Review of the NSW Environmental Trust's Environmental Research Program

NSW Chief Scientist & Engineer

May 2014

16 May 2014

The Hon. Rob Stokes MP
Minister for the Environment and Minister for Heritage
Parliament House
SYDNEY NSW 2000

Dear Minister,

Review of the NSW Environmental Trust's Environmental Research Program

On 19 December 2013, the former Minister requested that I undertake an independent review of the NSW Environmental Trust's Environmental Research Program.

This Review is in line with the Trust's governance framework to ensure the Environmental Research Program is delivering the desired outcomes.

The Review has now been completed and the final report is attached.

Overall, the Environmental Research Program is funding some good quality research, with the results being disseminated to a range of stakeholders, including state and local government agencies, research organisations, not-for-profit organisations, industry and the general public. The results are being used in various ways to the benefit of the environment of NSW.

In presenting this report, I wish to acknowledge the ready assistance of the Trust staff and relevant Technical Committee, end-users and grantees who responded to surveys and interviews and the work of staff in the Office of the Chief Scientist and Engineer conducting this review.

Yours sincerely,

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Mary O'Kane
Chief Scientist & Engineer

EXECUTIVE SUMMARY

The NSW Environmental Trust's Environmental Research Program (ERP) allocates funding of around $1 million annually with the aim of supporting research projects that help address environmental problems in NSW.

For a program with a relatively small budget and State-based objectives, the ERP is fiercely competitive. In 2013 it attracted 189 Expressions of Interest. Its success rate since 2010 has been less than 10%.

This review, which was conducted by the Office of the NSW Chief Scientist & Engineer under the supervision of the NSW Chief Scientist & Engineer, follows an independent review of the ERP by the Australian Academy of Science in 2005 and a performance audit by the Auditor-General of NSW of environmental grants administration which of course included the Environmental Research Program. Both investigations noted the relevance of the ERP to the State's environmental research priorities.

This review of the ERP covered all aspects of the program but put a special focus on outcomes and impact on end-users.

On the whole, from the analysis, the evidence suggests the ERP has delivered good quality research, contributed to the development of the State's environmental research capabilities and, probably most importantly, given the ERP's objectives, provided solutions to some particular environmental problems. Several end-users consulted appreciated the research carried out on the projects they were connected with.

However, the Review suggests that the Trust could further improve and enhance the ERP to drive even greater impact, including by:

- implementing a range of improvements to the grants administration and processes
- working to encourage stronger relationships between (potential) grantees and end-users
- working with researchers to boost dissemination of research outputs

The Review also suggests that the Trust give consideration to whether the funding in the ERP could be deployed more effectively in other ways to bring research expertise to bear on environmental problems in NSW.

RECOMMENDATIONS

Recommendation 1: That the Trust improves processes associated with the ERP, including the following:

- publicise Technical Committee vacancies, and fill positions as per the requirements of the Act – i.e. that the Technical Committee include at least one member from community groups and at least one member from industry
- consider applying to include the ERP on the Australian Competitive Grants Register to extend funding for ERP grants that go to universities
- rename 'Seeding Grants' as 'Scoping Grants' better to reflect their purpose of funding proof of concept or scoping projects
- re-visit the issues of eligibility for grants under the ERP in order to ensure that the criteria reinforce what the Trust is trying to achieve through the program
- amend applications guidelines to include a summary of how they differ from previous years
- move to a fully-online grants system
- amend application forms to:
  - require a 100-word or similar project summary for the EOI which focuses the applicant and provides a useful basis for initial assessment
  - ask the applicant if ethics approval (human research ethics, animal research ethics and gene technology approval) is required and, if so, how it will be obtained
- seek the assistance of the two scientific learned academies in Australia – the Australian Academy of Science (AAS) and the Australian Academy of Technological Sciences and Engineering (ATSE) – to develop and update annually an arms' length peer reviewer process and database
- applicants at the invited application stage be given the opportunity to comment on peer reviewers' remarks and that this information be used in the assessment and selection process
- establish an appeals mechanism for applicants to appeal on process grounds
- ensure contracts with grantees stipulate that no monies will be paid and the project cannot commence until the Trust has been provided proof that all necessary ethics approvals have been obtained
- require grantees as a condition in the grant contract to make all research data from grants available through the Trust website
- use the Trust Monitoring & Evaluation form for ERP.

Recommendation 2: That the Trust makes changes to the ERP to maximise impact and end-user take-up of research outcomes and results by:

- dedicating resources to relationship building and brokering including online systems to link researchers and end-users
- increasing emphasis on end-user consultation and relevance during the application and assessment process
- building into the grant contract key performance indicators around end-user engagement and communication and dissemination of research results and related data including requiring applicants to outline a budgeted end-user engagement and communications strategy in their full application.

Recommendation 3: That the Trust consider if it might achieve the aim of supporting research projects that help address environmental problems in NSW more effectively in other ways, in particular examining if the use of its funds is better devoted to brokering relationships between those responsible for solving environmental problems in NSW with organisations which have the expertise to tackle these problems – and then supporting these relationships with scoping grants to help leverage larger funds from larger research granting schemes.

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1. INTRODUCTION

1.1 THE ENVIRONMENTAL RESEARCH PROGRAM – OVERVIEW

The Environmental Research Program (ERP) is the main competitive research grants program of the NSW Environmental Trust, a statutory body established under the *Environmental Trust Act 1998* to, among other things, encourage and support environment rehabilitation and pollution-reduction projects and promote relevant research and education. The Trust is administered by the Office of Environment and Heritage (OEH) in the Department of Planning and Environment. The Trust is chaired by the Minister for the Environment.

The aim of the ERP is "to support research projects that help address environmental problems in NSW". Its objectives are to:

- "generate new knowledge or information to facilitate local solutions to environmental problems
- discover new methods of operation for NSW industries that are less harmful to the environment
- provide knowledge about general environmental problems and/or
- assess environmental degradation."
  http://www.environment.nsw.gov.au/grants/research.htm

Total program funding available is of the order of $1,000,000 per year.

Priorities for the ERP are set and published each year as part of the Guidelines for Applicants. In recent years, the priorities have been based on goals in *NSW 2021*.

Two types of grants have been offered under the ERP:

1. Major Research Grants which provide funding for research projects
2. Seeding Grants which provide funding of up to $20,000 for a component or components of a project that need to be tested and resolved before a full project can be developed for funding (by the Trust or other funding body). This is not considered a small grants program but a leveraging mechanism.

Organisations eligible to apply for the ERP grants are the following:

- community organisations
- research institutes (public and private) including universities and government organisations that have requisite capabilities and responsibility to undertake research programs (http://www.environment.nsw.gov.au/resources/grants/130834ApGdeRd.pdf).

The grants are very competitive. Success rates for the Major Research Grants from Expression of Interest (EOI) stage to grants awarded have been below 10% since 2010 and are only slightly higher for the Seeding Grants.

1.2 PREVIOUS REVIEWS

1.2.1 Australian Academy of Science Review 2005

The Australian Academy of Science (AAS) reviewed the ERP in 2005. The aim of this review was to help set the future direction of the ERP; to understand how and whether the funded projects have resulted in an improvement to the environment in NSW; and to identify and understand the variety of ERP projects and their reach into the wider community.

The AAS evaluation was largely supportive of the administration of the granting process by the NSW Environmental Trust, supported the two-stage process involving EOIs but made suggestions for improvement based on the Better Practice Guide of the Australian National Audit Office for administration of grants[1].

The Academy concluded that the "Environmental Research program is funding outstanding research …The contributions to scientific knowledge from these projects are exceptional and the high degree of collaborative, multidisciplinary and multi-institutional approaches to the research is to be commended" [1]. The AAS proposed a number of enhancements to the ERP. These particularly concerned translation and communication of results, data access, and brokering. The suggestion of a new funding category for smaller-scale, proactive scoping projects was adopted by the Trust under the term Seeding Grants, introduced in 2006. Priorities in recent years have been linked to the *NSW 2021 (see http://www.2021.nsw.gov.au/)*. Other suggestions were taken up only to a limited degree – see comments in Table 1.1 below.

[1] AAS. (2005). NSW Environmental Trust Evaluation of the Research Grants Program: Australian Academy of Science.

Table 1.1: Comments on the Trust's actions on the 2005 Academy of Science suggested enhancements to ERP

	AAS Proposed Enhancements to ERP[1]	Review observations on the Trust's response to AAS proposed enhancements to ERP
Audit Theme		
Advocacy for Translation	Trust could give consideration to further involvement in the 'Communication Strategy' of project proposals, with mandatory allocation of funds to this aspect, either within or across projects	Further work in this area is warranted.
Transparency for Prioritisation	Linking to NSW and other government initiatives (e.g. State of the Environment reporting) and agency priorities could greatly assist priority setting.	Priorities for the program for 2013 and 2014 were linked to NSW 2021 and to other OEH//DPI/EPA priorities.
Network Facilitation	More directed facilitation of network creation among NSW and national environmental researchers via a Web portal or 'Researchers Register' may prove valuable to clients.	Little done in this area though the Trust's dissemination program is active on this matter.
Brokerage Role	Trust assume a brokerage role in terms of identifying and enabling larger-scale collaborative projects	Not done to any great degree.
Scoping-type Projects	The creation of a new funding category for smaller-scale, proactive scoping projects – not directed by a current identified need (probably in the order of <$50K) merits consideration by the Trust.	Done. The Trust implemented the seeding grants program from 2006-2012 to fund proof of concept projects up to $20,000 each, with a total budget of $100K annually

Applicant Assistance	Assisting applicants to gain access to cross-organisational data/or co-operation would be valuable, particularly in difficult circumstances (i.e. this would be on an 'as needs' basis). It could prove useful to identify and utilise any existing legislative or policy mandates or incentives to potentially assist in these circumstances?	Not done to any great degree. NSW Government open data policy makes data access much easier than in 2005[2].
Online Dissemination	Greater guidance by the Trust to applicants regarding utilisation of the World Wide Web for dissemination and promotion of project results would be beneficial. Perhaps ensure all reports and publications go online via Trust's website/portal and have links to applicant's sites.	Further work in this area is warranted.
Feedback	Enhance feedback mechanisms (and timing) to applicants regarding their progress reports, and for successful EOI applicants that fail the full application phase. There is good potential to develop a 'checklist' approach as a feedback tool.	Further work in this area is warranted. Trust administration indicates feedback has been encouraged since 2012, but survey respondents from 2005–10 noted need for better feedback mechanisms.

1.2.2 Auditor-General performance audit of NSW environmental grants administration 2009

In 2009 the Auditor-General carried out a performance audit of NSW environmental grants administration which included examining the grants programs of the Environmental Trust including the ERP.

The performance audit pursued three lines of inquiry:

- are grant programs aligned to government priorities?
- are grants allocated appropriately?
- are grants achieving results?

The Auditor-General found many aspects of good grants management, particularly in the Trust, including its grant allocation practices. He stated that all of the ten environmental programs under audit (seven Trust and three former Department of Energy and Climate Change (DECC) programs) were clearly aligned to the Government's objective to improve environmental outcomes.

The audit found that performance in respect of results was mixed although many grants delivered tangible benefits.

[2] In 2009 the NSW Government passed the *Government Information (Public Access) Act 2009* (GIPA Act) requiring all NSW government agencies to publish a range of open access information. The GIPA Act aims "to maintain and advance a system of responsible and representative democratic government that is open, accountable, fair and effective". One of the objects of the GIPA Act is to open government information to the public by "authorising and encouraging the proactive public release of government information by agencies". (See http://www.ipc.nsw.gov.au/privacy/gipa_act.html?s=1001)

While the Trust (and DECC) had a range of strategies in place to monitor grants, the Auditor-General determined the strategies "were not always applied consistently or effectively"[3]. He also noted government agencies recognised the need to review the effectiveness of their programs and that the Trust had committed to undertake evaluations.

The Auditor-General made a range of suggestions for general improvements across the set of grants programs examined including continuing to explore using web-based systems to streamline interactions and online processes for grants administration.

The Review noted the Trust has largely not followed the Auditor-General's recommendation to use web-technology for administering grants, and that its administrative processes remain primarily manual.

However the Review noted that the Trust has taken steps to collect meaningful information about the aggregate outcomes achieved through the research projects it has funded, as recommended by the Auditor-General in 2009.

