

**EMRAS II**  
**Reference Approaches for Biota Assessment**  
**Working Group 5**  
**“Wildlife Transfer Coefficient” Handbook**  
**MINUTES**

of the Fourth WG5 Meeting held at IAEA Headquarters, Vienna  
6 & 8 September 2010

and the

**Consultants Meeting on the Handbook held at IAEA Headquarters, Vienna**  
7 September 2010

IAEA Scientific Secretary	Working Group Leader
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Attending	
Name / Initials* / Email	Organization / Country
Mr Pal Anderson ( <i>PA</i> ) (pal.andersson@ssm.se)	Swedish Radiation Safety Authority (SSM), SWEDEN
Mr Nicholas Beresford ( <i>NAB</i> ) (nab@ceh.ac.uk)	Centre for Ecology & Hydrology (CEH), UK
Mr Justin Brown ( <i>JB</i> ) (J.Brown@nrpa.no)	Norwegian Radiation Protection Authority (NRPA), NORWAY
Mr Andreas Bollhoefer ( <i>AB</i> ) (andreas.bollhoefer@environment.gov.au)	Department of the Environment, Water, Heritage & the Arts (DEWHA) AUSTRALIA
Keum Dong-Kwon ( <i>KDK</i> ) (dkkeum@kaeri.re.kr)	Korea Atomic Energy Research Institute (KAERI), REPUBLIC OF KOREA
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Mr Ali Hosseini ( <i>AH</i> ) (Ali.Hosseini@nrpa.no)	Norwegian Radiation Protection Authority (NRPA), NORWAY
Mr Matt Johansen ( <i>MJ</i> ) (mjo@ansto.gov.au)	Australian Nuclear Science & Technology Organisation (ANSTO), AUSTRALIA

\*Initials used to refer to participants within minutes and actions as appropriate.

+ remote participation.

<b>Attending</b>	
<b>Name / Initials* / Email</b>	<b>Organization / Country</b>
Mr Ross Jeffree ( <b>RJ</b> ) (R.Jeffree@iaea.org)	International Atomic Energy Agency, Marine Environment Laboratory (IAEA-MEL)
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Ms Tamara L. Yankovich ( <b>TLY</b> ) (tamara.yankovich@src.sk.ca)	Saskatchewan Research Council (SRC), CANADA

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<sup>+</sup> remote participation.

## Meeting Objective

The aim of this (the fourth) EMRAS II Working Group 5 (WG5) Meeting was to discuss and peer review the first full draft (text with data tables) of the Technical Reports Series (TRS) Handbook on Transfer of Radionuclides to Wildlife.

The aim of the associated Consultants Meeting on the Handbook was to revise the Handbook subsequent to the EMRAS II WG5 Meeting, to consider the criteria for sub categorisation of wildlife groupings and to identify the remaining actions needed to complete the document.

## Meeting Plan

On the first day, **BJH** gave a short briefing of the recent activities carried out to prepare the draft which was sent out prior to the meeting to all registered WG5 participants. **NAB** then reviewed the inputs, treatment, categorisation and remaining QC issues. **TLY** described an analyses of the freshwater fish data.

Copies of most of the imminent special issue papers related to the wildlife handbook were made available. There was then a session where many constructive comments were received on the draft text of the Handbook.

The text was revised during the Consultants Meeting held on 8 September 2010 and issues / amendments / additions to the data tables were collated. Final plans for revision and submission were agreed.

On the second EMRAS II WG5 Meeting day, the revised Handbook was distributed, the ICRP transfer task group report was presented and some presentations were made (see the Meeting Agenda below) on recent scientific activities relevant to the Handbook. The updates on the new wiki<sup>1</sup> on radiological protection were demonstrated.

### ***Wildlife TRS Handbook***

The server location of the database has been changed and it is not currently available online, although it will be shortly using the same web address. The outputs are currently in the form of broad wildlife groups for terrestrial, freshwater, marine and estuarine ecosystems, based on the inputs into the database **at this stage**. Some wildlife groups will be revised to be more consistent (e.g., terrestrial invertebrates). Major (and dominating) sources of data for wildlife groups will be identified in the text. It was agreed that sub division of wildlife groups into sub categories will be presented where this can be justified. Some of the recently added wildlife groups for which few inputs have been made will be removed from the TRS tables but will still be accessible through the online database. Where justified, additional rows will be given for groups which are known to be unrepresentative (e.g., Rangifer, Se ‘hyper accumulating’ plants) as these data can significantly skew the wildlife group CR values. Text on the use of stable values is needed. The definition of coastal waters needs to be checked in TRS-422. There will be a section added on the use of the specific activity approaches for C-14 and H-3. The few values for C, H, K will be removed. Other actions for the text are noted within the text.

The CR values have been redefined to directly specify that we are referring to the whole organism and the relevant media for clarity, eg CR<sub>wo-soil</sub>. Each individual reference for the CR values will be listed.

As well as the CR tables, conversion factors for tissue specific data to whole body values are also included. This enables the use of CR values for edible tissues from monitoring programmes designed to assess radionuclide transfer to humans. **TLY** needs to check some values queried by participants and see if there is data for Ra in bone.

