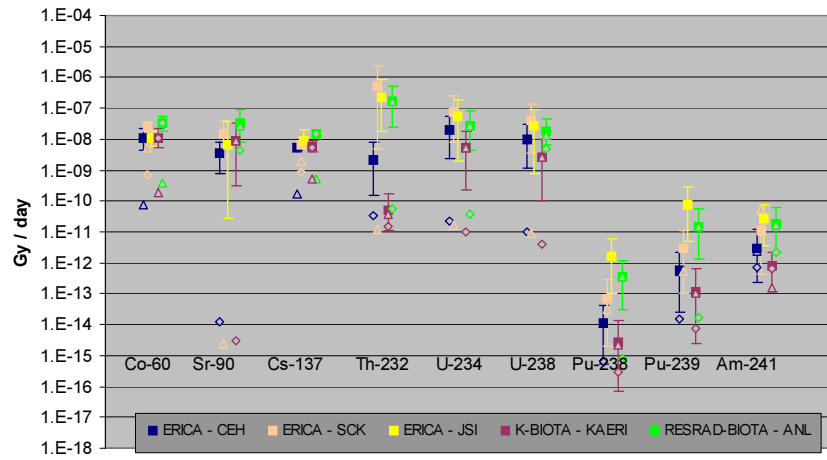
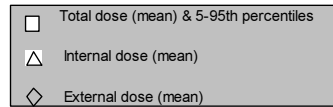
Dose estimates

vegetation

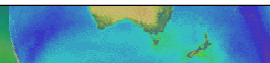
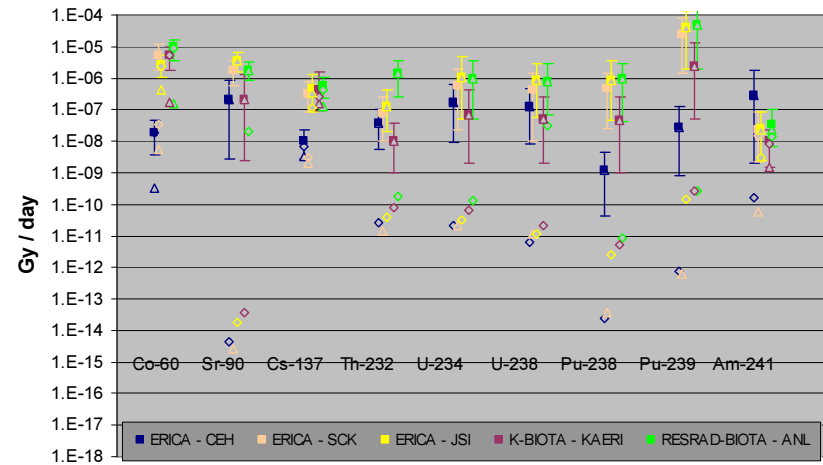
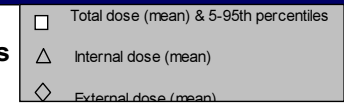
Grass - Dose Estimates



Yam - Dose Estimates

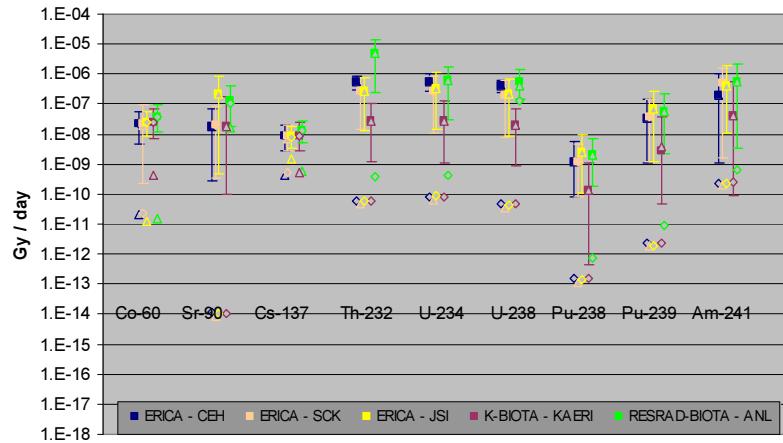
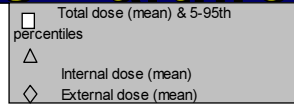