This Review's comments on the Trust's response to the Auditor-General's recommendations are summarised in Table 1.2.

Table 1.2: Comments the Trust's actions on recommendations from the 2009 Auditor-General's performance audit of environmental grants administration

	Summary of 2009 relevant recommendations from Auditor-General[3]	Review findings on the Environment Trust's response to Auditor-General's recommendations
Audit Theme		
To reduce red tape and delay	• Continue to explore the use of web-technology to streamline interactions with grant applicants and recipients	• The Trust's processes remain primarily paper-based with communications emailed or mailed to the Trust
To improve the monitoring of grants and the evaluation of programs	• As a matter of priority build on their initiatives to collect meaningful information about the aggregate outcomes achieved through their funding • Monitor and review grant outcomes in a timely way. • Ensure that performance milestones are achieved before making payment • Regularly evaluate grants programs to see what is working and what can be done better. These evaluations should be published	• The Trust collects aggregate outcomes on the ERP through use of Schedule C – Research, implemented in 2010. • The Trust has an established process to review grants. • Done • The Trust has continued its commitment to have the ERP evaluated every five years.

[3] Auditor-General NSW. (2009). Auditor-General's Report Performance Audit - Environmental Grants Administration. Sydney: New South Wales Audit Office.

1.3 THIS REVIEW

Under the supervision of the Chief Scientist & Engineer, the Office of the NSW Chief Scientist and Engineer (OCSE) conducted this Review of the Trust's ERP at the request of the former NSW Minister for the Environment. See Appendix 1.

The Review examined all aspects of the ERP but, after discussions between the Trust administration and OCSE, it was decided to focus particularly on the impact of the program grants. To assess impact, the Review used surveys, interviews, and desktop analysis, as well as publication metrics. The Review Project Plan agreed between the Environmental Trust and OCSE is given at Appendix 2.

The Review's examination of the Trust's administrative processes is given in Chapter 2.

Chapter 3 covers the examination of outputs from and impact of ERP grants.

Chapter 4 examines where the ERP fits in terms of environmental research support in Australia.

2. ERP PROCESSES AND ADMINISTRATION

In this Chapter the processes and structures associated with the ERP are examined.

2.1 OVERSIGHT AND MANAGEMENT

The administrative processes associated with the ERP are managed by officers from OEH. The Board of the Trust has overall responsibility for the Program. The position of Secretary, a non-legislative position on the Trust with various delegated duties, including approving appointments to the Technical Committee, is rotated annually through administrative orders between the CE of OEH and CEO of EPA (current).

In 2012-13, the Trust's operating expenses totalled more than $39.934 million – including $11.331 million spent on Competitive Grants (inclusive of the ERP), $26.319 million on Major Programs, and $2.284 million on other operating costs. (http://www.parliament.nsw.gov.au/Prod/la/latabdoc.nsf/0/34c0a00adbe257aaca257c280001c1ae/$FILE/Environmental%20TrustAR13_part1.pdf)

The annual cost to the Trust of managing and administering the ERP is estimated by the Trust staff to be $46,315 plus on-costs and non-quantified in-kind contributions of OEH staff. From its observations of processes associated with the ERP, the Review is of the opinion that this is a significant underestimate of costs associated with running the program.

Under the Environmental Trust Act 1998, the Trust is required to establish Technical Review Committees. Members of a Technical Review Committee need not be members of the Trust; however, each Committee must include at least one representative from community groups and at least one representative from industry.

The Technical Review Committee for the ERP (commonly known as the *'Technical Committee'*) meets twice a year and is responsible for assessing and recommending grant applications and providing guidance on the overall implementation of the program.

The Chair of the Technical Committee, a Director from within the Office of Environment and Heritage, is currently appointed to an indefinite term by the Secretary of the Trust. The remaining three Committee members are appointed to three-year terms, and are eligible to claim $207 per day in sitting fees.

The Review found no formal process exists to advertise the position of the Chair of the Technical Committee, nor the other committee member positions. Rather, it fills the positions through direct appointment, which conflicts with the Department of Premier & Cabinet's *Guidelines for NSW Board and Committee Members.* http://www.dpc.nsw.gov.au/__data/assets/pdf_file/0020/154127/2013-170983_NSW_Government_Boards_and_Commitees_Guidelines.pdf

Similarly, no Technical Committee member is formally appointed as a community group representative or as a representative of industry as required by the Act. http://www.austlii.edu.au/au/legis/nsw/consol_act/eta1998263/

The Technical Committee makes recommendations for project funding to the Trust, which makes the final decision on grant allocations.

2.2 FUNDING AVAILABLE

The Trust makes approximately $1 million available to support grants under the ERP annually. The ERP has been funded at approximately this level since 2005.

The ERP has two types of grants:

1. Major Research Grants: providing funding for research projects with an indicative upper limit per project of $150,000 in 2013-14.
2. Seeding Grants: providing funding up to $20,000 for a component or components of a project that need to be tested and resolved before a full project can be developed for funding by the Trust or other funding body (Seeding grants were not offered in 2013 and 2014, pending this review of the ERP.)

Major Research Grants typically range from $150,000 to $200,000 (pre 2013) and are funded over three years. Between 2006 and 2012, when both Major and Seeding Grants were offered, 7% of total funding was allocated to Seeding Grants ($596,365 in total over this period) and 93% to Major Research Grants ($8,378,409).

All grants allocated from 2005-10 are listed at Appendix 3.

According to the guidelines for major grants, Trust grants can cover the "full cost of projects, with the exception of routine administrative or operational costs". This includes "salaries of officers to be employed specifically to work on the project". The guidelines list a set of funding exclusions, which are set out below:

- "core business activities that are already funded
- continuing administration costs of organisations
- projects that fund devolved grants (i.e. projects offering grants to other organisations)
- proposals seeking to use funds to commercialise existing technologies, for ongoing monitoring or ongoing research
- ongoing support for projects that organisations have committed to as part of a previous grant
- activities carried out before the grant is offered and accepted
- reimbursement of salaries of existing staff who will be supervising or working on the project as part of their usual duties"
  http://www.environment.nsw.gov.au/resources/grants/130834ApGdeRd.pdf

Given these exceptions – particularly the reimbursement of salaries of existing staff – the ERP cannot be said to be meeting the full economic cost of research in ERP projects.

This point can be important for Australian universities that are successful in winning ERP grants as the ERP, most unusually for a State research grants program, seems to meet all the conditions bar one (it granted less than $1 million per annum in 2013) to be eligible to be listed on the Australian Competitive Grants Register https://education.gov.au/australian-competitive-grants-register. If the annual funding amount could be raised to go over the $1 million mark then the Review suggests that the Trust apply to the Commonwealth to have the ERP listed. If that is successful, then universities that win ERP grants will get partial matching funding to their ERP grants through the various university research block grant schemes http://education.gov.au/research-block-grants. This will extend the funding for the research involved. It will also raise the national prestige and profile of the ERP.

The Trust began offering Seeding Grants for proof of concept and scoping projects in 2006 in response to a recommendation from the AAS review a year earlier.

Only projects testing a novel concept, technique or indicator were deemed eligible for Seeding Grants under the ERP. Projects seeking funds to commercialise existing technologies, or for ongoing monitoring or ongoing research were disqualified.

However, the confusion surrounding the purpose of the Seeding Grants – resulting in a significant number of ineligible applications – has led to the Trust not offering seeding grants in 2013 and 2014, pending the outcome of this Review. The simple device of renaming these grants 'Scoping Grants' might go some way to address this problem. (Seeding Grants often

mean Small Grants in other granting systems.) The Review suggests that retitling and retaining this part of the ERP is a good idea as support for scoping grants is sensible in terms of bringing precision of definition to hard applied research problems.

Numbers of grants funded by year, amounts, and success rates are given in Tables 2.1 & 2.2.

Table 2.1: Year-by-year breakdown of ERP budget and projects funded – Major Research Grants

Year	Total Program Funding Breakdown	Maximum Funding Available Per Project	Applications received at EOI stage	No. invited to submit full application	No. of Grants Awarded	Total Program Funding Awarded (2)	Success Rate
2005	$1,000,000	Up to $200,000	125	20	10	**$1,195,894**	**8.0%**
2006	$900,000	Up to $200,000	63	20	10	**$1,436,837**	**15.9%**
2007	$900,000	Up to $200,000	73	19	11	**$1,382,624**	**15.1%**
2008	$900,000	Up to $200,000	70	16	11	**$1,047,394**	**15.7%**
2009	$900,000	Up to $200,000	66	15	8	**$938,465**	**12.1%**
2010	$900,000	Up to $200,000 (1)	184	23	11	**$1,336,027**	**6.0%**
2011	$900,000	Up to $200,000 (1)	131	18	10	**$1,298,924**	**7.6%**
2012	$900,000	Up to $200,000 (1)	120	19	8	**$938,138**	**6.7%**
2013	$1,000,000	$150,000	189	28	6 (3)	**$885,704**	**3.2%**

Notes: 1. From 2010-2012, the strict upper limit of $200K for major grants was removed with guidance that grants were generally limited to $200K, but larger grants were considered with strong justification. 2. In some years, the funding awarded exceeds the funding allocated. This is due to reserve projects being funded across all Trust programs through available Net Cost of Service at the end of the financial year. Reserve projects are approved by the Trust annually in March if additional funds are available.3. In 2013, projects totalling $1,035,704 were presented to the Trust, with one project held back due to potential to duplicate other research.

Table 2.2: Year-by-year breakdown of ERP budget and projects funded – Seeding Grants

Year	Total Program Funding Breakdown	Maximum Funding Available Per Project	No. of Applications Received	No. of Grants Awarded	Total Program Funding Awarded	Success Rate
2006	Up to $100,000	$20,000	11	4	**$70,524**	**36.4%**
2007	Up to $100,000	$20,000	39	6	**$115,091 (1)**	**15.4%**
2008	$100,000	$20,000	14	2	**$39,772**	**14.3%**
2009	$100,000	$20,000	39	5	**$99,244**	**12.8%**
2010	$100,000	$20,000	54	5	**$94,214**	**9.3%**
2011	$100,000	$20,000	56	5	**$84,770**	**8.9%**
2012	$100,000	$20,000	48	5	**$92,750**	**10.4%**

Notes: 1. The funding awarded can exceed the funding allocated due to reserve projects being funded through available Net Cost of Service at the end of the financial year. Reserve projects are approved by the Trust annually in March if additional funds are available.

2.3 PRIORITIES

The Trust, based on recommendations from the Technical Committee, has set its priorities for the ERP to ensure the research it funds addresses environmental issues affecting NSW.

Between 2006 and 2009, the Trust's research priorities were quite general and its project categories – Air; Biodiversity; Hazardous substances and waste; and Water and catchments – were rotated annually between major ($200K) and minor ($100K) Major Research Grants, with the exception that environmental noise was one of the minor categories in 2006 and 2009. The categories were rotated to alleviate the need to approve the project categories on a yearly basis and allow for better program planning. Social, economic and biophysical research was allowed in the major categories, with only biophysical research in the minor categories. The major/minor distinction in the Major Research Grants is no longer made.

In 2009, the Technical Committee reviewed the program categories in light of changing Government priorities.

Climate change was designated as the major category for 2010 to 2012. Four new minor categories were also added and rotated each year: biodiversity and conservation; environmental pollution; integrated landscape management; and resource efficiency and sustainability. Social and economic research was again eligible in the major climate change category, but not in the minor categories.

For 2013 and 2014, the Technical Committee based its research priorities on general themes contained in the *NSW 2021* state plan but also linked to different government agencies' research priorities, including the Office of Environment and Heritage's Knowledge Strategy. The Chair of the Technical Committee noted that this new approach was adopted because of the potential for collaboration between researchers and agencies, and the increased likelihood that projects could show evidence of partnership and meet priorities for NSW. The Review agrees this is an appropriate method to set annual priorities.

2.4 WHO CAN APPLY

To be eligible for a research grant, the organisation applying must be community-based or a public or private research institute, as set out in the ERP's guidelines.

"Community organisations can include community groups, incorporated associations …, cooperatives and incorporated non-profit organisations." "Research institutes include universities and government organisations that have the requisite capabilities and responsibility to undertake research programs." (http://www.environment.nsw.gov.au/resources/grants/130834ApGdeRd.pdf)

The ERP is not restricted to NSW-based organisations.

The eligibility criteria raised some issues for the Review.

