5 COMMUNICATION AND LIAISON

5.1 Introduction

Effective communication with all stakeholders is an integral component of the Supervising Scientist Division's functions. Keeping traditional owners and other Aboriginal people living in the Alligator Rivers Region informed about SSD activities including the supervisory activities of the Office of the Supervising Scientist (***oss***) and the research and monitoring programs undertaken or managed by the Environmental Research Institute of the Supervising Scientist (***eriss***) is especially important. Communication with research partners and other stakeholders within government, industry, science and the general community is also vital in the context of the research and supervisory functions of the Division.

5.2 Research support and communication

SSD has been involved in community engagement activities such as festivals and school visits within local communities in Kakadu National Park and the Alligator Rivers Region. These activities strengthen SSD's relationship with local indigenous stakeholders, research organisations, non-governmental environmental groups and the general public.

General SSD communications activities are coordinated through the Business Support Unit and communication with indigenous stakeholders is managed by the Jabiru-based Community Liaison Officer (CLO) in conjunction with Jabiru Field Station and other SSD staff.

Events undertaken in the reporting period include community information, education and conference presentations. Specific and targeted liaison with traditional owners and other indigenous stakeholders continued to be a priority.

The 2009–10 program of community engagement activities included display booths at the Mahbilil Festival in Jabiru, interactive informal information sessions with local traditional owners and hosting visits at the Jabiru Field Station.

The SSD web site is another important means of raising community awareness of the work of the Division and providing public access to some of the Division's scientific data and reports such as the results of the SSD environmental monitoring program. Of note, all Supervising Scientist Reports, Research Reports and Technical Memoranda, and those Internal Reports that are not restricted or commercial-in-confidence, are now available online in PDF format.

5.2.1 Indigenous employment and consultation

Indigenous employment for activities such as field research projects gives SSD staff the opportunity to work alongside landowners on their country, sharing knowledge and gaining greater insight into traditional cultural values. It is also an opportunity for indigenous people

to gain first hand knowledge and valuable technical skills and understanding of SSD's research and monitoring program.

Having applied for permission to research on Aboriginal land, engaged the help of residents in undertaking fieldwork and invited the local Aboriginal people to view the work done by SSD, we have a responsibility to follow up with results of these projects. We do this in a number of ways. For example, the same water chemistry control charts that are posted on the SSD web site are taken by the Community Liaison Officer (CLO) to Aboriginal communities in the Alligator Rivers Region to show the levels of uranium and other things we measure in the local creeks. Explanation of the significance of the levels and any variations is provided to local residents in a 'hands-on' practical manner. The results are also presented at local communities and are published in the local newsletter.

SSD has maintained regular informal contact with indigenous communities in the Region including the Mirarr people – the traditional owners of the land on which Ranger and Jabiluka lie – affording greater opportunity to communicate our role and function and helping us keep the local communities well informed about our monitoring and research programs. Informal contact has also involved visits to and from local communities in the Region, including interested indigenous people observing our monitoring and research activities both in the field and in the laboratory.

SSD staff continued to collect bush tucker, complete permit applications and make regular contact with local Aboriginal organisations and communities.

The CLO liaises with stakeholders on a regular basis, including Energy Resources of Australia Ltd (ERA) community relations staff, Parks Australia staff, local Aboriginal corporations, the Northern Land Council and indigenous residents, to ensure there is a continuous flow of information on current SSD activities.

The SSD communications staff continue to make good use of the Jabiru Field Station mobile communications unit – an off-road trailer purchased to transport display materials to events and/or remote communities.

Regular meetings with the Gundjeihmi Aboriginal Corporation (GAC) have discussed matters such as employment, day labour payment details and updating of GAC's employment register. In the period, Mirrar people have worked 47 days on research and monitoring projects, including bush tucker collection and equipment maintenance and Jabiru Field Station ground and facilities maintenance.