Acacia - Dose Estimates

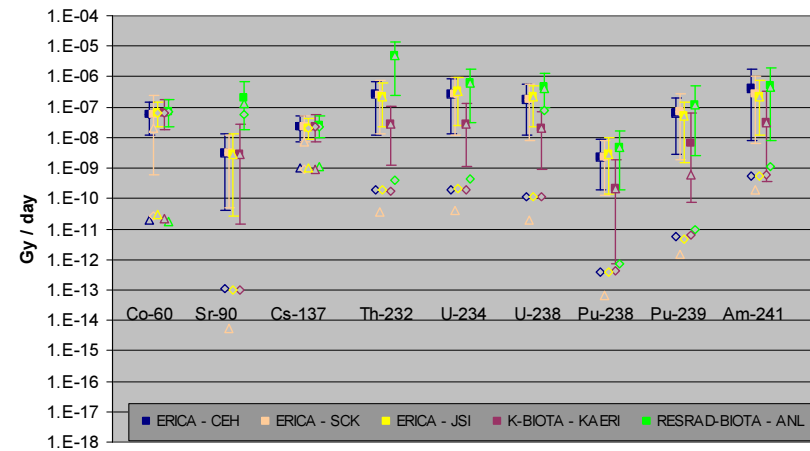
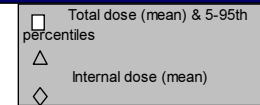


Dose estimates – arthropods, reptile, bird

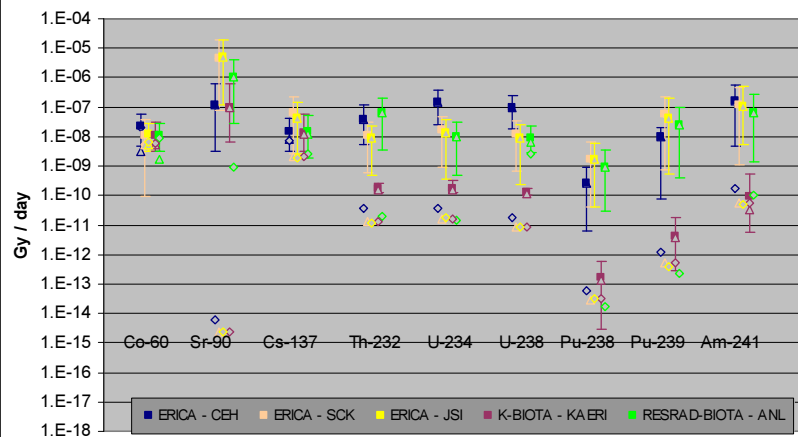
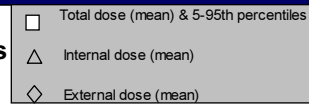
Insects - Dose Estimates



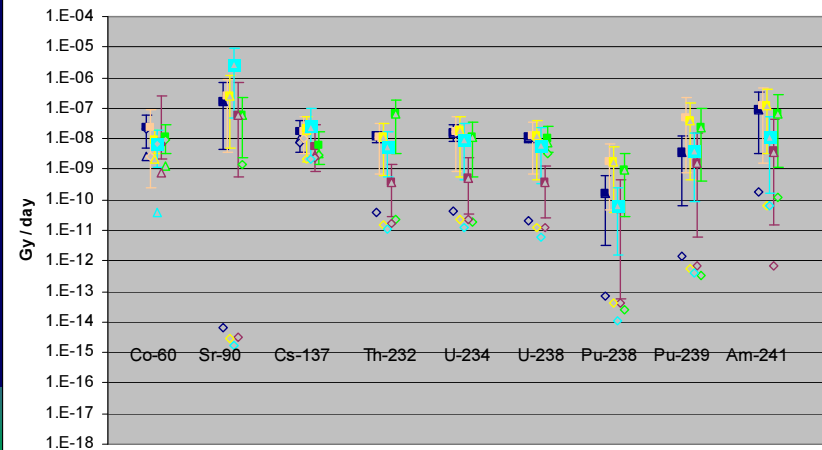
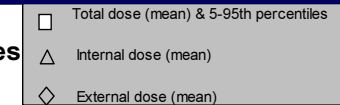
Earthworm - Dose Estimates