- What are the criteria attempting to do: bring the best possible sources of research expertise to bear on NSW environmental problems? If so, should business be excluded? Or, are the grants primarily to ensure there is some support for researchers working in fields where NSW might have environmental problems? If so, "capacity building" should be included as a program objective.
- It is unusual to refer to government departments as "research organisations"; however, several applications are submitted to the Trust from NSW Government Departments, which are generally funded by appropriation. Also CSIRO, another successful applicant, is funded by appropriation supplemented by earnings met against an earnings target which is fundamentally about earnings from clients.

These are complex issues that bedevil many government research grants schemes. The Review suggests the Trust re-visit the issues of eligibility for grants under the ERP in order to ensure that the criteria reinforce what the Trust is trying to achieve through the program.

2.5 WHO DOES APPLY AND HOW SUCCESSFUL ARE THEY?

Application numbers broken down by organisation type and by success/failure are given in Table 2.3.

Table 2.3: ERP application success rate by organisation (Major Research Grants and Seeding Grants combined)

Organisation Type	2008 (T/S)		2009 (T/S)		2010 (T/S)		2011 (T/S)		2012 (T/S)		2013 (T/S)		S/Rate (%)	Total
CSIRO	11	5	3	1	11	2	3	0	13	4	12	0	22.64	12
NSW State Government Agencies	18	3	15	3	27	0	23	4	21	3	27	2	11.45	15
NSW Universities	22	3	24	1	76	9	58	6	54	2	87	3	7.48	24
Catchment Management Authorities	1	0	2	1	6	0	3	0	3	0	4	0	5.26	1
Universities (Other)	7	0	5	1	13	0	8	0	9	0	15	1	3.51	2
Federal Departments	3	0	7	1	7	0	5	0	3	0	10	0	2.86	1
Councils, Regional Council Organisations, and Local RDA Committees	2	0	3	0	20	0	19	0	5	0	9	0	0	0
TAFE NSW	0	0	0	0	3	0	0	0	0	0	2	0	0	0
Landcare and Community Groups	2	0	1	0	4	0	1	0	2	0	11	0	0	0
Private Research Companies	1	0	3	0	2	0	5	0	2	0	2	0	0	0
Not-for-profit Organisations	4	0	4	0	11	0	6	0	10	0	10	0	0	0
Individual Applicants	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Other Organisations	3	0	0	0	3	0	0	0	0	0	0	0	0	0

Note: T = Total EOI submitted; S = Successful

Although the largest numbers of applications come from universities, it is interesting that CSIRO has by far the highest success rate.

2.6 GUIDELINES

Application Guidelines are revised annually and signed off by the Senior Manager – Environmental Grants. However, major changes to the guidelines are usually approved by the Trust, based on recommendations from the Technical Committee.

At present there is no section in the Guidelines that summarises how they differ from previous years. It is suggested this be added in future years.

2.7 FUNDING ROUND ANNUAL CYCLE

According to the Trust, the annual Funding Round for the ERP has followed the following cycle in recent years:

September[4]	Priorities set by Trust
January	Call for applications
February	Submission deadline for Expressions of Interest for Major Research Grants

[4] In 2013, the priorities were set in December.

April	Successful EOI applicants invited to submit full application. Unsuccessful applicants notified and given reasons for rejection.
May	Submission deadline for invited applications for Major Research Grants
September	Trust Board approves grants
October	Minister notifies successful applicants. Unsuccessful applicants notified by the Trust and given reasons for rejection.
October/November	Contracts negotiated
January-March	Projects commence

2.8 SUBMISSION PROCESS

Applications both at the EOI and invited round stages are currently submitted to the Trust by email.

The low level of automation of the clerical system has proven to be inefficient, and the surge in popularity of the ERP has only further stretched the Trust's limited human resources.

The Review was told by survey respondents that one EOI and one full application had been lost by the Trust, leaving the affected applicants disappointed.

This Review notes that these days most major research grants schemes use a fully online process for grants submission and administration. Although there is a significant initial cost of going to an online system, the benefits in terms of ease of administration, reporting and transparency are considerable. As the Trust has several grants programs, a move to online processing should ideally cover all the programs.

This Review echoes the Auditor-General's recommendation that this program have a fully online grants system. There are many examples of such systems in Australia.

2.9 APPLICATION FORMS

The Review found the application forms used by the Trust are relatively standard for grants of this type.

The Review, however, identified a two items that could be introduced to improve the forms:

- require a 100-word or similar project summary for the EOI which focuses the applicant and provides a useful basis for initial assessment
- ask the applicant if ethics approval (human research ethics, animal research ethics and gene technology approval - http://www.nhmrc.gov.au/grants/policy/research-ethics-committee-and-regulatory-approvals-clearance) is required and, if so, how it will be obtained.

The issue of ethics approval is particularly important and the Trust administration should ensure that the contract associated with a successful grant stipulates that no monies will be paid and the project cannot commence until the Trust has been supplied with proof that all necessary ethics approvals have been obtained.

2.10 HOW APPLICATIONS ARE ASSESSED

After an application is submitted, Trust administration staff undertake an initial screening for ineligible projects. They also check whether the applicant has previously received funding from the ERP, and the status of their project/s. That information, including the acquittal

status of previous projects, is then provided to the Technical Committee for consideration at their meeting.

Applications both at the EOI stage and the invited round are peer reviewed by experts in the relevant scientific field prior to assessment by the Technical Committee. EOIs generally receive one peer review, while full applications receive two or three peer reviews.

The Technical Committee decides who will undertake the peer review and may ask a referee nominated by the applicant to provide a peer review as well. The peer reviewers are informally selected from the Committee's network of contacts – particularly those of the Chair. Applications from OEH are always peer reviewed by an external assessor to avoid a conflict of interest; however, the Review noted OEH employees are commonly used to review 'competing' applications – which risks a perceived conflict of interest.

This somewhat *ad hoc* method of selecting peer reviewers is not best practice and leaves the ERP vulnerable to challenge on process grounds. The Review suggests that the Trust consider developing an arms' length peer reviewer process and database, seeking the assistance of the two scientific learned Academies in Australia, the Australian Academy of Science (AAS) and the Australian Academy of Technological Sciences and Engineering (ATSE), with management of the process and construction and annual updating of the database.

In assessing the application peer reviewers consider both the proposed project and some information about the project team – including the success or otherwise of research previously funded through the ERP.

Following the peer review process, the Technical Committee evaluates the practicability and overall worthiness of each grant application.

At present applicants are not sent peer reviewers' remarks for comment as is best practice for grants of this type. The Review suggests that applicants at the invited application stage be given the opportunity to comment on peer reviewers' remarks and that this information be used in the assessment and selection process.

EOIs are judged against the following assessment criteria:

1. **Relevance:** Will this fill a strategically significant gap in knowledge that would otherwise be likely to impede environmental decision-making in NSW within the foreseeable future?
2. **Merit of the research:** Will the project make an important contribution to society's knowledge base? Is it well considered and will it employ sound methodology? Will it employ competent staff? Does it provide value for money?
3. **Potential for success:** Given the objectives, methodology, estimated budget and time frame, what is the likelihood of success of the project?

Full applications are judged against the criteria in Table 2.4.

As noted previously, the Technical Committee then makes recommendations to the Trust, which makes the final decision on grant allocations.

There is no appeals process which is unusual. For most major grants funding programs, appeals on process are allowed as a matter of good practice, with similar models used by most Australian granting bodies. The Review suggests the Trust introduce such an appeals process. A possible model is that used by the ARC.

Table 2.4: ERP Full Application assessment criteria

Environmental Research Program assessment criteria
1. Relevance and originality
• Are the project's objectives clearly stated? • Is the proposal original? (i.e. is it new and not similar to, or a duplicate of, previous or existing work?) • Are the knowledge gaps strategically significant to the NSW Government? • Are there tangible environmental benefits for the environment of NSW?
2. Technical feasibility (Soundness)
• Has appropriate literature been reviewed, and advice obtained, in developing the project? • Is the method appropriate and sound? (e.g. in terms of hypothesis, statistics, monitoring/accounting for variability, identification of uncertainty in data and responses) • Will the method enable the research to achieve its objectives*? • Is the time frame realistic and achievable? • Are adequate Quality Assurance/Quality Control procedures in place? (if applicable) • How will progress against objectives* be monitored and evaluated? • Are criteria for measuring progress/success appropriate?
3. Dissemination
• Will the dissemination strategy enable the research to be effectively communicated? • Is the dissemination strategy sound?
4. Project team
• Are the people involved in the research appropriately qualified and experienced? • Are the people involved in the communication strategy appropriately qualified and experienced?
5. Value for money
• Are the resources adequate? • Is the budget cost effective? • Is the commitment of other contributors (financial/in-kind) demonstrated? • Is the applicant able to manage all aspects of the project?

The Review endorses the Trust's publication of the assessment criteria in the guidelines.

2.11 DATA FROM ERP-FUNDED GRANTS

At present there is no requirement that grantees deposit data acquired through the ERP-funded research grants with the Trust. In accordance with the NSW Government's commitment on open data processes, the Review suggests that all grantees be required to make all research data from grants available through the Trust website.

2.12 MONITORING, REPORTING & ACQUITTAL

The NSW Environmental Trust monitors the progress of projects funded under the ERP, primarily by requiring grantees to provide periodic progress and final reports as detailed in their Grant Agreements.

Since 2011, major grant recipients have used standardised reporting forms. Successful applicants are also asked to complete a document called *'Schedule C - Project Measures – Research'*. Project measures are a standardised list of indicators that are used by the Trust to determine whether a grantee's objectives are being met during the life of their project.

As the project progresses, grantees then report actual project measures against projected project measures annually.

Table 2.5 lists standardised reporting measures for grantees.

Table 2.5: Standardised reporting measures for ERP projects for grantees

Progress & Final Report elements (M, S)	Financial Report	Schedule C (M, S)
Summary (M, S)	**Direct Project Costs**	Innovative technologies or methods as a result of the research (M, S)
Background to project and your objectives (M)	Salaries – officer(s)	Technical or scientific conferences at which the research was presented (M, S)
Project outputs and measures (M)	Salary on-costs	Other events that will result in presentation of the research (M, S)
Project Outcomes (M)	Consultancies	Individuals engaged (M)
Method/approach (M, S)	Materials	Publications developed (M, S)
Issues, changes, opportunities (M)	Transport Costs	Trust funded staff involved (M)
Issues raised from previous progress report(s) (M)	Insurance	Consultants/contractors involved (M)
Other (M, S)	Project publicity	Non Trust funded staff involved (M)
Financial report (M, S)	Other (detail)	Volunteers involved (M)
Updated Schedule C – project measures – research (M, S – in form of KPI Table for the latter)	Subtotal	Researchers involved (M)
Any significant completed publications and materials (M, S)	**Administration**	Post graduate students involved (M, S)
Media coverage and feedback (M)	General administration	Partnerships established with community and/or government (M, S)
What was the concept, technique or indicator that you set out to develop/prove in this project? (S)	Accounting costs	Partnerships with Aboriginal groups (M)
What further research will the results of this proof-of-concept work enable you to do? (S)	Project documentation	Individuals potentially reached (M)
Were any significant variations to the approach(es) needed? If so, what are they? (S)	Other (detail)	Number of people who directly participate in project activities (S)
How has this project increased your understanding of the concept, technique or indicator? (S)	Subtotal	Any other indicators (S)
Has the project provided enough information to enable you to proceed with the project/proposal detailed in question 2? (S)	**Total**	
Has the project generated any scientific interest? (S)		
During the course of this study were any other issues identified in any further areas that would benefit from a proof of concept study? (S)		

Note: M=Major; S=Seeding

The Technical Committee Chair, in conjunction with the Trust, organises for both progress and final reports to be reviewed by OEH scientific staff or external experts. The reviewers are again chosen from the Technical Committee's networks – particularly those of the Chair. Again it is suggested that a more formal method of choosing reviewers be instituted.

Reviewers answer specific questions about whether the project is meeting its objectives and, if so, they provide 'positive feedback' for the grantee. They also comment on whether the project provides value for money and possible dissemination and media opportunities.

The Trust uses information provided in progress reports and reviewers' comments to assess how a project is tracking, and to decide whether or not to pay the next staged funding instalment.

The reporting obligations on grantees are designed to allow the Trust to ensure its investment in a project is achieving environmental outcomes for NSW, and that the funds provided are appropriately spent.