Specific Aboriginal communications activities during the reporting period included:

- bush tucker collection with the women from Mudginberri (collected many fruits – yams, green plums and red and white apples);
- discussions about going out and collecting turtle meat (for the bioaccumulation project) with the Mudginberri women;
- continuing day labour on a regular basis;
- regular meetings between SSD staff and community members;

- permits for access to Aboriginal lands, such as Jabiluka permits, and other research work on Aboriginal lands continues with stakeholder and TO consultations.

Figure 5.1 SSD staff discuss research activities with local residents

An informal get-together was organised at Mudginberri Billabong for local residents to watch the Channel Billabong fish community survey. Lunch was provided and ***eriss*** staff provided information and answered questions. Residents viewed fish in their natural habitat through the ***eriss*** bubble boat. A similar activity was conducted at Sandy Billabong, with Parks staff and local indigenous people. A barbeque set the scene for inter-divisional interaction and discussion of ***eriss*** projects covered in the Parks-***eriss*** protocols.

A number of school tours of the Jabiru facility were organised with presentations on the role of ***eriss*** and its research activities. These included hosting a school group from West Arnhem College and the Junior Ranger program. The presentations were interactive and were tailored to the students' curriculum programs.

Figure 5.2 Schoolchildren from West Arnhem College attending a presentation on ecosystem protection at Jabiru Field Station

Figure 5.3 The Kakadu Junior Ranger program visits Jabiru Field Station

5.2.2 Research protocols for Kakadu National Park

Details of proposed 2010–11 SSD research and monitoring activities within Kakadu National Park were circulated to relevant stakeholders in April 2010, as required under the revised protocols agreed by the Director of National Parks and the Supervising Scientist in 2008.

The protocols define working arrangements for effective and timely communication between ***eriss*** and Parks Australia staff, the Kakadu Board of Management and traditional owners in relation to ***eriss*** research and monitoring activities within Kakadu National Park.

5.2.3 Internal communication

The Division supports effective internal communication between staff of all levels through regular staff and section meetings. Various working groups (eg Monitoring Support, Spatial Users and Technical Data Management) are convened as required to address important strategic business issues within the Division.

IiP (Investor in People) activities undertaken during 2009–2010 are described in Chapter 6.

SSD's internal newsletter *Newsbrief* is produced fortnightly and is available on the Intranet. It provides information on current Divisional activities in the Darwin and Jabiru offices, including articles on research, conferences attended, field trips and communication activities. Each SSD program reports on a selection of activities every sixth issue.

SSD continues to make extensive use of the Intranet. More than half the staff have received intranet training, and sections manage their own uploads and edits. The Intranet is used for new staff inductions and for important internal announcements. A review of the Division's Intranet site was undertaken during the 09–10 year.

The Spatial Sciences and Data Integration Group uses the Intranet to share its map collection with SSD staff. In addition, we now have continuous monitoring data from our telemetered stations in the Magela Creek catchment on the SSD intranet and available for staff to access as required. The data (which include EC, pH, turbidity, stage height, discharge and rainfall) are presented in the form of time-series plots enabling visual assessment of each parameter. The data are presented as reports and graphs accessible by clicking a station's name on a schematic map of the area around the minesite, and are updated daily after they have been downloaded from the stations.

5.2.4 Communication with technical stakeholders and the general community

Coordination of other communication and general public relations activities was facilitated by SSD staff throughout the year.

The Alligator Rivers Region Advisory Committee (ARRAC) and the Alligator Rivers Region Technical Committee (ARRTC) both held two meetings during the period. Further information on ARRAC and ARRTC activities is provided in Chapter 4 of this report.

Indigenous stakeholders and the traditional owners of Kakadu National Park are also kept informed on SSD activities through their involvement in these committees. Gundjeihmi Aboriginal Corporation (GAC) and the Northern Land Council (NLC) are both members of ARRAC. The Director of ***eriss*** is a member of the Kakadu Research Advisory Committee.

SSD hosted a display booth at Mahbilil (Jabiru Wind Festival) in September 2009 with a comprehensive collection of publications, posters, macroinvertebrates and microscopes (see photos on right).

