

**Working Group 8
Environmental Sensitivities
Progress Report**

**3rd EMRAS II Technical Meeting
Opening Plenary
24 January 2011**

***Presented by:*
Bliss Tracy
Health Canada**

Participants

- **Belgium (Catrinel Turcanu)**
- **Canada (Bliss Tracy, Sohan Chouhan)**
- **Germany (Jochen Tschiersch)**
- **Greece (Maria Psaltaki, Giorgos Eleftheriou)**
- **Italy (Franca Carini, Luigi Monte)**
- **Norway (John Brittain, Mikhail Iosjpe)**
- **Uruguay (Andres Saizar)**
- **IAEA Secretariat (Volodymyr Berkovskyy)**

Environmental sensitivity WG

Objective:

Explore the concept of environmental sensitivity in rural and semi-natural environments in the framework of assessments after an emergency situation

Main tasks:

- Clarify the concept of environmental sensitivity
- Compile a list of sensitivity factors
- Design scenarios
- Carry out modelling exercises

Non-urban Scenarios

- **Agricultural (Europe and Canada)**
- **Alpine (Central Europe)**
- **Temperate forest (Europe and Canada)**
 - Terrestrial
 - Freshwater aquatic
- **Arctic (Europe and Canada)**
 - Terrestrial
 - Freshwater aquatic
- **Shallow marine or coastal**

Radionuclide inputs

- **Cs-137, Sr-90, I-131**
- **A uniform deposition of 1000 Bq/m² each**
- **Both wet and dry deposition**

Calculate radionuclide concentrations in:

- **Soil or water**
- **Plants (important in human food chain)**
- **Animals (important in human food chain)**

Calculate radiation doses to:

- **Individual humans obtaining 100% of their food and drinking water from the local environment.**
- **Adults, 10-year olds, infants**
- **During first and second years after input**
- **Dose coefficients from ICRP-72**
- **Initially, without any countermeasures**
- **Doses to biota could be added later**