Goanna - Dose Estimates



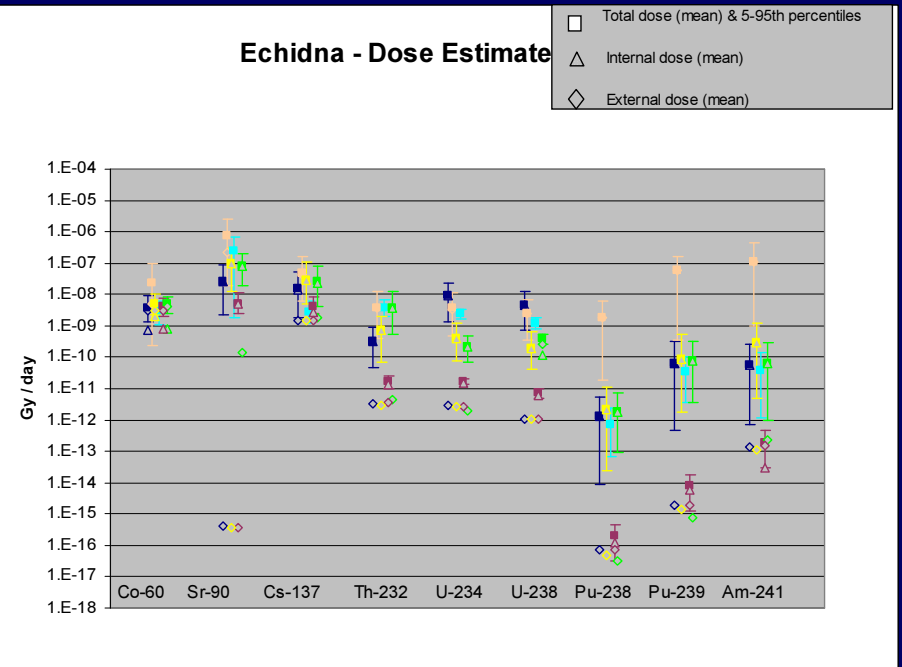
Raven - Dose Estimates



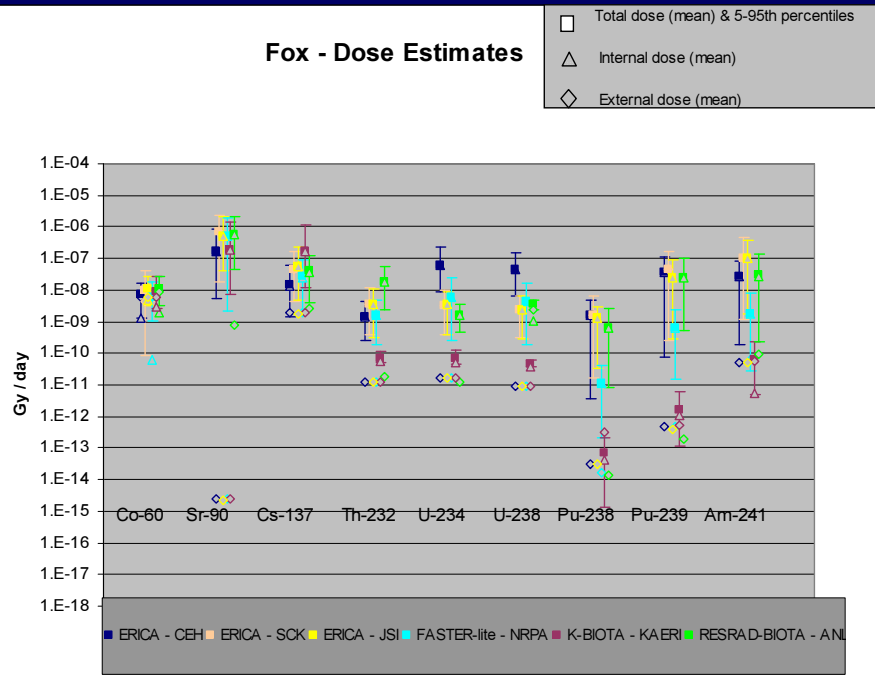
Dose estimates

Mammals

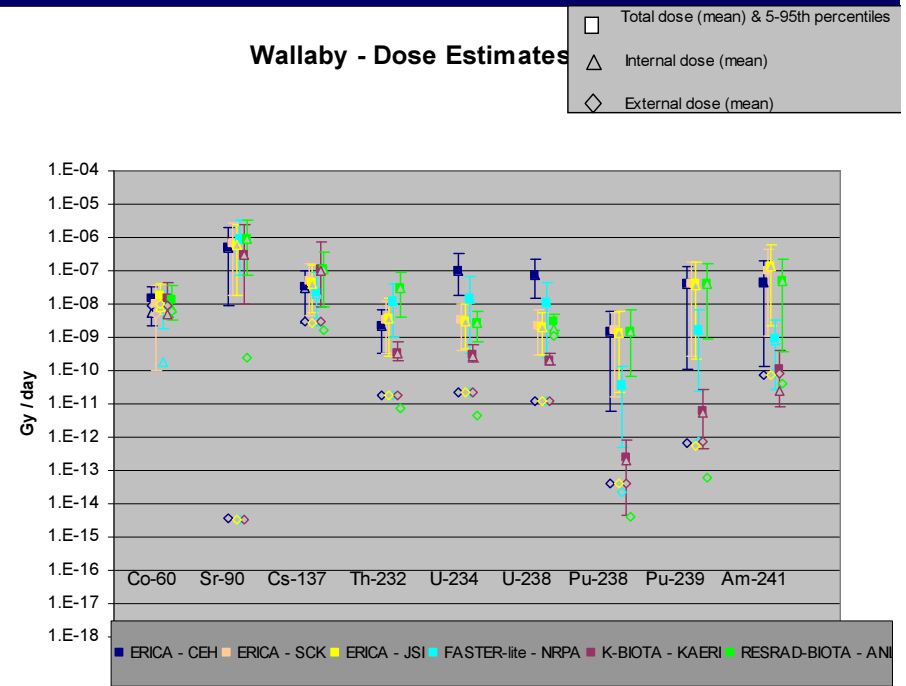
Echidna - Dose Estimate



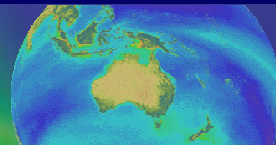
Fox - Dose Estimates



Wallaby - Dose Estimates



Summary Statistics



Ten Representative Species

Plant – Grass

Plant, tree – Acacia

Plant, root crop – Yam

Annelid – Earthworm

Arthropods - Insects (beetle, grasshopper)

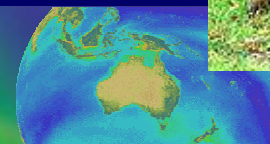
Reptile – goanna

Bird - raven (representing raven, magpie, kookaburra)

Mammal, monotreme – Echidna

Mammal, canine – Fox

Mammal, marsupial, macropod – Wallaby



Representative Species Data

		Weight (kg)	Dimension of head and body a,b,c (cm)	notes
<i>graminoids</i>	Grass	0.01	20, 1, 1	0-10cm root depth
<i>Vigna lanceolata</i>	Pencil yam	0.1	15, 3, 3	Assume <1 m yam root depth
