

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.

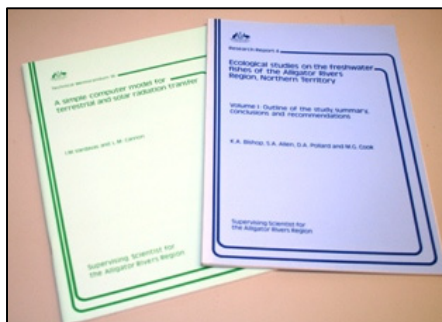
General SSD communications activities are coordinated through the Business Support Unit and communication with indigenous stakeholders is managed by the Jabiru-based Aboriginal Communications Officer in conjunction with Jabiru Field Station and other SSD staff.

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 2008–09 program of community engagement activities included display booths at the Mahbilil Festival in Jabiru and the AusIMM conference in Darwin, 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 are now available online in PDF format.

An annual website review has been implemented; research and monitoring sections have been updated.



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.

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 more opportunity for understanding of 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.

The Jabiru Field Station now has a mobile communications unit enabling the transport of display materials to events and/or remote communities. The trailer and the towing vehicle are identified by large magnetic badges showing the SSD logo.

The same weekly water chemistry monitoring results that are available on the SSD website and are presented at local communities have also been published in the Jabiru electronic newsletter, *Kakadu Community Notice*.

In November, Cannon Hill residents expressed concern to the ACO about two-headed long necked turtles – they thought they might be a result of mining activity. Water and sediment samples were collected by the Jabiru Field Station and analysed by the Environmental Radioactivity Program. By early January 2009, SSD was able to reassure the community that there were no adverse mine-related effects. Jabiru Field Station staff will follow up this work, collecting long neck turtles and magpie geese with Cannon Hill residents later in 2009 for analysis.



Figure 5.1 Fieldwork with local Aboriginal people

During 2008–09, SSD employed nine Aboriginal people through the Gundjeihmi Aboriginal Corporation to assist with research and monitoring projects, including pop-netting, bush tucker collection and equipment maintenance, and Jabiru Field Station ground and facilities maintenance.

Students involved in the Junior Ranger project visited the Field Station in November to learn about the environmental monitoring and research activities SSD undertakes. In March, the Aboriginal Communication Officer gave a careers talk to 20 indigenous students at the Jabiru Area School about SSD.

An Aboriginal communications procedure has been completed which includes an outline of the role of the Aboriginal Communication Officer.

Cross-cultural training for SSD staff to enable more effective communication and working relations with indigenous people continues to be provided at regular intervals. The most recent course was run in May 2009.

5.2.2 Research protocols for Kakadu National Park

Details of proposed 2009–10 SSD research and monitoring activities within Kakadu National Park were circulated to relevant stakeholders in April 2009, 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.

During the year, the permit system to undertake research at Jabiluka, Bowerbird Billabong and Ranger mine has been simplified, thus expediting project work by SSD staff.

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. The functions of the Spatial Users and Technical Data Management groups were subsumed by the Spatial Sciences and Data Integration Program created in January 2009.

iIP (Investor in People) activities undertaken during 2008–2009 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.

SSD continues to make full use of the Intranet. For example, the Spatial Sciences and Data Integration Program 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 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. More than half the staff have received intranet training and sections manage their own uploads and edits. A review of the Division's Intranet site is planned for the 09–10 year.

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.

An information booth was hosted at the AusIMM Uranium Conference in Darwin in June 2009. The SSD brochure and pull-up banner were re-designed and updated with a new selection of images – the two promotional items were unveiled at AusIMM.

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.

The Mahbilil (Wind Festival) at Jabiru was the major community engagement activity for the period. SSD's display at Mahbilil included a self-help desk featuring monitoring results on the SSD web site and the DVD 'Our place', demonstrations of a Geiger counter and an alpha-detector used by the Environmental Radioactivity Program to detect alpha, beta and gamma rays emanating from general household items compared with uranium ore from Ranger, the PAN-*eriss* research protocol showing our future research program in Kakadu National Park, and a presentation on macroinvertebrate sorting and identification further illustrated by a large fish tank.