Actions arising from the consideration of the CR tables include:

1. Quality control:
  - Check plant transfer CR values, especially those with high CR values at present (**HvH**, **NAB**);
  - Further QC will be carried out in the CR tables by **CEH/EA/NRPA/TLY**;
  - All participants to check values in areas where they have particular expertise (communicate any observations by end October 2010).
2. Potential additional data sources:
  - (a) Australian data for naturals to enter (**AB**);
  - (b) Data on worms to identify sources (**MJ**);
  - (c) U transfer to aquatic plants (**HvH**);
  - (d) Fresh water mammals – musk rat data –**TLY** to identify;
  - (e) Aquatic mammal data from Finland (**PA**).

Glossary – **CEH** to prepare a draft by end Oct and **NIRS/SEPA** to comment and suggest terms etc. which should be defined by mid-November 2010.

The time line for Handbook revision and submission is as follows:

- Deadline for comments on the revised text – 12 October 2010.
- Deadline for data inputs into the database – end October 2010.
- The final draft of the Handbook will be sent out by the end of November 2010.

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<sup>1</sup> A wiki is a website that allows the easy creation and editing of any number of interlinked web pages via a web browser

- Deadline for comments on the revised handbook - end of December 2010.
- The final version of the Handbook will be submitted to the IAEA prior to the Third Technical meeting of EMRAS II (24–28 January 2011).

The importance of traceable, published CR values that can be referenced for assessments was recognised. The current intention is that the online database will be revised early in each year. Changes will be listed and a copy of all tables will be retained to maintain traceability.

The IAEA Officer responsible for the Handbook (*DMT*) commented during the meeting that the Final Draft of the Handbook should be ready by the end of 2010 to start the publication process which normally takes up to 6 months. This should be considered when fixing deadlines for the incorporation of new data and the preparation of the final draft.

### ***ICRP C5 Draft Transfer Report***

The draft text of the ICRP Transfer Task Group was presented by *JB*. The data are focused on the Reference Animals and Plants (RAPs) and not wildlife groups as in the Handbook. Since both documents are utilising the database, there is a considerable benefit of the publication of both documents at a similar time to avoid large discrepancies between the reports and the database. To ensure good communication, *BJH* will inform the ICRP C5 of the agreed timeline for the Handbook. Comments on the text should be provided to the ICRP by 1st October 2010.

### ***Science Presentations***

*KT* presented an analysis of Kd values from Japan and highlighted a potential overestimation in recommended Kd values derived from stable element data.

*RJ* presented recent work of the Monaco laboratory including studies to determine if phylogeny influences radionuclide transfer to marine organisms.

### **Meetings**

The next meeting of the EMRAS II WG5 will be during the annual (third) EMRAS II Technical Meeting, being held at IAEA Headquarters in Vienna, during the week of 24–28 January 2011. The further activities of the WG5 were briefly discussed and will include to: (i) continue updating the database with new data, either identified from literature or derived from research studies; (ii) critically evaluate which various criteria to identify the key data gaps such as the extent of transfer, dose conversion coefficients and releases from facilities, liaising with WG4 to use sensitivity analysis in the available models; (iii) further analysis of the CR database; and (iv) further consideration of the need for better info on Kd and way forward. Further ideas are welcome.

*BJH* thanked all participants for their valuable contributions and willingness to contribute the discussions. The Handbook is on schedule to be completed by the early 2011.

## WG5 MEETING AGENDA

<b>Monday, 6 September 2010</b>		
09:30	Welcome, agenda and *objectives	Diego Telleria (IAEA) Brenda Howard (CEH, UK)
10:00	Briefing on changes to the handbook text and tables Discussion on *handbook data <ul style="list-style-type: none"> <li>- Data inputs</li> <li>- Online database</li> <li>- Top level data tables</li> </ul> Sub divided tables	Nicholas Beresford, Brenda Howard (CEH, UK) Tamara Yankovich (SRC, Canada)
<b>12:30</b>	<b>LUNCH BREAK</b>	
13:30	Continued	
17:15	The development of a concentration ratio database for bushfoods in tropical Northern Australia	Andreas Bollhoefer (DEWHA, Australia)
17:45	Close	
<b>Wednesday, 8 September 2010</b>		
Transfer handbook consultants meeting	Discussions on the initial comments from EMRAS II WG5 <ul style="list-style-type: none"> <li>- Text amendment</li> <li>- Criteria for provision of data tables for lower level wildlife groups</li> </ul>	B Howard, N Beresford, T Yankovitch, J Brown, M. Johansen, H. Mulye (with other WG5 members if interested)
<b>Thursday, 9 September 2010 (pm)</b>		
<i>Handbook</i>		
13:00 – 13:20	Tasks and schedule for amended text	B. Howard
<i>Talks on transfer topics</i>		
13:20-14:00	*ICRP transfer group report with discussion to access report: <a href="http://www.icrp.org/docs/Transfer_Factors_for_RAPs-DRAFT_FOR_CONSULTATION.pdf">http://www.icrp.org/docs/Transfer_Factors_for_RAPs-DRAFT_FOR_CONSULTATION.pdf</a>	Justin Brown (NRPA, Norway)
14:00-14:20	Seawater-sediment distribution coefficients in estuarine areas	S Uchida and K Tagami (*NIRS, Japan)
14:20-14:50	Update on output from *IAEA-MEL experimental programme on phylogeny of bioaccumulation in marine biota	Ross Jeffree (IAEA, MEL)
14:50-15:00	News items	All

\* Indicates the name of the presentation given on the WG5 web page (<http://www-ns.iaea.org/projects/emras/emras2/working-groups/working-group-five.asp?s=8>).