<i>Acacia</i>	Acacia	845	1500, 25, 25	Assume 0-2m root depth
<i>Octochaetidae</i>	Earthworm	0.0052	10, 1, 1	Lives 0-1m deep in soil. Eats organic matter w/soil ingestion
<i>Insecta</i>	Insects (beetle, grasshopper)	0.001	1, 0.4, 0.2	This category of insect lives 100% at soil surface. Eats organic matter, scavenger
<i>Varanus varius</i>	Goanna	8	70, 16, 12	Lives 80% at soil surface, 20% in tree. Eats insects, eggs, smaller reptiles, carrion.
<i>Corvus coronoides</i>	Raven	0.6	40, 14, 10	Lives 70% in tree/air, 30% at soil surface. Eats 34% carrion, 42% invertebrates, 24% plants
<i>Tachyglossus</i>	Echidna	4	40, 20, 15	Lives 60% in soil, 40% at soil surface. Eats invertebrates (ants) high dust inhalation
<i>Vulpes vulpes</i>	Fox	8	68, 18, 14	Lives 60% in soil, 40% at soil surface. Eats invertebrates, berries, grasses, carrion, rabbits, wallaby
<i>Wallabia bicolor</i>	Swamp wallaby	14	75, 30, 22	Lives 100% at soil surface. Eats grass, forbs.