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

In January, Dr Chris Humphrey was a recipient of a departmental Australia Day award for outstanding contribution over two decades to the development of best practice methods for aquatic biological monitoring and to the last major rewrite of the Australian and New Zealand Water Quality Guidelines.

Dr Humphrey has spent the past 26 years investigating tropical freshwater ecosystems of northern Australia, with much of this time as leader of *eriss*'s Aquatic Ecosystem Protection Program which undertakes the scientific research required to develop, implement and refine through time biological and chemical programs to monitor and assess the impact of mining upon the aquatic ecosystems of the Alligator Rivers Region.

In 1996, *eriss* was given the responsibility of revising the Australian and New Zealand Water Quality Guidelines, a task that took five years to complete. Dr Humphrey was technical coordinator of the entire Guidelines revision process for the period 1999 to 2001 as well as being lead author of the section of the aquatic ecosystems chapter on biological assessment, and co-author of the introductory chapter establishing the water quality management framework.

5.3 National and international environmental protection activities

5.3.1 Environmental radiation protection

A seminar on the Supervising Scientist's work at the rehabilitated Nabarlek uranium mine in Western Arnhem Land was given at the German Radiation Protection Agency's office in Berlin-Karlshorst by a Supervising Scientist Division employee. The visit at the German Radiation Protection Agency followed an invitation to present at the Uranium Mining and Hydrogeology Conference of the Technische Universität, Bergakademie Freiberg, Germany. The German Radiation Protection Agency is involved in the rehabilitation of liabilities left behind by the Soviet-German uranium mining operations in Saxony and Thuringia before the German reunification, and common radiation related issues associated with uranium mine rehabilitation were discussed.

5.3.2 Revision of National Water Quality Guidelines

Two *eriss* research scientists, Dr Rick van Dam and Dr Chris Humphrey, assisted the Department's Water Reform Division (Water Quality Section) to develop a proposal to revise 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. The process to determine the scope of the revision of the Guidelines involved a targeted stakeholder consultation process during 2008, including a stakeholder workshop in Canberra in December 2008. Subsequently, a small working group comprising Departmental (including *eriss*), New Zealand Ministry of Environment and South Australian Environment Protection Authority personnel developed a detailed Scope of Work for the revision. The revision proposal was approved in May 2009 by the Environment Protection and Heritage Council Ministerial Council, and the revision is expected to commence in mid to late 2009. *eriss* will continue to work with the Water Reform Division during 2009–10 on this project.

5.3.3 Basslink

SSD staff, as Australian Government representatives on the Gordon River Scientific Reference Committee, provided comment on the 2007–08 Basslink Monitoring Annual

Report and comment on proposed changes to the ‘ramp-down’ rule with respect to the effects of seepage erosion on the banks of the Gordon River (Tasmania).

5.3.4 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

Staff from *eriss* have been assisting the Department in three 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 Dene Moliere (Water Resources), Dr Rick van Dam (Ecology), and 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.

5.3.5 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* are contributing to three of the research theme areas:

- Theme 1: Scenario Evaluation. *eriss* is contributing to Project 1.4: Knowledge integration and science delivery. The work involves contributing Digital Elevation Models (DEMs) that underpin catchment water flows analysis and other spatial data and providing advice and support on aspects of spatial data analysis.
- 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.
- 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.

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

5.3.6 Special Issue of the Australasian Journal of Ecotoxicology

eriss Research Scientist, Dr Rick van Dam, compiled and edited a special issue of the *Australasian Journal of Ecotoxicology*, focusing on Tropical Ecotoxicology in Australasia. The issue includes eight articles describing soil or water quality related research from Australia and south-east Asia, and is expected to be published in October 2009.

5.3.7 EPBC Compliance Audits

OSS staff provided assistance to the Approvals and Wildlife Division in the conduct of compliance audits against approval conditions issued under the Environment Protection and Biodiversity Conservation Act, including leading the following audits:

- Fortescue Metals Cloudbreak Mine – December 2008
- Territory Resources Frances Creek Mine – June 2009

5.3.8 Rum Jungle collaboration

The Rum Jungle mine site is located close to the town of Batchelor. Mining for uranium, copper, nickel and lead occurred between 1954 and 1971. Rehabilitation was undertaken on the site between 1982 and 1986 and additional works since 2003. 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, NT Department of Regional Development, Primary Industry, Fisheries and Resources, NT Department of Natural Resources, Environment, the Arts and Sport, Commonwealth Department of Resources, Energy and Tourism (DRET) and the Northern Land Council. Mr Alan Hughes (Supervising Scientist) and Dr David Jones (Director *eriss*) are the SSD representatives.