Final reports and reviewers' comments are used by the Trust to determine whether to acquit a project as 'satisfactory', 'excellent', 'with disappointment' or 'unsatisfactory'. Tables 2.6 & 2.7 give acquittal outcomes for Major Research and Seeding grants.

The Trust currently uses a Monitoring and Evaluation (M&E) form in conjunction with Schedule C for several of its programs (note: the ERP uses only Schedule C) after the application has been approved. This form allows the grantees and the Trust to refine project objectives, outline a communications strategy, and manage risk. The form identifies how progress will be monitored and how success will be evaluated.

Researchers testing the M&E form provided feedback to the Trust that the form was too onerous. The Review found however that the form seemed reasonable and that it would make a great deal of sense to have all Trust programs within a common Monitoring and Evaluation system.

Table 2.6: Major Grant acquittal outcomes

Year	Number of Major Grants	Number Acquitted – Excellent No. (%)	Number Acquitted – Satisfactory (%)	Number Acquitted – With Disappointment (%)	Number Unknown / Not yet acquitted (%)
2005	10	0	10 (100%)	0	0
2006	10	0	9 (90%)	1 (10%)	0
2007	11	0	8 (72%)	0	3 (27%)
2008	11	0	11 (100%)	0	0
2009	8	0	3 (38%)	0	5 (63%)
2010	11	1 (9%)	3 (27%)	0	7 (64%)
Total	**61**	**1 (1.5%)**	**44 (72%)**	**1 (1.5%)**	**15 (25%)**

Note: No grants were acquitted as 'unsatisfactory'

Table 2.7: Seeding Grant acquittal outcomes

Year	Number of Seeding Grants	Number Acquitted – Excellent (%)	Number Acquitted – Satisfactory (%)	Number Acquitted – With Disappointment (%)	Number Unknown / Not yet acquitted (%)
2006	4	0	1 (25%)	0	3 (75%)
2007	6	0	3 (50%)	2 (33%)	1 (17%)
2008	2	0	2 (100%)	0	0
2009	5	0	5 (100%)	0	0
2010	5	0	5 (100%)	0	0
Total	**22**	**0**	**16 (73%)**	**2 (9%)**	**4 (18%)**

Note: No grants were acquitted as 'unsatisfactory'

The Act stipulates that grants are made "subject to a condition that the grant is to be expended within three years after it is made". The Review acknowledges that research projects can be delayed and that the Trust has in place a delegation system which provides some flexibility in varying contract terms beyond three years as required. In the future, this may need to be accounted for formally.
http://www.austlii.edu.au/au/legis/nsw/consol_act/eta1998263/

The Trust has a Dissemination Team to identify opportunities to communicate research project outcomes through, for example, the media, and to encourage the take up of those results by end users by facilitating workshops.

While the Review acknowledged the Team has achieved some good outcomes on a limited budget, it also identified a desire amongst end-users and grantees for the Trust to do more to help broker collaborative partnerships and strengthen networks. This matter is addressed further in the next chapter.

2.13 RECOMMENDATION

Recommendation 1: That the Trust improves processes associated with the ERP, including the following:

- publicise Technical Committee vacancies, and fill positions as per the requirements of the Act – i.e. that the Technical Committee include at least one member from community groups and at least one member from industry
- consider applying to include the ERP on the Australian Competitive Grants Register to extend funding for ERP grants that go to universities
- rename 'Seeding Grants' as 'Scoping Grants' better to reflect their purpose of funding proof of concept or scoping projects
- re-visit the issues of eligibility for grants under the ERP in order to ensure that the criteria reinforce what the Trust is trying to achieve through the program
- amend applications guidelines to include a summary of how they differ from previous years
- move to a fully-online grants system
- amend application forms to:
  - require a 100-word or similar project summary for the EOI which focuses the applicant and provides a useful basis for initial assessment
  - ask the applicant if ethics approval (human research ethics, animal research ethics and gene technology approval) is required and, if so, how it will be obtained
- seek the assistance of the two scientific learned academies in Australia – the Australian Academy of Science (AAS) and the Australian Academy of Technological Sciences and Engineering (ATSE) – to develop and update annually an arms' length peer reviewer process and database
- applicants at the invited application stage be given the opportunity to comment on peer reviewers' remarks and that this information be used in the assessment and selection process
- establish an appeals mechanism for applicants to appeal on process grounds
- ensure contracts with grantees stipulate that no monies will be paid and the project cannot commence until the Trust has been provided proof that all necessary ethics approvals have been obtained
- require grantees as a condition in the grant contract to make all research data from grants available through the Trust website
- use the Trust Monitoring & Evaluation form for ERP.

3. OUTPUTS AND IMPACT

3.1 ASSESSING OUTPUT AND IMPACT

A focus of the Review was to understand the outputs of ERP-funded projects and whether these outputs were in line with the aim and objectives of the ERP. The Review was particularly interested to understand to what use the projects' outputs had been put to solve environment problems in NSW. Of course "use" can cover a wide range of issues, including informing policy development with evidence; helping industry manage practices; developing environmental management systems; providing educational materials; and contributing to modelling techniques.

3.2 METHODOLOGY

Quantitative and qualitative information was used to assess impact.

Simple quantitative information was available from the Trust on their rating of grant outputs. This information was summarised in the previous chapter at Tables 2.6 and 2.7. It is clear as the bulk of the grants acquitted have been rated as "satisfactory" that the Trust believes they met their objectives.

Other quantitative information is available in the form of information on scientific publication impact factors. This issue is covered below.

Qualitative information was sourced through online and phone surveys and through structured and unstructured interviews.

Three online surveys were distributed on 6 February 2014, using an OCSE *Survey Monkey* subscription. The surveys were to:

- grant recipients of Major Research Grants under the ERP (2005-10)
- grant recipients Seeding Grants under the ERP (2006-10)
- applicants who applied unsuccessfully for a Major Research Grant under the ERP (2005-10). Where an applicant had been both successful and unsuccessful, they were only sent the relevant "successful grant recipient" survey.

The surveys were distributed from an address database held by Trust staff, with a cover letter from the NSW Chief Scientist & Engineer requesting participation in the review. Some respondents had moved so not all those on the target lists could be reached. The survey questions are reproduced in the report at Appendix 4. Responses to surveys were available for view by OCSE staff involved in the Review but not by Trust staff.
In order to encourage frank responses, respondents were assured that the answers would remain confidential. Survey recipients were given two weeks to respond to the survey. The de-identified responses to survey questions are at Appendix 4.

The online survey response was low. Accordingly, toward the end of the online survey period, Trust staff phoned grantees to encourage them to respond especially to the successful Major Research Grant survey. The Review increased the response rate to the survey of successful Major Research Grant recipients through phone interviews using the same questions as the online version, which boosted the response rate in that category to 30%. Overall survey response statistics are given in Table 3.1.

Table 3.1: Survey response statistics

	Surveys delivered	Online responses	Phone interview responses	Total responses
Major grantees	57	10 (17%)	7 (11%)	17 (30%)
Seeding grantees	22	4 (18%)	N/A	4 (18%)
Unsuccessful applicants	210	25 (12%)	N/A	25 (12%)

The poor response to the surveys is disappointing and suggests that grantees are not particularly concerned about the Trust's view of them. By contrast, if, say, the Australian Research Council were to survey its grantees, it would most likely get a very good response rate as its grantees would be concerned that lack of cooperation could jeopardise their future grant possibilities.

The Review also sought information from end-users across the spectrum of projects, where there were specific end-users. A number of approaches were used to identify end-users – identification in applications or reports; identification through phone surveys with researchers, and survey responses.

The Review sought permission by phone from a number of the grantees to contact end-users for grants where specific end-users could be identified. All grantees agreed that the Review could speak directly with their end-users except in one case where the grantee requested that the Review contact the government end-user only and not the industry end-user, citing commercial in confidence concerns.

The Review conducted structured phone interviews with 13 end-users. Summaries of the questions asked and the responses are at Appendix 4.

The Review also undertook numerous unstructured interviews with Trust administration, Technical Committee members and other NSW Government agency stakeholders to canvass views and issues about the program.

3.3 QUALITY OF SCIENTIFIC PUBLICATIONS RESULTING FROM ERP-FUNDED PROJECTS

To gain a perspective on the quality of the research that was funded by the ERP, the Review sought to obtain information on the publications that resulted from the research funded between 2005 and 2010 through the Major Research Grants Program. Metrics about peer reviewed journals enable the impact of the publication to be measured through an 'Impact Factor', which is specific to the journal and reflects the frequency of citations of publications in those journals. Impact Factors are calculated (in the Journal Citation Reports® 2012 function) by Thomson Reuters and published on the Web of Science, and accessed through the Web of Knowledge websites (http://wokinfo.com/).

The logic behind this approach to understand quality is that researchers will aim to get their paper in journals with the broadest reach and biggest impact factor, and the higher quality papers will be published in the journals with the highest impact factor.

There is a degree of specificity between what is considered a high impact journal in one field versus another field. For this reason, looking at journals' impact factor rankings in the context of the specific research subjects assists in understanding the relativities across disciplines. The Thomson Reuters database allows journals to be listed within specific research subject categories.

The Review asked the successful Major Research Grant Recipients in the period 2005-10 (The Review called all grantees. Nine were not contactable via phone and follow-up emails were sent.) for a list of publications that resulted from their ERP-funded research. It also asked whether the Trust was acknowledged. Responses were received relating to 31 projects, which resulted in a list of 74 peer reviewed publications. Publications that were published or submitted to a journal were included in the analysis; neither papers still in preparation nor conference papers were included. The publication list included 49 distinct journals, of which 44 were listed on the Web of Knowledge. The subject category databases were reviewed and included: biodiversity conservation, chemistry analytical, biology, ecology, environmental science, engineering environmental, geophysics, marine and freshwater biology, meteorology and atmospheric sciences, oceanography, zoology.

The list of journals, number of publications identified in that journal, and the journal impact factors, research field or subject category are shown in columns 1 to 4 in Table 3.2.

Table 3.2: Journal impact factors for publications from 31 ERP-funded projects (2005-10)

Journal	No. of pub'ns	2012 Impact Factor (5 year IF)	Web of Knowledge Subject category	Ranking by impact factor within category	Decile	Number papers in decile
Global Change Biology	2	6.910 (7.819)	Biodiversity conservation Ecology Environmental sciences	1/40 9/136 5/210	1 1 1	1=22 1.5 = 1 2 = 7 3 = 15 3.5 = 4 4 = 2 5= 5 5.5 = 1 6 = 5 7 = 3 8 = 1 9 = 2 10 = 0 ? = 8
Philosophical Transactions of the Royal Society B	1	6.230 (N/A)	Biology	6/ 83	1	
Fish and Fisheries	1	5.855 (7.326)	Fisheries	1/50	1	
Analytical Chemistry	2	5.695 (5.769)	Chemistry, analytical	3/75	1	
Environmental Science and Technology	4	5.257 (N/A)	Engineering, environmental Environmental sciences	2/ 42 7/ 210	1 1	
Ecography	1	5.124 (5.791)	Biodiversity conservation Ecology	3/40 16/136	1 2	
Journal of Applied Ecology	1	4.740 (5.492)	Ecology	21/136	2	
Climate Dynamics	2	4.231 (4.869)	Meteorology & atmospheric	6/74	1	
Geophysical Research Letters	1	3.982 (4.070)	Geophysics, multidisciplinary	11/172	1	
Freshwater Biology	1	3.933 (N/A)	Marine and freshwater biology	3/100	1	
Public Library of Science (PLOS One)	4	3.730 (4.244)				
Environmental Pollution	1	3.730 (4.094)	Environmental science	20/ 210	1	
Aquatic Toxicology	3	3.730 (4.007)	Marine and freshwater biology	4/100	1	