The 'Friends of Fogg Dam' Field Day event provided an opportunity for staff from the Aquatic Ecosystem Protection program to present a macroinvertebrate display and answer questions from the community.

Figure 5.4 (above) Macroinvertebrate display at the 'Friends of Fogg Dam' Field Day. **Figure 5.5** SSD staff at Mahbilil.

These activities served to enhance awareness and understanding of the work and role of the Division and to raise SSD's profile within the local and wider community. These events also enabled SSD staff to provide information to local residents in a 'hands-on' practical manner.

5.2.5 Australia Day awards

Three Australia Day awards were made to SSD this year: The Landform Team for outstanding dedication by team members over a period of eighteen months to bring the monitoring system for the rehabilitation trial landform at the Ranger mine to operational completion, often under very challenging physical conditions; Ian Furner for outstanding service to the Supervising Scientist Division, the department and elsewhere in the Australian Public Service over a career of 30 years in both military and civilian areas; and Kim Cheng for exceptional performance and invaluable contribution to SSD's Ecotoxicology Program and outstanding commitment to development of the Ecotoxicology Laboratory Manager role.

5.3 National and international environmental protection activities

5.3.1 Revision of National Water Quality Guidelines

Two ***eriss*** research scientists, Dr Rick van Dam and Dr Chris Humphrey, are providing the technical coordination for the current revision of the *2000 Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (the Guidelines). The Guidelines, which constitute Guideline 4 of the National Water Quality Management Strategy, represent a key source document in Australia and New Zealand for managing natural water quality and protecting aquatic ecosystems. Six Working Groups have been established to oversee revisions to specific parts of the Guidelines. By July 2010, all Working Groups had met to determine initial revision tasks for 2010 and scope larger revisions for commencement in 2011. The technical coordination role primarily involves ensuring cross-cutting issues are addressed and integrated across the activities of the Working Groups. Drs van Dam and Humphrey also are members of four of the six Working Groups. ***eriss*** will continue to work with the Water Reform Division during 2010–11 on this project.

5.3.2 Basslink

SSD staff, as Australian Government representatives on the Gordon River Scientific Reference Committee, provided comment on the 2006–09 Basslink Review Report, a report evaluating the Gordon River Basslink Monitoring Program after three years of Basslink operations.

5.3.3 Northern Australian Water Futures Assessment (NAWFA)

The Northern Australia Water Futures Assessment is a multidisciplinary program being managed by the Environmental Water and Natural Resources Branch within DEWHA. The objective is to provide an enduring knowledge base to inform development of northern Australia's water resources, so that development proceeds in an ecologically, culturally and economically sustainable manner.

During 2009–2010, staff from ***eriss*** assisted the Department in two working groups convened to address the priority areas being covered by the Assessment. The names of the working groups and the respective ***eriss*** representatives are Dr Rick van Dam (Ecology) and Dr Renée Bartolo (Knowledge Base).

Each of these groups has:

- developed a work plan for acquisition of required new information;
- provided advice on existing information, knowledge and research;
- identified linkages with other Assessment Programs and relevant activities; and
- provided advice on new research/knowledge needs and made recommendations on priorities for future research.

More information about the NAWFA and the products that are being produced by the program can be found at www.environment.gov.au/water/policy-programs/northern-australia/index.html.

5.3.4 Tropical Rivers and Coastal Knowledge (TRaCK) Research Program

The TRaCK research hub headquartered at Charles Darwin University in Darwin is one of the major components of the CERF program being managed by DEWHA. Staff from ***eriss*** contributed to two of the research theme areas in the past year:

- Theme 4: Material Budgets. ***eriss*** is a collaborator in Project 4.1: Catchment water budgets and water resource assessment. The specific engagement is with Task 3 that involves flood inundation mapping for the Mitchell and Daly River catchments using a combination of radar and optical satellite imagery analysis. Landsat 5 TM and ALOS-PALSAR satellite imagery were acquired for the 2009 wet season to represent the maximum extent of inundation ('wettest' wet year).
- Theme 5: Biodiversity and High Conservation Value Aquatic Ecosystems (HCVAE). ***eriss*** is contributing to Project 5.8: Bioregionalisation conservation priorities and predictive models of aquatic biodiversity. The work involves contributing information and biological samples that will be used to identify areas or regions of high biodiversity and biological uniqueness.