During 2008–09, SSD was commissioned by DRET to undertake a comprehensive assessment of groundwater on the site since almost 20 years had elapsed since the last sampling and analysis had been done of groundwater monitoring bores across the site. This work built on an earlier project conducted by SSD to collate all of the available bore data into a GIS-database and to assess the status of contemporary knowledge about groundwater. Bores to be sampled were identified using a combination of water quality data from historical records, representation of the major rock units present on the site, and proximity to waste rock dumps. The final report is due in September 2009.

SSD was also commissioned by DRET to instrument two surface water sites to obtain continuous measurements of flow, EC and pH and to acquire grab sample water quality data to characterise changes in metal concentrations in runoff during the 2008–09 wet season. Staff from the environment section of Compass Resources Ltd provided vital on-ground assistance by collecting fortnightly samples for analysis during the wet season. The results obtained from this work will be used to better define the requirements for an ongoing program of surface water monitoring at the site.

5.3.9 Global Acid Rock Drainage (GARD) Guide

Dr Jones was a member of the International Advisory committee for the development of the Global Acid Rock Drainage (GARD) Guide, sponsored by the International Network for Acid Prevention (INAP). INAP is an industry association with membership comprising nine of the world's largest mining companies.

The GARD Guide is intended to be the premier international state-of-the-art summary of best practices and technology to assist mine operators and regulators to address issues related to the oxidation of mine waste containing sulfide minerals. The Guide deals with the prediction, prevention management and treatment of drainage produced from sulfide mineral oxidation, often termed 'acid rock drainage' (ARD). It also addresses leaching of metals caused by sulfide mineral oxidation.

The Guide has been produced in a web-based wiki format with major subject headings and hyperlinks to more detailed topics – www.gardguide.com/index.php/Main_Page.

5.3.10 Best practice study tour of Canada and Brazil

oss staff undertook an information gathering tour of uranium mining operations in Saskatchewan, Canada, and in Bahia, Brazil, in February/March 2009. The purpose of this trip was to meet with both the regulatory authorities and mining companies operating in these regions to see how operations were managed and regulated and to assist in benchmarking approaches undertaken in the Alligator Rivers Region. The trip also provided an opportunity to visit and assess underground mining operations in Canada, and a uranium Heap Leach Facility in Brazil (currently the only operational uranium heap leach facility in the world), techniques both of which are currently under consideration for operations at Ranger.

In Canada, *oss* was hosted by the Canadian Government through the Canadian Nuclear Safety Commission (CNSC) and by Cameco who own and operate a number of facilities in the northern half of Saskatchewan.

During the visit *oss* held discussions with CNSC and Cameco staff on a number of issues including best practice regulation and environmental management, and undertook a tour of operations at Cameco's Rabbit Lake underground mine.

In Brazil, *oss* was hosted by the Brazilian Government through the Comissão Nacional de Energia Nuclear (CNEN) who is responsible for the regulation of uranium mining and nuclear power plants throughout Brazil.



Figure 5.2 *oss* staff inspecting the discharge compliance point at Cameco's Rabbit Lake operations, Saskatchewan, Canada



Figure 5.3 Stockpiling of ore on the heap leach pad at Caetite uranium mine, Bahia, Brazil

During the visit *oss* held discussions with CNEN staff and operators of the worlds only uranium heap leach facility on site near Caetite, Bahia state, and at the CNEN head office in Rio de Janeiro, to gain a better understanding of the issues relating to the operation of uranium heap leach facilities. *oss* staff also gave presentations to CNEN and to the operators of the heap leach facility to assist in understanding our roles and our information needs.

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 now available in PDF format on the SSD web site – the move towards electronic distribution supports the Department's policy of reducing its environmental footprint.