Journal	No. of pub'ns	2012 Impact Factor (5 year IF)	Web of Knowledge Subject category	Ranking by impact factor within category	Decile	Number papers in decile
Soil Biology and Biochemistry	2	3.654 (4.038)	Soil science	1/34	1	
Annals of Allergy, Asthma and Immunology	1	3.45 (2.776)	Allergy	5/23	3	
Journal of Hydrometeorology	1	3.273 (3.932)	Meteorology & atmospheric science	14/74	2	
Science of the Total Environment	1	3.258 (3.789)	Environmental science	31/210	2	
Chemosphere	1	3.137 (3.634)	Environmental science	36/210	2	
Oecologia	1	3.011 (3.759)	Ecology	37/136	3	
Fungal Ecology	1	2.854 (2.755)	Ecology	43/136	4	
Deep Sea Research PT II	1	2.816 (2.925)	Oceanography	8/60	2	
Ecotoxicology	1	2.773 (3.294)	Ecology Environmental science	48/136 49/210	4 3	
Comparative Biochemistry and Physiology, Part C	2	2.707 (2.961)	Biochemistry & molecular biology	155/290	6	
Climate Research	1	2.684 (3.071)	Meteorology & atmospheric science Environmental science	23/74 56/210	4 3	
Environmental Chemistry	1	2.652 (2.701)	Chemistry, analytical Environmental science	24/75 58/210	4 3	
Plant and Soil	1	2.638 (3.108)	Soil science	4/34	2	
Environmental Toxicology and Chemistry	8	2.618 (2.991)	Environmental science	59/210	3	
Estuaries and Coasts	1	2.560 (2.560)	Environmental science Marine and freshwater biology	64/210 15/100	4 2	
Marine Pollution Bulletin	1	2.531 (3.153)	Environmental science Marine and freshwater biology	65/210 17/ 100	4 2	
Biological Invasions	1	2.509 (3.027)	Biodiversity conservation Ecology	10/40 54/136	3 4	
Estuarine, Coastal and Shelf Science	3	2.324 (2.804)	Marine and freshwater biology oceanography	22/100 16/60	3 3	

Journal	No. of pub'ns	2012 Impact Factor (5 year IF)	Web of Knowledge Subject category	Ranking by impact factor within category	Decile	Number papers in decile
International Journal of Wildland Fire	1	2.322 (3.126)	Forestry	7/62	2	
Biodegradation	1	2.173 (2.202)	Biotechnology & Applied Microbiology	76/160	5	
Ecological Modelling	1	2.069 (2.399)	Ecology	63/136	5	
Restoration Ecology	2	1.934 (2.257)	Ecology	69/136	6	
Continental Shelf Research	1	1.889 (2.264)	Oceanography	24/60	4	
Austral Ecology	2	1.738 (1.907)	Ecology	74/136	7	
Aquatic Botany	2	1.593 (2.250)	Marine & freshwater biology	45/100	5	
Aquatic Biology	1	1.453 (1.881)	Marine & freshwater biology	49/100	5	
Wildlife Research	1	1.381 (1.512)	Ecology Zoology	87/136 53/151	7 4	
Water Science and Technology	1	1.102 (1.146)	Environmental engineering Environmental science Water resources	31/42 149/210 44/80	8 8 6	
Australian Journal of Entomology	1	0.884 (0.904)	Entomology	44/87	6	
Australian Journal of Zoology	1	0.775 (1.031)	Zoology	100/151	7	
Molluscan Research	1	0.617 (0.568)	Zoology	121/151	9	
Australasian Journal of Environmental Management	1	0.600 (N/A)				
Crustaceana	1	0.466 (0.524)	Marine & freshwater biology	89/100	9	
Integrated Environmental Assessment and Management	1	N/A				
Pacific Conservation Biology	1	N/A				
Australian Zoologist	1	N/A				
	74 papers					

Given the difference in the ranges of journal impact factors between subject categories and to understand better the relative status of different journals in different subjects, the Review used the Web of Knowledge database to determine where in the subject field the journal is placed in terms of Impact Factor. The journal that has the highest impact factor in the

subject would have a rank of 1 out of the total number of journals. This rank is specific to the subject and is shown in column 5 of Table 3.2.

To compare across journals in different subjects, with different rankings, the rankings were categorised into decile groups, where a decile score of 1 means that the ranking of the journal was in the top 10% of the list of journals in that subject category. These are listed in column 6 of Table 3.2. This process allows each paper to be given a rough quality score based on the impact factor of its journal within the subject category or categories, with the number of journals in each of the ten decile sets shown in column 7 of Table 3.2. In cases where a journal is listed in more than one subject category, the decile scores are averaged.

Overall, the Review found the quality of the research as measured through scientific publications was good. Of the 74 papers nominated for the 31 projects, 22 of them were in the top decile (top 10% of publications in that field). Eight papers were in the top 10 to 20% of the fields' journals. Only 12 of the 74 papers appeared in journals in the bottom half of their categories impact factors. Using the Web of Knowledge, the Review found a high of 6.9 and low of 0.47 in terms of Impact Factor. 42% of the articles were published in journals with IF > 3.0 and 19% with IF > 4.0.

The feedback from researchers indicated that 70% of the papers acknowledged the Trust funding – a disappointing result as it is a contract requirement that Trust support be acknowledged in publications.

From these results, it appears that the Environmental Trust Research Grants Program projects are producing a reasonable number of papers that are appearing in good journals, not the top level Science, Nature-type journals, but journals in the higher echelons of the fields in which recipients are researching.

3.4 A NOTE ON SEEDING GRANTS

It is hard to draw firm conclusions on the Seeding Grant outcomes as the survey response size was small (4) but it is noted that all four respondents supported the program and identified tangible outcomes from the grants, including academic journal articles and, in one case, a patent. None had yet received a major grant from other sources, but two respondents had submitted applications.

While none of the survey respondents went on to receive a major research grant from the Trust; an analysis by the Review of all seeding grant reports from 2005-10 showed that two seeding grant projects out of twenty-two successfully leveraged further Trust funding and one leveraged funding from another source.

3.5 IMPACTS NOTED BY END-USERS

The Review interviewed 13 representatives of end-users associated with 10 ERP-funded projects. These end-users included state government agencies, councils, NGOs, federal research agencies, industry and academics. Discussion with end-user representatives focused on the value of the research to the end-user and the impact of the project outcomes under discussion. A summary of interviews is provided at Appendix 4.

All end-users were familiar with the research. Five considered the relationship a partnership, while eight did not. Some became aware of the project only after it was underway or had been completed. Most end-users communicated with the researchers informally through conversations and email, but other interactions included attending conference presentations, joint involvement in a working group, direct employment by the researcher, and being contacted directly by the researcher to scope the work.

The end-users were asked how they valued the research outputs. Eleven interviewees found the research outputs valuable, with two stating it was still a bit too early to tell.

Five of those interviewed used the outputs of the research directly, with the other seven stating that it is too early yet to use the outputs or they're waiting for project results to be published or finalised, and/or they are not sure. One noted that the techniques take time and money to develop and further funding is required to do this.

Examples of use cited by end-users included community education, developing tools to assist in regulatory processes, assistance with policy development, using existing tools in new ways, and assistance with testing a model.

The end-users were asked how they valued the research outputs. Eleven interviewees found the research outputs valuable, with two stating it was still a bit too early to tell. When asked what impact the project has had, four interviewees said they were unsure of the impact or it was too early to tell, two said it had some or low impact, while seven felt it had moderate or high impact for them.

When asked if the research was in a priority area for NSW, 10 respondents said it was a high priority either now or at the time, with one of those saying it was a high priority local issue. Two were unsure and one said 'no'.

3.6 IMPACTS NOTED BY GRANTEES

In the surveys successful grantees were asked how their research benefitted the environment of NSW. Most respondents provided specific information about the outputs and outcomes of the projects and how state and federal government agencies, other researchers, industry and the community were using the research outputs.

When asked if they had involved a potential end-user, at what stage and how they were involved, 70% (12) of respondents said they did involve an end-user, with half of those stating they discussed the research project with agencies, other researchers or industry at the scoping phase to generate the idea and/or determine what was possible. The other half of the 70% stated they worked with the end-user through the entire project stage.

76% of survey respondents said they saw merit in involving an end-user in future projects. Only two respondents said there was no merit because they already work closely with end-users and understand their needs and two were unsure or said it depends on the nature of the project. The comments showed strong support for involving end-users, including involvement from the planning phases of the project to achieve outputs sought by the end-user.

94% of survey respondents said they communicated the results of their research to end-users through a range of avenues, primarily through academic journal articles, conference presentations, workshops or networking events. Research outputs were also presented to community groups, provided to private companies, published as magazine or online articles, or included in Government policy papers or reviews. Some respondents noted that the final report for the Trust was a major output for dissemination and hoped for it to be published on Trust's website, which it wasn't. The survey respondents noted a wide variety of specific situations where their research results were used by government, industry, and other researchers.

Other direct and indirect impacts that survey respondents noted as resulting from the projects included strengthening of networks and collaborations, new research projects formed, international recognition of project, enhanced status of several research teams, leveraged further funding, increased public awareness of an issue, and leveraged outputs into a widely used ecological model.

Some of the grantees identified that the timing of research was a key element in take-up, both in terms of other researchers and policy makers. Other factors cited were that the research covered a clear gap in knowledge and there was a need for the information. Having priorities that are reflective of end-users needs can help these factors being met.

From study of the survey responses, it is clear there is a mismatch in perceptions between grantees and end-users of the usefulness of project outcomes with the grantees more positive view of the usefulness. Of course grantees will be including scientific publications in their perceptions of use and such publications, when in high-impact journals, probably reach a wider audience beyond Australia.

3.7 CHARACTERISTICS OF HIGH- AND LOW-IMPACT ERP-FUNDED PROJECTS

The Review tried to identify common characteristics of projects deemed high impact as compared to those deemed low impact with high impact projects interpreted as those that met one or more objectives of the ERP, performed well in terms of uptake by end-users, and/or made a measurable difference to the environment of NSW. To identify projects in each category, the Review consulted the Trust administration and the administrator for the Technical Committee who manages peer reviews and undertook a review of available project materials from all major grants between 2005 and 2010. From this, eighteen projects were identified as high impact and nine projects as low impact for further analysis.

A desktop analysis of the 27 selected projects then considered topics such as:

- whether a specific end-user was identified in the application
- the type of relationship the grantee had with the end-user through all stages of the research
- type of end-user
- type of researcher, including whether early stage or established.

For high-impact projects the major common characteristic was that there tended to be a more solid pre-existing relationship between the researcher and end-user.

This finding is consistent with studies by others. Holmes & Savgard (2008)[5] prepared a report on behalf of the Swedish Environmental Protection Agency (SEPA) following 95 interviews and workshops across the Scientific Knowledge for Environmental Protection (SKEP) ERA-NET network. They noted that all organisations interviewed considered it important to involve potential end-users of the research at the planning stages of the program and suggested that research questions should be framed from different perspectives; should involve researchers, users and stakeholders in an iterative framing process; and should be specific about the outcomes desired.

Holmes & Savgard[5] concluded that for research impact end-user involvement should be considered in a holistic manner, through the whole grant funding and acquittal process – involving end-users from both the program and the project planning stages, to the final communication and dissemination of research results.

For low-impact projects a variety of factors seem to account for the low impact including:

- the project objectives changed during the project or were too ambitious at the start, relative to grant size or time, resulting in appraisal reviews noting that objectives were not met and/or not well stated

[5] Holmes, John and Savgard, Jennie. (2008). *Dissemination and implementation of Environmental Research Including Guidelines for Best Practice*: Swedish Environmental Protection Agency. Retrieved from http://www.medspring.eu/sites/default/files/uploads/Dissemination%20and%20implementation%20of%20environmental%20research.pdf.

- the end-user was listed in vague terms on the application - often a large agency was mentioned rather than an individual or specific group. For several projects, the relationship with the end-user was found to be minimal and the end-user had not had contact with the grantee during or after the research
- the grantees had an end-user organisation in mind when receiving the grant but were unable after that to find anyone specific in the organisation to speak to about the research project
- delays in the projects, especially when the work was being carried out by graduate students who were using the research as part of their thesis requirements.

One project that was deemed low impact actually, when investigated further, had produced a useful result in that the hypothesis was proven to be negative or false. This changed the assumptions in the field, so the outputs had a different impact than anticipated when the application was written.

It should be noted that even the low-impact projects examined were, for the most part, producing solid scientific results as demonstrated through the quality of the publications.

3.8 TRUST RELATIONSHIP BROKERING AND PUBLICISING OUTCOMES

The Review sought input from end-users and grantees about what the Trust could do to improve take-up of research. Feedback received included that:

- the Trust should ensure that when a project is set up, the researchers have linkages with end-users from the outset (planning phase). This can be difficult if the researcher is not familiar with these groups, so the Trust could help to facilitate this in some capacity
- the Trust could enable the facilitation of dissemination of the research outcomes. Some grantees indicated they have been able to get the results of their work out to the scientific community relatively easily; however, it is often reaching actual end-users and the broader community where dissemination falls short
- the Trust could do more to raise awareness of the ERP and its purpose to end-users.