  In May, ***eriss*** staff collected vegetation and biomass data for the Magela floodplain to provide mapping products that can be used for a project examining food webs on the Magela floodplain.

More information about TRACK can be found at www.track.gov.au/

5.3.5 Kakadu Research Advisory Committee

Dr David Jones and Dr Renée Bartolo were appointed as members of the reconstituted Kakadu Research Advisory Committee (KRAC). KRAC is a committee appointed by the Kakadu National Park Board of Management that advises the Board and Director of National Parks on science research issues in the Park. The first meeting of the new committee was held on 3–4 June 2010 at the Bowali Visitors Centre at Jabiru. The agenda comprised finalising the terms of reference defining the scope of the committee's remit, initiating the development of a framework for identifying and prioritising key research needs for the Park, and reviewing changes proposed for the assessment and approvals process for applications to conduct research in the Park. It was agreed that at least one (and usually two) meeting of the committee be held each year.

5.3.6 Special Feature in the *Journal of Spatial Science*

eriss Research Scientist, Dr Renée Bartolo, along with Dr Kasper Johansen from the University of Queensland, compiled and edited a Special Feature for the *Journal of Spatial Science* focused on Geographic Object-Based Image Analysis (GEOBIA). The Special

Feature includes eight articles from around the world focused on the theory and applications of GEOBIA in the field of remote sensing analysis and was published in June 2010.

5.3.7 EPBC compliance audits

oss staff provided assistance to the Approvals and Wildlife Division of the Department in the conduct of compliance audits against approval conditions issued under the *Environment Protection and Biodiversity Conservation Act*, including leading an audit of the McArthur River Mine in April 2010.

5.3.8 Rum Jungle collaboration

The Rum Jungle legacy uranium and copper mine site is located close to the town of Batchelor, approximately 80 km south of Darwin. Rehabilitation work was initially undertaken between 1982 and 1986. However, the site has remained an ongoing source of metal load to the Finniss River, as well as being in a state that is not currently suitable for return to the local traditional owners. In 2008, the Rum Jungle Technical Working Group (RJTWG) was formed to progress and implement:

- environmental maintenance activities;
- continuation of appropriate environmental monitoring programs;
- development of contemporary site rehabilitation strategies for the site.

The group consists of representatives from the Supervising Scientist Division (SSD), NT Department of Resources (formerly Department of Regional Development, Primary Industry, Fisheries and Resources), NT Department of Natural Resources, Environment, the Arts and Sport (NRETAS), Australian Government Department of Resources, Energy and Tourism (DRET) and the Northern Land Council (NLC). Mr Alan Hughes (Supervising Scientist) and Dr David Jones (Director ***eriss***) are the SSD representatives.

In the 2009 federal budget an allocation of $7 M of special purpose funds was made to progress assessment of the site over a period of four years, with the objective of developing a costed rehabilitation plan consistent with contemporary best practice. The program is being managed by the NT Government Department of Resources (DoR) under the terms of a ‘National Partnership Agreement (NPA) on the management of the former Rum Jungle mine site’ between DoR and the Australian Government Department of Resources Energy and Tourism. The RJTWG will continue to provide technical advice and oversight of the projects that will be commissioned that address the terms of the NPA.

During 2009–10, SSD produced reports on two projects (described in the 2008–09 Annual Report) that had previously been commissioned by DRET to define the current state of surface and groundwater quality on the Rum Jungle site. The information contained in these reports will provide the basis for ongoing work by consultants engaged to develop a groundwater transport model for the site and to calculate loads of metals that are currently being exported from the site during the wet season.