SSD staff helped organise and present at various local conferences, workshops, seminars and lectures, both at our facilities and in partnership with other research organisations and professional bodies, illustrating our commitment to the advancement of professional practice and communication of our work. It is also an important part of our contribution to the local scientific and professional communities. Specifically, SSD staff were involved in organising and participating in the Kakadu National Park Landscape Change Symposium Series, the 14th Australasian Remote Sensing and Photogrammetry conference held at the Darwin Convention Centre in September 2008, and a stakeholder workshop in Canberra in

December to identify revision needs for the Aust/NZ guidelines for fresh and marine water quality (see Section 5.3.2).

SSD staff presented a number of papers at important national and international conferences:

- ten papers were presented at the 5th Society of Environmental Toxicology and Chemistry (SETAC) World Congress in Sydney in August 2008,
- seven papers were presented at the 14th Australasian Remote Sensing and Photogrammetry Conference in Darwin in September/October 2008,
- seven papers were presented at the 10th South Pacific Environmental Radioactivity conference in November 2008 in Christchurch, New Zealand.
- two papers were presented at the AusIMM International Uranium Conference in Darwin in June 2009.

Other events at which SSD staff presented papers included:

- Coast to Coast '08 in Darwin and at the Kakadu Landscape Management Symposia, both August 2008;
- the 14th Meeting of the International Humic Substances Society (on a river boat between Moscow and St Petersburg) and the Uranium, Mining and Hydrogeology conference in Freiberg, Germany (both September);
- the inaugural Asia Pacific Spatial Innovation conference in Canberra (November), and
- Securing the Future and 8th International Conference on Acid Rock Drainage, Sweden (June)

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. *eriss* staff participated in the Climate Change workshop held in Jabiru on August 6–7, 2008, with Dr David Jones presenting an invited discussion paper on effects of extreme events.

The AusIMM International Uranium Conference was held in Darwin on 10–11 June 2009. The conference focused on a range of technical issues associated with the uranium exploration and mining industry in Australia and globally. SSD had a booth in the conference exhibition to showcase our recently revised banner, brochure and posters, and our publications. The conference also provided a valuable opportunity to raise SSD's profile within the uranium industry and for SSD staff to meet and communicate with a range of other government and industry stakeholders. There was considerable interest in the work of SSD (especially from international delegates) and a range of enquiries from delegates were dealt with including what types of research and commercial activities are undertaken by SSD, and to what extent are Traditional Owners involved in the day-to-day regulation of Ranger and how does SSD ensure that their interests are being addressed. SSD staff also attended and presented papers at both the main conference and a workshop on 'Radiation in Mining and Exploration' immediately following the conference.

Staff of the Division have published articles in a wide range of external journals and presented papers and posters at 20 conferences and workshops. A full list of papers and reports published during 2008–09 is provided in Appendix 2. Papers presented at national and international conferences are listed in Appendix 3.

SSD staff participated in several international conferences, seminars and workshops during 2008–09 (Table 5.1). Attendance at the majority of these events was funded, either partly or fully, from external sources. 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.

TABLE 5.1 INTERNATIONAL CONFERENCES, SEMINARS AND WORKSHOPS, 2008–09

Event	Location	Date
Uranium Mining and Hydrogeology V conference of the Technische Universität Bergakademie Freiberg	Freiberg, Germany	September 2008
14 th meeting of International Humic Substances Society	Moscow, Russia	September 2008
International Atomic Energy Agency technical meeting on Implementation of sustainable global best practices in uranium mining and processing	Vienna, Austria	October 2008
10th South Pacific Environmental Radioactivity Conference, SPERA 2008	Christchurch, New Zealand	November 2008
Securing the Future and 8th International Conference on Acid Rock Drainage	Skelleftea, Sweden	June 2009

In 2008–09, *eriss* staff supervised a number of post-graduate research projects involving students from Charles Darwin University and other universities around Australia. *eriss* also hosts researchers from other organisations to undertake collaborative funded projects, or for sabbatical periods.

Dr David Jones has continued as the departmental representative on the steering committee for the Leading Practice Sustainable Development Program for the Mining Industry funded and managed by the Australian Government Department of Resources, Energy and Tourism. The program was established in 2005 to support the sustainable development of the Australian minerals industry, and its outputs are a series of booklets documenting leading practice in sustainable development principles in most of the major social and environmental management areas of concern to the community and to the industry.