Grantees were asked by the Review what the Trust could do to help researchers bolster the impact of their research. More than half of all respondents suggested the Trust hold a workshop or seminar where grantees could present their work, with many pointing to similar events that were useful for networking or communicating with their target audiences. Several respondents requested an option to publish their reports online through the Trust website to make them more broadly available. One noted that since the reports are reviewed [externally] by the Trust, a reasonable quality is assured. A few respondents stated the responsibility to disseminate outputs and results lies with the researcher – particularly through academic channels – and there is little the Trust can do to help.

Increasing the web presence of the Trust grants' outcomes may assist with dissemination to broad categories of end-users. Increasing the availability of information about researchers and their skills and capabilities would also assist in enabling partnerships and collaboration between researchers, and also with end-users.

To improve results dissemination, the Trust could also require successful grantees to have a communications strategy and monitor how well the strategy is followed. The Review notes that the research outputs are more likely to be disseminated to a broader audience if linked to a communications strategy developed at the outset.

The Review noted that while the relationship between the Trust and grantees is a generally positive one, some grantees expressed a desire for more contact, outside of the annual

reporting period, to foster a closer relationship between all involved, and to ensure that the Trust is comfortable with project progress.

Several survey respondents suggested the Trust could do more to link researchers with government agencies – something those from outside government sometimes found difficult.

The Review suggests there is scope for the Trust to take a more proactive role as a broker helping end-users looking for research problems to be solved to meet researchers who can tackle the problem.

During the course of this Review, the benefits of increasing the Trust's role in working in partnership with researchers and end-users to drive research projects with greater impact was discussed with Trust staff. They noted that a cultural shift to this collaborative role is starting to occur with a restructure in the organisation. Trust staff noted they would also like to build better relationships across agencies, including with the Environmental Protection Authority and the Department of Primary Industries.

The Review acknowledges that the Trust has limited resources and its capacity to take on such an expanded broker and research disseminator role would be a stretch in terms of current administrative resources.

Trust staff noted that the Trust is working to integrate its programs better: for example, the outcomes and results of Trust-funded research projects could feed into its Estuary and Coastal Management programs or Restoration and Rehabilitation programs.

3.9 RECOMMENDATION

Recommendation 2: That the Trust makes changes to the ERP to maximise impact and end-user take-up of research outcomes and results by:

- dedicating resources to relationship building and brokering including online systems to link researchers and end-users
- increasing emphasis on end-user consultation and relevance during the application and assessment process
- building into the grant contract key performance indicators around end-user engagement and communication and dissemination of research results and related data including requiring applicants to outline a budgeted end-user engagement and communications strategy in their full application.

4. WHERE DOES THE ERP FIT IN TERMS OF ENVIRONMENTAL RESEARCH SUPPORT IN AUSTRALIA?

4.1 ADDRESSING THE QUESTION OF WHETHER THE ERP IS FUNDING RESEARCH THAT WOULD OTHERWISE GO UNFUNDED?

One of the questions considered by the Review was whether the Trust is funding relevant research that would otherwise go unfunded.

To help address this question, the Review considered the following:

- expenditure on environmentally-related R&D by organisations in Australia
- R&D funding schemes which will support environmentally-related research in Australia.

4.2 EXPENDITURE ON ENVIRONMENTALLY-RELATED R&D BY ORGANISATIONS IN AUSTRALIA

Australia currently spends at least $800 million on R&D relating to environmental sciences. This is estimated from the following (latest available ABS figures):

- $247 million was spent by Government in this field in 2011/12. This is primarily research undertaken by the publicly-funded research agencies (PFRAs): CSIRO, ANSTO, DSTO, and AIMS, along with some spending by state agencies (notably in primary industries and environment) (see http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/8109.0Explanatory%20Notes12011-12?OpenDocument)
- $252 million was spent in this field by Higher Education organisations in 2010 (see http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/8111.0Main+Features12010?OpenDocument)
- $281 million was spent by business in this area in 2011/12 (see http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/8104.0Main+Features12011-12?OpenDocument)
- $6.6 million was spent by non-profits in 2008/9 (see http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/8109.0Explanatory%20Notes12011-12?OpenDocument).

It is interesting to note that the three major categories spend about the same on research relating to the environment which is a different picture to overall R&D spend where business expenditure on R&D ($16.9 billion in 08/09) almost doubles that of Government ($3.4 billion in 08/09) and Higher Education organisations ($6.7 billion in 08/09) combined.

4.3 R&D FUNDING SCHEMES WHICH SUPPORT ENVIRONMENTALLY-RELATED RESEARCH

Most Australian R&D funding schemes are managed by Australian governments or by non-profits such as Foundations, with government schemes accounting for the majority of the funds disbursed through granting bodies. Some funding schemes are generic in that they will fund any field of research; some are specific in that they target one field of research (e.g. the environment). Some are made more specific through nomination of specific priorities.

The large generic R&D funding schemes are the following:

- the R&D Tax Incentive – available to eligible businesses, and accounting for over $1 billion in tax foregone. It is a Commonwealth Government program delivered by AusIndustry and the Australian Taxation Office. See www.ausindustry.gov.au/programs/innovation-rd/rd-taxincentive/pages/default.aspx
- the Australian Research Council schemes – available to higher education institutions. The appropriation for the ARC National Competitive Grants Schemes was $879 million in 2012-3 (see http://www.arc.gov.au/about_arc/annual_report.htm). Two of the largest ARC grants programs are the Discovery Grants ($529 million in 2012-13) and the Linkage Program ($130 million). These include funding for grants and fellowships. Another major ARC program is its Centre of Excellence program which has been responsible for sponsoring some of Australia's most high-impact research coming out of universities
- the Cooperative Research Centre Program – competitive funding scheme for centres that bring together industry, higher education institutions and PFRAs. In 2012-13 this program spent $157.3 million in Centre support. See http://www.industry.gov.au/AboutUs/Budget/Pages/Library%20Card/PortfolioBudgetStatementsDIICCSRTE2013-14.aspx
- State, Territory and Local Government schemes – various State, Territory and local governments offer generic R&D funding support. NSW has the Research Attraction and Acceleration Program (RAAP) which provides $13 million annually for funding R&D support focusing on leveraging even greater monies from other sources.

Specific funding schemes supporting research on the environment include:

- the National Environmental Research Program (NERP), managed by the Commonwealth Department of the Environment, provides around $20 million per annum for environmental research to support decision making. The funding is currently provided across five thematic hubs (tropical ecosystems, Northern Australia, marine biodiversity, landscapes and policy, and environmental decisions) with funding announced in 2010 for four years. Each hub has a set of core themes which provide an outline to set the direction of its research projects. The Commonwealth Government is currently rethinking its environmental research direction. See http://www.environment.gov.au/topics/science-and-research/national-environmental-research-program
- the Environmental Trust programs, the main research one being the ERP, the subject of this review
- a range of state and local government environment grant schemes across Australia
- grants provided by not-for-profits for environmental purposes. Some examples of these are given Appendix 5.

There are also a range of granting schemes which are directed at fields that include a strong element of research on the environment. These include:

- grants from the various rural research corporations (Grains Research and Development Corporation, etc.)
- grants for clinical medicine and dentistry. The National Health and Medical Research Council is the major funding body in this field, with a grants appropriation in 2012-13 of approximately $800million, see https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/nh162_nhmrc_annual_report_1213.pdf

It should be noted that most of research grant funding schemes in Australia (including the ERP) provide only partial funding of the research they support. Rarely, for example, are salaries for Chief Investigators funded. This means that these granting scheme cause leveraging of matching funds from the applying organisations to be devoted to research for which funding is sought.

4.4 SO WOULD ERP PROJECTS GO UNFUNDED IF THE SCHEME DID NOT EXIST?

In the national R&D funding support system, the ERP is a relatively small grants program.

The ERP is differentiated from other R&D funding support primarily by its aim - to support research projects that help address environmental problems in NSW. That said, other R&D support schemes could be used for this purpose, notably the ARC Linkage Grants (for end-user/university partnerships focused on solving a specific problem requiring R&D), the R&D Tax Incentive (for industry but it can sub-contract to public sector agencies), the CRC Program, and other grants mentioned above.

The availability of these other (larger) funding sources has not affected the popularity of the ERP which, as noted in the Chapter 1, is very competitive. The Technical Committee indicated that the general quality of the EOIs and full applications received is high, but only a few projects are funded due to limited program budget.

In surveys carried out for this Review approximately three quarters of respondents (19) who were unsuccessful in applying for a Trust grant said they could not find another source of funding for their research project. Only five said they found another funding source. This is a somewhat surprising finding but most likely reflects the competitive nature of granting schemes generally in Australia.

Another way to approach this issue is to consider the following two questions:

1. Is the ERP the best possible way to meet the aim to support research projects that help address environmental problems in NSW?
2. What would happen if the ERP did not exist?

If the ERP did not exist, then support for research projects that help address environmental problems in NSW would need to come from internal organisational sources or from other granting schemes. Given the relatively small amount of funding available in the ERP, possibly a more effective use of the funds would be for the Trust to boost its broker role of matching those responsible for solving environmental problems in NSW with organisations which have the expertise to tackle these problems. This brokering role could be extended by using the concept of small-size scoping grants, currently called seeding grants.

4.5 RECOMMENDATION

Recommendation 3: That the Trust consider if it might achieve the aim of supporting research projects that help address environmental problems in NSW more effectively in other ways, in particular examining if the use of its funds is better devoted to brokering relationships between those responsible for solving environmental problems in NSW with organisations which have the expertise to tackle these problems – and then supporting these relationships with scoping grants to help leverage larger funds from larger research granting schemes.

5. CONCLUSION

The ERP Program is funding good quality research relevant to the environment in NSW. Important scientific publications are being produced and, to the extent end-users could be found to interview, it is clear that the program has funded projects that have had good outcomes for NSW end-users.

More useful outcomes and higher impact on specific NSW problems would most likely result if the Trust encouraged end-users and grant applicants to develop a strong relationship before submitting grant applications.

The ERP management and administration processes are generally sound but some important improvements are needed. An online grants processing system is overdue.

The ERP is a relatively small environmental research grants program when considered in the context of research funding for environmental matters in Australia. There could be benefit in using the ERP funding more in the scoping mode envisaged originally for the seeding grants with a view to attracting larger amounts of funding on to NSW environmental problems from bigger granting schemes.

APPENDIX 1: LETTER FROM THE MINISTER

NSW GOVERNMENT

The Hon. Robyn Parker MP
Minister for the Environment
Minister for Heritage

RECEIVED
23 DEC 2013
Deputy Premier's Office

DOC13/80830

The Hon Andrew Stoner MP
Deputy Premier
Minister for Trade and Investment
Level 30 Governor Macquarie Tower
1 Farrer Place
SYDNEY NSW 2000

Dear Deputy Premier Andrew,

I am writing on behalf of the NSW Environmental Trust to request your approval for the NSW Chief Scientist and Engineer to conduct an independent review of the Trust's Environmental Research Grants Program.

The NSW Environmental Trust is an independent statutory body, which I chair, established by the NSW Government to fund a broad range of organisations to undertake projects that enhance the environment of the State. The Environmental Research Program is one of the many contestable grant programs which aim to support research projects that help address environmental problems in NSW.

In line with the Trust's strong governance framework, all programs are independently evaluated every five years to ensure they are delivering their desired outcomes. The Environmental Research Program is currently due for review, and the Trust has approached the Office of Chief Scientist and Engineer (OSCE), within your portfolio, to undertake the evaluation.

Professor Mary O'Kane, Chief Scientist and Engineer and Ms Sally Barnes, Chief Executive, Office of Environment and Heritage, have agreed on the context of the evaluation and support the positive opportunities that will arise from this collaboration between agencies. OCSE has advised the Trust that they have the capacity and willingness to undertake the work, and staff from both organisations have been in negotiations to scope the project. The agencies have agreed that the Trust will cover the costs incurred by OCSE for the work, and the work should be completed by March 2014. I now seek your concurrence to progress this evaluation.

Thank you for your ongoing support.