**Working Group 8
“Environmental
Sensitivity”**

**Interim Meeting
Piacenza, Italy
1–2 July 2010**



Piacenza meeting, 1–2 July 2010

Freshwater aquatic scenario – MOIRA PLUS



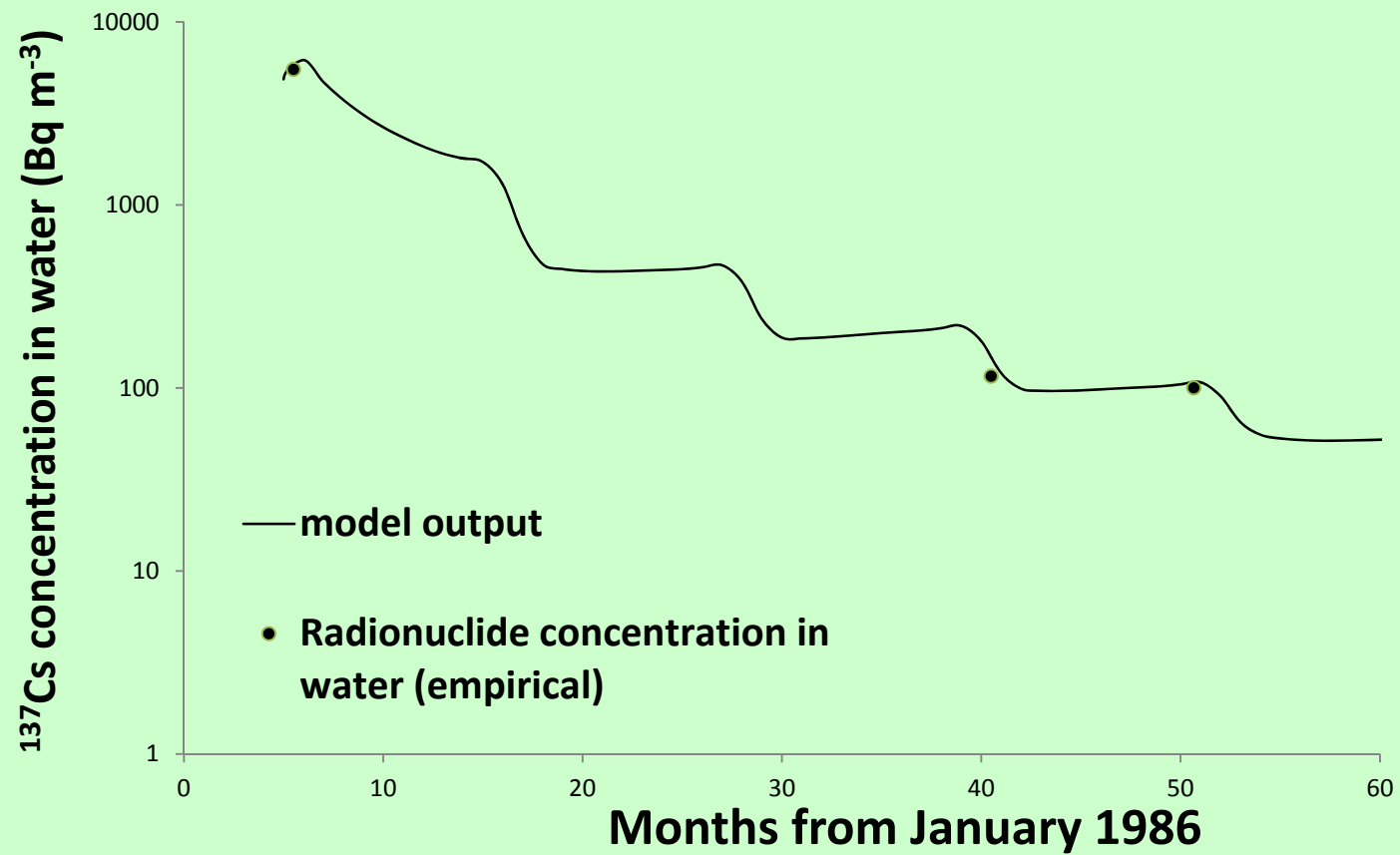
Lake Bracciano, Italy



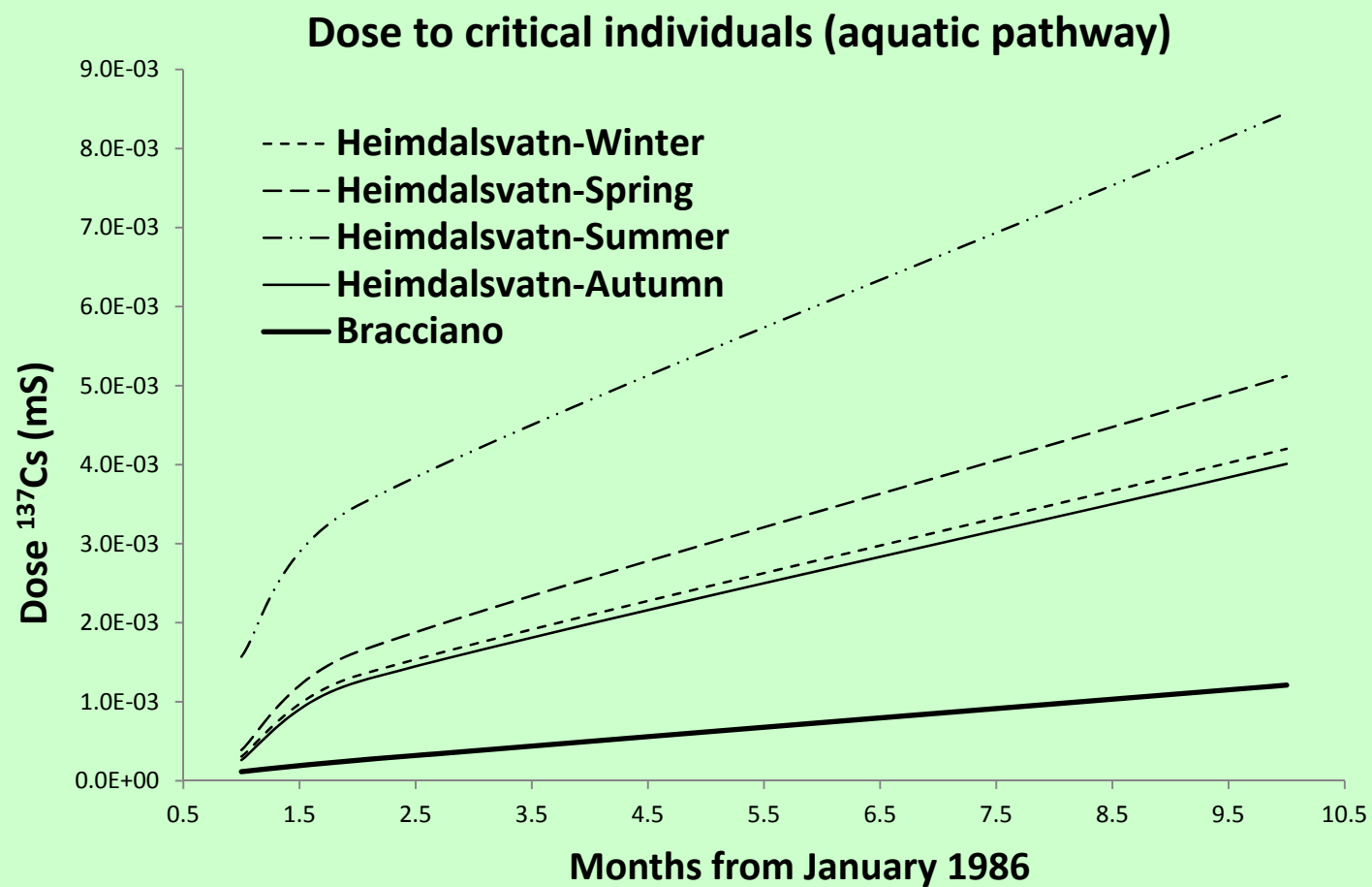
Lake Heimdalsvatn, Norway

