

**Working Group 8  
“Environmental Sensitivity”  
Progress Report**

**2<sup>nd</sup> EMRAS II Technical Meeting  
Closing Plenary  
29 January 2010**

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

# Participants

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

# 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 modeling exercises**

# Non-urban Scenarios

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

## Radionuclide inputs

- **Cs-137, Sr-90, I-131**
- **A uniform deposition of 1000 Bq/m<sup>2</sup> each**
- **Both wet and dry deposition**

# Seasons

- **Mid-winter (snow cover, frozen ground)**
- **Spring (no snow, fresh grass, seeded fields)**
- **Mid-summer (crops nearing maturity)**
- **Fall (crops have been harvested, bare ground but not frozen)**

## **Calculate radionuclide concentrations in:**

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

<b>Scenario</b>	<b>Plants</b>	<b>Animals or animal products</b>
<b>Lowland agricultural</b>	<b>Forage (fresh or dry), garden vegetables, fruits, root crops, grains, rice.</b>	<b>Milk (cheese), beef, lamb, pork, chicken, eggs</b>
<b>Alpine</b>	<b>Forage (fresh or dry), berries, mushrooms.</b>	<b>Milk (cheese), deer</b>



<b>Scenario</b>	<b>Plants</b>	<b>Animals or animal products</b>
<b>Temperate forest</b>	<b>Berries, mushrooms</b>	<b>Big game (deer, moose, elk), fish, small game (rabbits, birds),</b>
<b>Arctic</b>	<b>Forage (fresh or dry), lichens, berries, mushrooms</b>	<b>Reindeer or caribou, fish, milk, other game</b>

<b>Scenario</b>	<b>Plants</b>	<b>Animals or animal products</b>
<b>Shallow marine</b>	<b>Edible seaweed</b>	<b>Fish, crustaceans, molluscs</b>

## **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**

<b>Task</b>	<b>Deadline (X = completed)</b>	
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	
Final results	June 2011	
Final report		
Preparation of final report	End 2011	

# **Interim Working Group Meeting**

- **When? – June 2010**
- **Where? – Brussels, Piacenza (Italy),  
or Munich**