Yours sincerely

Robyn Parker

Robyn Parker MP 19/12/13
Minister for the Environment

Level 32, Governor Macquarie Tower, 1 Farrer Place, Sydney NSW 2000
Phone: (61 2) 9228 5253 Fax: (61 2) 9228 5763 Email: office@parker.minister.nsw.gov.au

APPENDIX 2: PROJECT PLAN

ENVIRONMENTAL TRUST RESEARCH GRANTS – 2005-2010 GRANTS EVALUATION

PROJECT PLAN

BACKGROUND

The Environmental Trust Act 1998 was put in place to fund environmental restoration, rehabilitation, research and education and to fund land acquisition for the national parks estate. The Environmental Trust is an independent statutory body established by the NSW Government under the *Environmental Trust Act 1998* to fund a broad range of organisations to undertake projects that enhance the environment of NSW. The Trust is administered by the Office of Environment and Heritage (OEH), a division of the NSW Department of Premier and Cabinet.

Under the Act, particular structural and operational requirements for the research activities are contemplated, including formation of a Technical Review Committee, minimum level of Grant expenditure per year, establishment of research priorities and other issues.

The Environmental Trust Research Grant Program, as it operates, is a $1,000,000 annual grant program administered by the NSW Environmental Trust, with two components: Environmental Research Grants (Major Grants) and Seeding Grants.

Environmental Research Grants were offered between 1991-1995, with a break from 1996 – 1999, and then annually since 2000. The seeding grants program was introduced in 2006 as a result of an evaluation of the Environmental Research Program in 2005 by the Australian Academy of Science. In addition, the NSW Auditor-General reviewed the Trust's Environmental Grants Administration in 2009.

The objectives of the Environmental Research Grants are to:

- generate new knowledge or information to facilitate local solutions to environmental problems
- discover new methods of operation for NSW industries that are less harmful to the environment
- provide knowledge about general environmental problems
- assess environmental degradation.

Between 2006 and 2012, the program offered major grants (up to $200K) whilst in 2013 all grants were up to $150K. The funding is allocated toward research themes recommended by the Technical Committee and chosen by the Trust. The seeding grants (up to $20K) are for proof of research concepts. Note: the Trust did not offer seeding grants in the 2013 round.

Project Plan

Element	Descriptor
Project	Evaluation of the Environmental Trust Research Grant Program including to identify opportunities to maximise program impact by identifying practices and factors that lead to impactful outcomes.
Objective/ Evaluation Focus	• Evaluate how well the Environmental Research Grants Program has performed in terms of the uptake of its outputs by decision and policy makers; reach and usefulness in the wider community and industry (major grants); and ability to leverage larger grants (seeding). • Evaluate whether the program priorities (chosen annually) and program objectives

	reflect NSW Government priorities and whether the program priorities targeted have subsequently emerged as key areas of action or policy in New South Wales or where project focus has led to an area of research strength in NSW. • Evaluate how a sample of projects have made a difference to the environment of New South Wales • Evaluate how current program processes and systems affect program impact • Evaluate the effectiveness and efficiency of program governance and program administration • Evaluate implementation of recommendations made in the 2005 program review and the 2009 Auditor General's Performance Audit.
Outputs	Output of review will include a report, which will include, but is not confined to: • Recommendations • Executive summary • Evaluation methodology and consultation process used for the review • Overview of program ecosystem and background • Data and analysis o Program priorities, objectives and categories, including relevance to broader NSW Government policy objectives and environmental research grants ecosystem o List and measure of impacts from research program for grantees and end-users o Analysis of sample projects against best practice across the full spectrum of grant activity (see attached draft analysis tool); o Characteristics of projects seen as successful versus unsuccessful in terms of impact o Effectiveness of program governance: whether the current administrative and review processes and timing are the best way to ensure good projects and timely funding o Strategies across front-end and back-end processes to optimise dissemination of research outputs, knowledge generated and impact o Opportunities from the major/minor and seeding streams, o Comment on future of Program including resourcing and operations, such as mechanisms, processes or system improvements to increase outcomes from current model and/or whether new programs should be developed (alternative models).
Strategic fit	• The Auditor-General recommends the Trust should regularly evaluate grants programs to see what is working and what can be done better. • A key role of the NSW Chief Scientist and Engineer is to provide independent advice to NSW Government agencies. • A key opportunity exists for the outcomes of Trust funded research to influence practical environmental management and environmental education funded through other Trust programs.
Audience	The primary audiences for the Review report are: • NSW Minister for the Environment and Heritage • CE of Office of Environment and Heritage • NSW Environmental Trust Board, Members, Administration and Research Technical Committee
Rationale	To ensure efficient and strategic allocation of Government resources and to implement recommendations in the Auditor-General's review of NSW Environmental Grants programs (2009) to evaluate grants programs every 3 to 5 years for effectiveness, efficiency, economy and continuing performance.
Activities	**Program Ecosystem and Background** 1. Identify and understand the relationship between the research grant program and other Environmental Trust programs (including Dissemination Program) (*Trust*) and relationship to the identified priorities for the Trust and NSW Government over time. Analyse how Trust priorities relate to Government priorities, including NSW 2021 and

how objectives and priorities relate to projects (*OCSE*).

2. Scope related research grant programs available from extramural organisations (e.g. Australian Research Council (ARC), CRCs, foundations, SEWPAC, international funding bodies) (*OCSE with input from Trust*)

3. Understand the vision for the Trust and the vision for the research program over 3 - 5 years (*Trust to provide guidance*). Using this information evaluate how the vision and program priorities are set.

4. Survey at least 20 unsuccessful applicants of the major grants program in 2010 and successful seeding grant recipients to determine whether feedback was received by the Trust, and whether it was applied and applicant was successful in receiving other sources of funding. (*OCSE with input from Trust*)

5. Review implementation of recommendations made in the previous evaluation of the Environmental Research Program by the AAS (2005) and the Auditor General's review (2009) in addition to implementation of Technical Committee recommendations (*Trust to provide overview of implementation - Item 1 in Inputs below*)

6. Identify examples of best practices for research governance for the program and research projects (sources: Commonwealth Government research program reviews including the ARC, ICAC, Auditor General report, International, DPC) (*OCSE with input from Trust*)

Analysis for Program Outputs and Impact

7. Analyse selected projects, including identifying and understanding the variety of projects funded (e.g. number, fields, collaborative nature, bidding organisations and other participants, funding allocated)
    (i) template for categorising review data and information in terms of
        a. Project identifiers;
        b. Research topic and questions;
        c. Outputs, uptake and impacts of research projects
        d. Acquittal by Trust Administration based on technical review, post project completion (Unsatisfactory to Excellent)

    (*OCSE template – Trust staff populate template item 2 in Inputs below; overview document on implementation and impacts approach item 3 in Inputs below*)

8. Undertake a brief survey of grantees of major grants to identify end-users and potential impacts. Seek permission to interview identified end-users at later stage (*OCSE with Trust input).*

9. Collate inputs, including applications, reports, responses to surveys, etc. (*OCSE with Trust input*)

10. Identify at least 8 Impactful and at least 8 Un-impactful projects ('sample projects') for further analysis through a combination of review of grant reports, responses to the survey of the successful grantees to the program, citation search, and consultation with grant reviewers and Trust staff including overview document on implementation and impacts approach (*Trust to provide overview - Item 3 in Inputs below*).

    Impactful projects are defined as those which, when completed, met one or more objectives of the Research Grants program; performed well in terms of uptake of outputs by decision and policy makers, industry, other Trust programs and/or the wider community; and/or made a difference that can be measured to the environment of NSW.

11. Use inputs to identify end-users interviewees. Interview end-users (agencies and other organisations) to examine research benefits from projects and benefit (or potential) to environment/ policy/ systems/ processes/outcomes (triple bottom line), etc. Comment on role of Trust Research grants in addressing priority issues or identifying and

	informing on emerging issues and building the state's research capacity in important areas (*OCSE*). 12. Refine the draft analysis tool (*Attachment 1*) to identify processes and analyse a range of impactful and un-impactful projects across the full spectrum of grant activity, including identifying gaps/issues and identifying best practice principles/processes/minimum standards for each step (both elements for probity/program management and impact/characteristics of research project) to achieve desired program outcomes (*OCSE*). 13. Review Trust's selection and grant management processes, in light of two previous reviews and, in particular considering whether the process led to funding for impactful research, if the application process is appropriate and accessible for the grants offered and consider success factors and problems/issues in relation to program processes. (*OCSE*) 14. Use inputs to identify characteristics of impactful (and un-impactful) projects and best practice processes. Inputs include best practice standards, analysis of successful and unsuccessful projects, Trust processes, end-user and grantee inputs, population of matrix and analysis of matrix questions (*OCSE*).
Input materials	**Inputs and information requirements** 1. Trust to provide a description of the nature and extent of current activities and related management systems and procedures already in place, particularly details about changes made to the program since the 2005 and 2009 reviews. (Note: this includes systems in place to manage the grant process as outlined in Appendix 1: Draft Analysis Tool and relationship between Research Grants and other Trust programs) 2. Trust to provide information on grants (template completion) including recipient and characteristics, research topics and questions, research outputs (via Trust database and Trust input) 3. Trust to provide an overview on practices employed to drive and track research implementation and impact, including information on: a. how research implementation and anticipated impact is dealt with in the grant application process b. systems in place to track research implementation and impact (how are short and long term impacts identified, measured and attributed); c. systems in place in the Trust to promote research uptake into practice e.g. Workshops, OEH information sessions etc; d. summary of impacts (short term, long term) arising from Research Program projects from Trust's perspective. 4. Trust to confirm contact details for grantees and applicants and notify them of the evaluation and request their participation. Contact details to be provided by the Trust to OCSE of participating contacts. 5. Survey of grantees and unsuccessful applicants (OCSE) 6. Interviews, as required in particular technical committee and end users 7. OCSE to source list (from Trust, AAS or similar organisation) of related research grants programs from extramural organisations. 8. Environmental Trust's Monitoring and Evaluation Plan, Schedule C approach 9. Criteria and process documents; Guidelines for applicants, Guidelines for assessment committee including scoring system, forms, website Information 10. 2005 - 2010 Major Grant Applications (two stage) 11. 2005 - 2010 Major Grant Reports – progress reports, final completion report, uptake report 12. Major Grant contract example 13. 2006 - 2010 Seeding Grant Applications (one stage) 14. 2006 - 2010 Seeding Grant Reports – progress reports, final completion report, uptake report 15. Seeding Grant contract example 16. OEH Knowledge Statement, State of the Environment Report and any other related mandates or policy statements affecting the Research Grants program and the

	selection of priorities 17. 2005 Evaluation Report of the Program_AAS 18. Auditor General's Report on the Program 2009
Initiation date	September 2013
Completion date	December 2013 (Note: Recommendations to Technical Committee by 15 November for consideration at Trust meeting 3 December for 2014 Round)
Governance	• The project will be overseen by the NSW Chief Scientist and Engineer • The project will be managed by the Director, Office of the Chief Scientist and Engineer
Resources	The Project will be undertaken by: 1. OCSE staff within existing resources. 2. Potential external subcontractor to OCSE 3. Staffing support from OEH/Trust OCSE will seek to recover expenses from the Trust for resourcing and other costs. A Letter of Agreement will be completed between the Agencies for this project.
Project Interface	OCSE will consult with, as required: • Environmental Trust Board and Technical Committee • Environmental Trust secretariat • Office of the Minister for the Environment and Heritage • Office of Environment and Heritage • Environment Protection Authority • Other NSW Government agencies as needed • Research grant recipients • Unsuccessful Research Grant applicants • End-users of research outputs (e.g. industry, academics in related fields, NSW Government agencies, etc) • Reviewers of projects at application and project stages
Addendum	The following points be included to clarify specific matters within this Project Plan: • Activities – Program Ecosystems and Background – should read "…*to determine whether feedback was received <u>from</u> the Trust,* …" (Point 4) • In line with the government's customer service focus, the Trust would like to reinforce the importance of the survey of grantees (Activities – Analysis for Program Outputs and Impact, point 8) and end-user interviews (point 11) to ensure appropriate evaluation of, and clear guidance on, the relationship between the Trust and relevant parties (such as both successful and un-successful applicants). The Trust will assist OCSE in these activities as required • In line with the original brief, OCSE will include in the final outputs information analysis and advice on how research priorities should be determined for each round.