Calibrate the model using Chernobyl data

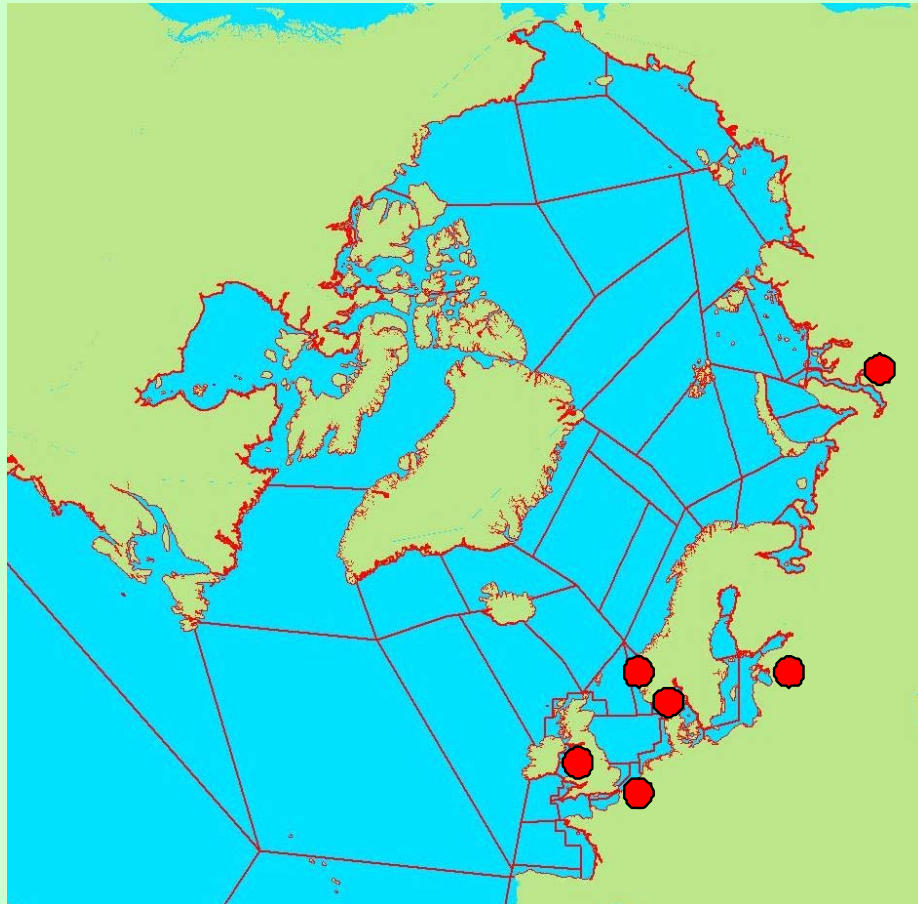
Lake Øvre Heimdalsvatn



Evolution of Cs-137 dose with time

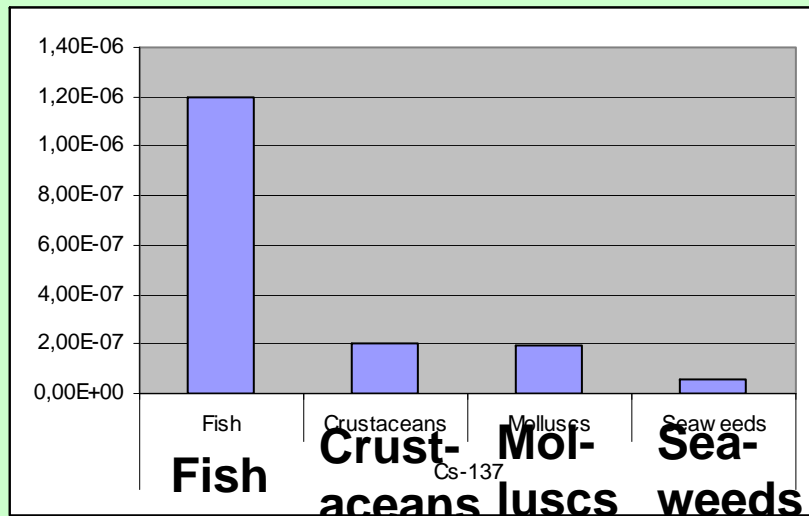


Coastal marine scenario – modelled sites

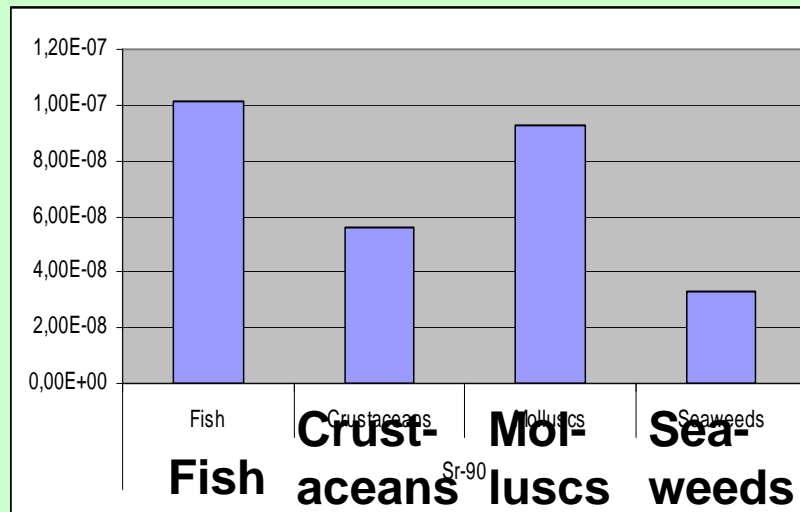