5.3.9 Other contributions

Dr David Jones was a member of the panel of experts that reviewed the CSIRO Water for a Healthy Country Flagship program in October 2009. He also provided independent review of the inland acid sulfate soils characterisation reference document being developed by the Murray Darling Basin Authority.

Supervising Scientist Mr Alan Hughes is a member of the Mt Todd Minesite Rehabilitation Reference Group that has been established by the Northern Territory Department of Resources. The Supervising Scientist provides an independent scientific perspective to the group which is a community consultative forum for discussing environmental management issues at the Mt Todd minesite near Katherine. Meetings of this group are typically held annually following the wet season.

Mr Hughes has been appointed by the Northern Territory Minister for Natural Resources, Environment and Heritage as a member of the Water Resources Review Panel, under the NT *Water Act* as the representative under the category of Mining. The Review Panel is required to advise the Controller of Water Resources and the Minister in assessing the number of appeals regarding licensing decisions against Water Allocation Plans and Bore Construction Permit refusals in the Northern Territory. The panel has not been convened to consider any relevant issues since Mr Hughes appointment to the panel.

In January 2010, SSD hosted two IAEA delegates from Mongolian Nuclear Energy Agency as part of a program to assist them in gaining an understanding of how the uranium mining industry operates and is regulated in Australia. Visits were scheduled for different operations in both the Northern Territory and South Australia. SSD hosted the NT portion of the visit while the SA government hosted their visit to SA. In the NT the delegates were shown around SSD facilities in Darwin where they held discussions with key staff before heading out to field visits of Ranger Mine and the Jabiru Field Station (JFS) to gain an understanding of operational mining issues from ERA and to observe the monitoring programs undertaken by SSD.

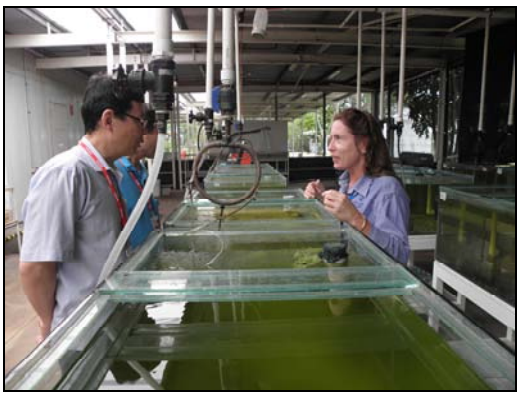

Figure 5.6 JFS Manager Wendy Murray shows the IAEA delegates around the Jabiru Field Station

5.4 Science communication (including conferences)

Results of research and investigations undertaken by the Supervising Scientist Division are made available to key stakeholders and the scientific and wider community through publication in journals and conference papers, and in a range of in-house journals and reports including the Supervising Scientist and Internal Report series – for detailed reporting on scientific projects – and the Supervising Scientist Note series used to showcase specific

projects to a wider audience. Other media such as posters and educational or promotional materials are also produced to suit specific requirements or events.

In addition, a number of the Division's staff contribute to external scientific, technical and other professional organisations, including various editorial boards and panels.

The complete Supervising Scientist Report series is available in PDF format on the SSD web site – the move towards electronic distribution supports the Department's policy of reducing its environmental footprint.

A review of the web site is conducted annually so that all information remains current and relevant. The web site subscription facility – incorporating an automatic email notification when a new SSD publication is released – continues to improve the level of service to our stakeholders.