Coastal marine scenario – doses to humans

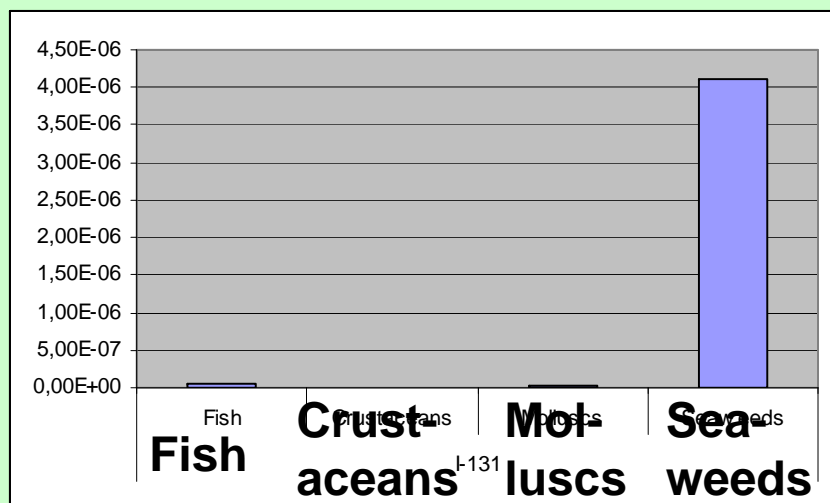
Cs-137



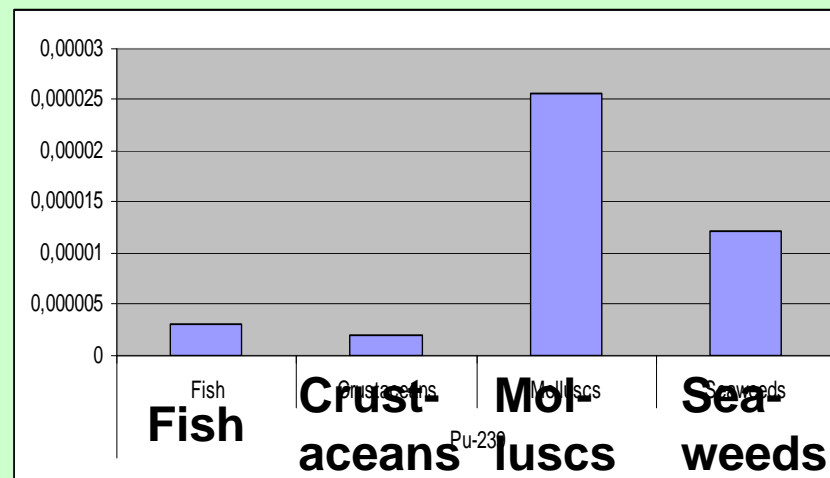
Sr-90



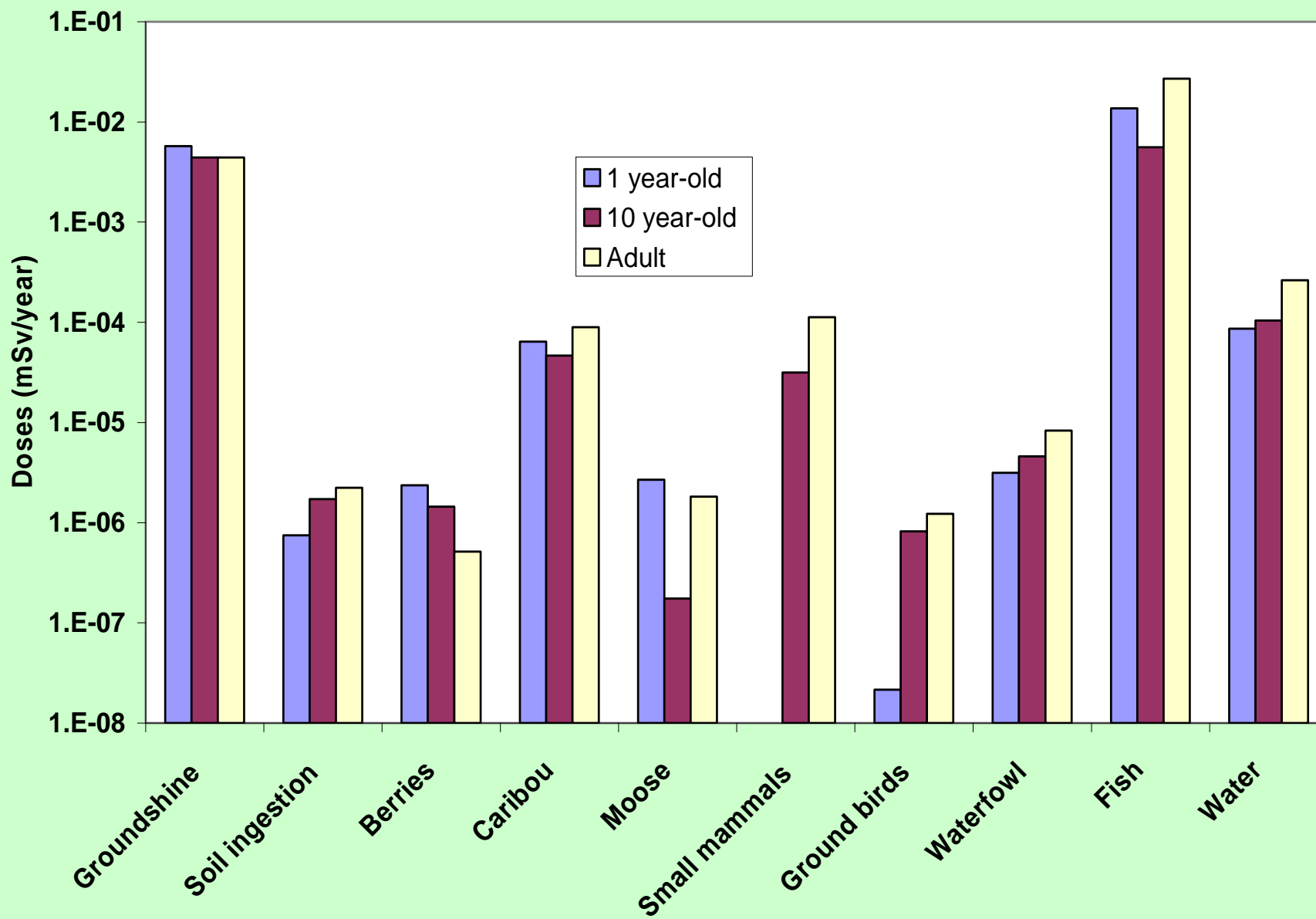
I-131



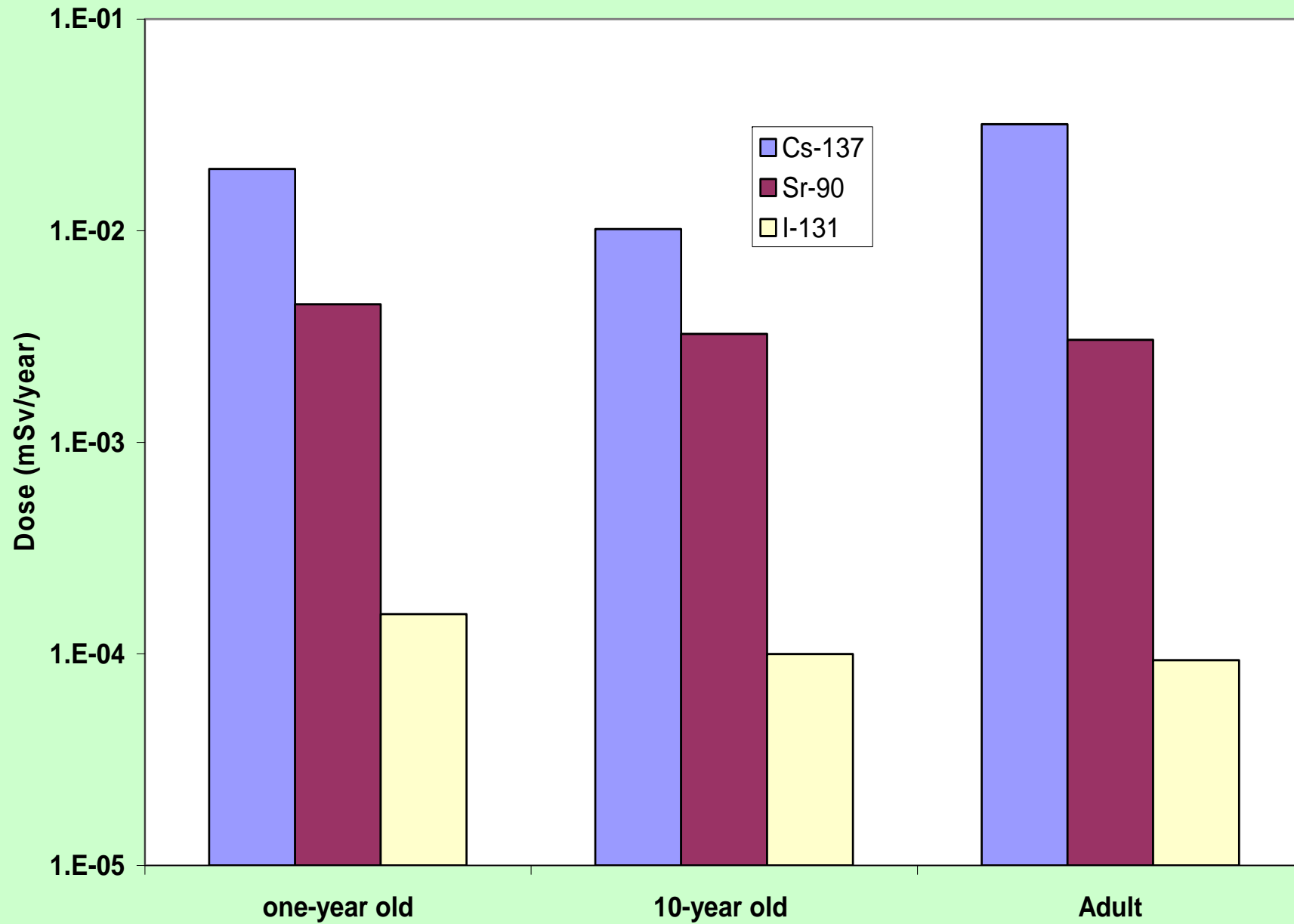
Pu-239



Forest scenario – doses from Cs-137



Forest scenario – comparison of radionuclides



Task	Deadline (X = completed)	
Review of the concept of environmental sensitivity		
Literature review	June 2009	X
Draft concept document	January 2010	X
List of environmental sensitivity factors		
Initial list	February 2010	
Final list	2011	
Scenario Development		
Design	January 2010	X
Modelling exercises		
Interim results	June 2010	X
Final results	June 2011	
Final report		
Preparation of final report	End 2011	

Tentative WG8 agenda for this week

Monday 24 January

14:00 – 17:30

Introductions, update on progress,
presentation on agricultural scenario

Tuesday 25 January

09:30 – 17:30

Presentations and discussion of agriculture,
marine, forest, and Arctic scenarios

Wednesday 26 January

11:00 – 17:00

Presentations and discussion of sensitivity
concept

Thursday 27 January

10:00 – 17:00

General discussion and work plan for 2011

We meet in Room F0707 today at 14:00