SSD staff presented papers at a number of important national and international conferences during the reporting period:

- 5 papers at the 13th Australasian Society for Ecotoxicology Conference, University of Adelaide, September 2009
- 1 paper at the Combined Australian Entomological Society's 40th AGM & Scientific Conference and Society of Australian Systematic Biologists & 9th Invertebrate Biodiversity and Conservation Conference, Darwin, September 2009
- 1 paper at the 4th International Mine Closure Conference, Perth, September 2009
- 3 papers at the Australian Society for Limnology, Alice Springs Convention Centre, September/October 2009
- 1 paper at the Surveying and Spatial Sciences Institute Biennial International Conference, Adelaide, September/October 2009
- 1 paper at the International Minewater Conference, Pretoria, South Africa, October 2009
- 2 papers at the Australasian Radiation Protection Society Conference, Fremantle, October 2009
- 2 papers at the AusIMM International Uranium Conference. Adelaide, June 2010

SSD staff attended the 11th International Minewater Conference held in Pretoria in October 2009 and the Processing of Low Grade Uranium Ores workshop hosted by the International Atomic Energy Agency in Vienna in March 2010. Participation in international events allows staff to share their knowledge and expertise with peers and maintain awareness of international best practice in relevant areas. Participation is also seen as important in allowing the Supervising Scientist Division to maintain its profile as a part of the broader scientific and technical community.

eriss has continued to contribute to the Kakadu National Park Landscape Change Symposia series being run by Parks Australia. The aims of the symposia are to serve as a forum for knowledge exchange between stakeholders in the Kakadu region, including identifying management issues, emerging threats, knowledge gaps and research needs pertaining to landscape management at local, regional and national scales.

Publications Manager Ann Webb, in conjunction with Steve Winderlich, SallyAnn Atkins and Mim Jambrecina of Parks Operations and Tourism Branch, Kakadu National Park, prepared three more reports in the Kakadu National Park Landscape Symposia Series 2007–2009 for publication in the SSD Internal Report series and also on the SSD web site (www.environment.gov.au/ssd/publications/ir/index.html). Reports on weed management, climate change and fire management have now been completed – they are Internal Reports (IR) 565, 567 and 566 respectively. A report on management of feral animals is forthcoming.

A full list of papers and reports published during 2009–10 is provided in Appendix 2. Papers presented at national and international conferences are listed in Appendix 3.

SSD hosts researchers and visitors from other organisations to undertake collaborative funded projects, for sabbatical periods, or to present seminars or training workshops (Table 5.1).

TABLE 5.1 RESEARCHERS AND OTHER VISITORS, 2009–10

Activity	Visitor/organisation	Date
Field sediment uranium toxicity project	Dr Stuart Simpson, CSIRO Centre for Environmental Contaminants Research	December 2009
Impact of extreme rainfall events on stability of the rehabilitated Ranger landform using the CAESAR Landform Evolution Model	Professor Tom Coulthard, University of Hull	12–24 October 2009
Impact of extreme rainfall events on rehabilitated landform – application of CAESAR to mine-impacted catchments and erosion monitoring/modelling activities (Tin Camp Creek)	Associate Professor Greg Hancock, The University of Newcastle NSW	19–23 October 2009; 10–14 May 2010
Bedload fluxes in Ngarradj Creek catchment Geomorphic characterisation of Gulungul Creek catchment Geoecologic impacts of Cyclone Monica on *Allosyncarpia ternata* rainforest in Ngarradj Creek catchment Extreme event Impacts on the island anabranching East Alligator River	Professor Wayne Erskine, The University of Newcastle NSW, Ourimbah Campus	1 January – 30 June 2010
Workshop on Bayesian methods for determining hazardous concentration in ecotoxicology	Dr David Fox, Director, Australian Centre for Environmetrics, The University of Melbourne	December 2009
Seminar on Radiological protection of the environment: concepts, approaches, and work towards national guidance	Dr Che Doering, Australian Radiation Protection and Nuclear Safety Agency	February 2010

In 2009–10, ***eriss*** staff supervised three post-graduate research projects:

- The influence of dissolved organic carbon on the bioavailability and toxicity of metals to tropical freshwater biota (PhD, The University of Queensland)
- An evaluation of image and field data for vegetation community mapping in tropical savannas (PhD, The University of Queensland)
- Metal resistance in bacteria (PhD, Charles Darwin University)