Attachment 1: Draft Analysis Tool

	Trust Program			**Individual projects**				
	Mandates/ policies	**Priority Setting**	**Application process**	**Selection of grantees**	**Contract stage**	**Undertaking research activities**	**Monitoring and reporting**	**Dissemination of results and findings**
Steps and pivots	• NSW 2021 plan • Legislative requirement • International conventions • National obligations • Needs of OEH, EPA, and Trust-programs • Results from the *State of the Enviro Report* • OEH Knowledge Strategy …etc	• Grant round prioritisation process • Priorities – articulation and clarity • Performance indicators … etc	• Guidelines • Application • Eligibility and assessment criteria and process … etc	• Committee expertise • End-user involvement in project selection (Trust)? • End-user involvement in project development (Applicant)? … etc	• KPIs, milestones • Project plan (PP) • Dissemination and implementation plan … etc	• Collaborators and project partners • Funding adequacy • Access to infrastructure, sites … etc	• PP review (Applicant and Trust) • Contribution to objectives and priorities • Impact on scale of NSW research capability … etc	• End-user engagement • Trust Programs • Seeding new work – (Seed program) • Data repository and availability • *State of the Environment report* content • Uptake into other Trust programs • Uptake into Government practice or policy • Uptake by industry or community … etc

APPENDIX 3: FUNDED RESEARCH PROJECTS 2005 – 2010

Organisation	Category	Project title	Amount ($)
2005 Major			
University of New South Wales	Biodiversity	Hidden Losses: Identifying Co-extinction of Fauna on Threatened Plants	99,968
CSIRO Land & Water	Hazardous Substances/Waste	Developing Soil Criteria for Beneficial Reuse of Waste Materials	192,332
CSIRO Marine & Atmospheric Research	Atmosphere	Aerosol Formation in Australia's Native Forests	82,173
CSIRO Energy Technology	Atmospheric	Chemical & Physical Characterisation of Fine Particles in Sydney	99,953
Department of Environment and Conservation	Hazardous Substances/Waste	Amphipod Embryogenesis as a Rapid Bio-indicator of Sediment Quality	199,000
Macquarie University	Atmospheric	Sources of the Organic Fraction of Atmospheric Fine Particles	94,597
University of New England	Social and Economic	Determining Landowners' Willingness to Participate in Offset Markets	79,360
University of New England	Hazardous Substances/Waste	Bioavailability and Risk from Antimony and Arsenic Contamination	100,000
University of Sydney	Atmospheric	Symptoms, Allergy and Personal Exposure to Plane Tree Bio-aerosols	99,989
Macquarie University	Hazardous Substances/Waste	Assessment and Management of Groundwater Fauna at Contaminated Sites	148,522
2006 Major			
CSIRO Energy Technology	Waters and Catchments	A Genetic Approach for Rapidly Assessing Sediment Diversity	162,937
NSW Department of Environment and Conservation	Waters and Catchments	Development of Ecosystem Function Indicators for Riverine Estuaries	189,000
Department of Environment & Conservation	Hazardous Substances/Waste	Measurement of Polar Organic Pollutants in Environment by LC-MS	99,828
Department of Environment & Conservation	Hazardous Substances/Waste	Using Micro-Contaminants to Fingerprint Complex Organic Wastes	86,807
Office of Environment and Heritage, DPC	Waters and Catchments	Vegetation Change on Endangered Coastal Floodplains	190,00
RMIT University	Waters and Catchments	Salinity and River Biodiversity Varying Salinity and Other Stressors	80,224
University of New England	Waters and Catchments	Measuring Ecological Success of Regional Urban Stream Restoration	137,200

University of Wollongong	Waters and Catchments	Natural Versus Human Impacts: Management of the Macquarie Marshes	199,216
University of Wollongong	Waters and Catchments	Improving Management of Salvinia in Temperate Aquatic Ecosystems	192,871
University of Wollongong	Hazardous Substances/Waste	Diffuse Gradients in Thin Films to Quantify Anionic Metals	98,754
2006 Seeding			
University of Sydney	Waters and Catchments	Biological Control of Algal Blooms in Centennial Park	20,000
University of Sydney	Waters and Catchments	Evaluating Cost-effectiveness of Reducing Water Pollution Risks	19,909
University of Wollongong	Environmental Noise	Does Marine Noise Impact on Invertebrate Dispersal and Settlement?	19,615
University of Wollongong	Waters and Catchments	Community Valuations of Environmental Quality in Coastal Lakes	11,000
2007 Major			
Australian National University	Water and Catchments	Sewage Effluent: Impacts on Land, Estuaries and Beaches, Merimbula NSW	49,400
CSIRO Energy Technology	Air	Contribution of Vehicle Emissions to Fine Particle Composition	100,000
CSIRO Sustainable Ecosystems	Biodiversity/Biophysical	Integrating Strategies for Restoring Grassy Woodlands	112,191
CSIRO Sustainable Ecosystems	Biodiversity/Economic	Linking Incentives to Outcomes for NRM	193,533
NSW Department of Environment and Climate Change	Water and Catchments	Rapid Assessment of Cumulative Stressors on Fish Populations	100,000
Office of Environment and Heritage, DPC	Water and Catchments	Nutrient Transformation and Attenuation Within Tidal Rivers	100,000
NSW Department of Primary Industries	Biodiversity/Biophysical	Experimental Cultivation and Rehabilitation of Seagrass	172,425
University of Ballarat	Biodiversity/Biophysical	Biodiversity Impacts of Partial and Total Ground Tank Closure	170,127
University of Canberra	Water and Catchments	Stress Measurements in Molluscs: Linking Exposure and Response	100,000
University of New South Wales	Water and Catchments	Upper Trophic Level Dynamics in the Macquarie Marshes	99,396
Australian Catholic University	Biodiversity/Biophysical	Mosquito Control, Saltmarsh and Insectivorous Bats: Seeking a Balance	185,552
2007 Seeding			
Office of Environment and Heritage, DPC	Hazardous Substances/Waste	Rapid Assessment of Dioxins Using Immunoassays	20,000
Office of Environment and Heritage, DPC	Air	NSW Low Emissions Innovation Cluster	20,000
University of Sydney	Hazardous Substances/Waste	Phytoremediation of Arsenic Contaminated Sites: A Feasibility Study	19,601

University of Western Sydney	Waters and Catchments	Ameliorating Soil Sodicity Using Calcium Salt Incorporated Hydrogels	19,950
University of Wollongong	Biodiversity – Scientific	How Can Restored Plant Communities Resist Future Invaders?	19,840
University of Western Sydney	Hazardous Substances/Waste	Remediation of Dioxin-contaminated Soils by High Power Ultrasound	15,700
2008 Major			
CSIRO Energy Technology	Air/Social	Fine Particle Carbon Fraction: Limits of Control	199,550
CSIRO Energy Technology	Air/Social	Sustainable Energy Planning to Reduce Environment Impacts	199,800
CSIRO Future Manufacturing Flagship	Hazardous Substances/Waste	Ecotoxicology of Manufactured Nanoparticles in Natural Waters	99,998
CSIRO Ecosystems Sciences	Biodiversity	Assisted Colonization to Maintain and Restore Grassland Ecosystems	100,000
CSIRO Ecosystems Sciences	Biodiversity	Conservation Management Under Climate Change	99,426
Office of Environment and Heritage, DPC	Biodiversity	Assessing the Vulnerability of Coastal Wetlands to Sea-Level Rise	98,980
Sydney Institute of Marine Science (SIMS)	Biodiversity	Expatriation of Tropical Fishes to NSW: Climate Change Effects	95,066
University of Sydney	Biodiversity	Restoring the Ecosystem: Storage of Carbon in Soil by Microbes	99,990
Australian Museum	Biodiversity	Monitoring the Response of NSW Bivalves to Changed Environment	17,800
University of Newcastle	Biodiversity	Understanding Micro-Evolutionary Responses to Disturbances	16,875
University of Wollongong	Hazardous Substances/Waste	'Sponge Watch': Assessing the Utility of Sponges as Biomonitors	19,909
2008 Seeding			
Office of Environment and Heritage, DPC	Hazardous Substances/Waste	Lead Isotope Fingerprinting for Sample Matching	19,930
University of Western Sydney	Biodiversity	Tracking Down a Biodiversity Killer- The Red-Eared Slider Turtle	19,842
2009 Major			
CSIRO Land and Water	Hazardous Substances/Waste	Environmental Risk Assessment of Selected Human Pharmaceuticals	200,000
Office of Environment and Heritage, DPC	Hazardous substances/Waste	Resolving the Sources and Fate of Hydrocarbons in Groundwater	199,970
Environment Protection Authority	Environmental noise	Validation of Inversion Strength Estimation Method	50,000
NSW Department of Environment and Climate	Water and Catchments	Remote Sensing, Biogeochemistry and Optics of Coastal Algal Blooms	100,000

Change			
Murray-Darling Freshwater Research Centre	Water and Catchments	Impact of Sulfidic Sediments on the Viability of Dormant Propagules	99,286
Sydney Metropolitan Catchment Management Authority	Water and Catchments	Evaluating Urban Stream Remediation Techniques: Cooks River, Sydney	50,000
University of Sydney	Hazardous substances/Waste	Bioremediation for Organochlorine-Contaminated Groundwater	199,671
University of Canberra	Hazardous substances/Waste – economic	Bioaccumulation and Chronic Effects of JH Mimics in Honeybees	39,538
2009 Seeding			
Macquarie University	Waters and Catchments	Remote Sensing of Water Temperature and Salinity Profiles	20,000
University of New South Wales	Air	Online Vehicle Exhaust Monitor	20,000
University of Sydney	Biodiversity	A New Tool for Assessing Ecological Integrity in Urban Landscapes	19,494
University of Sydney	Waters and Catchments	Community-based Solutions for Sustainable Water Systems	19,950
University of Wollongong	Hazardous Substances/Waste	Novel Approach for On-site Landfill Leachate Treatment	19,800
2010 Major			
CSIRO Ecosystem Sciences	Biodiversity and Conservation	Restoring Biodiversity in NSW Through Biocontrol of Mistflower	95,016
CSIRO Riverside Corporate Park	Resource efficiency and sustainability	Sustainable Energy Deployment Within the MAQS Region	99,980
University of New South Wales	Environmental pollution	An Integrated Instrumental Approach for Tracking Pollution to Source	99,958
Southern Cross University	Climate change – biophysical	Multigenerational Impact of Climate Change on Marine Life Histories	195,786
University of Newcastle	Resource efficiency and sustainability	Char from Black Coal Tailings for Fertiliser and Carbon Storage	99,930
University of New England	Climate change – biophysical	Biodiversity Resilience Under Climate, Land Cover and Land Use Change	150,000
University of New South Wales	Climate change – biophysical	Dynamically Downscaled Climate Projections for the Eastern Seaboard	199,856
University of Sydney	Biodiversity and Conservation	Benchmarks for Ecological Function in Urban Ecosystems	99,882
University of Wollongong	Climate change – biophysical	Climate Change Impacts on Bushfire Fuels	196,619
University of Wollongong	Environmental pollution	A Rapid Pre-screening Technique for Bioavailable Metals in Sediments	79,000
Macquarie University	Climate change – biophysical	A New Approach to Extracting Hydrological History from River Red Gum	20,000

2010 Seeding			
NSW Department of Primary Industries	Biodiversity and Conservation	Developing Next Generation Sequencing for Biodiversity Assessment	20,000
Monash University	Integrated Landscape Management	What Lies Beneath? A New Method to Map Sub-surface Acidity	20,000
University of Newcastle	Climate Change	Local Sea-level Rise in the Coastal Waters of NSW	20,000
Macquarie University	Environmental Pollution	Assessing Groundwater Fungi as Novel Bioindicators of Contamination	19,264
University of Wollongong	Resource Efficiency and Sustainability	Microbial Filtration Using Carbon Nanotube Membranes	14,950

APPENDIX 4: OUTCOME OF SURVEYS AND END-USER INTERVIEWS

Note: Due to confidentiality of the survey, only de-identified information is included and/or specific responses are paraphrased or summarised.

Survey of Major Grant Recipients

Total projects funded 2005-2010: 61; Total emails successfully sent: 57; Online survey responses: 10; Phone survey responses: 7
Survey response rate: 30%

1. Type of organisation:
State Government Organisation – 35% (6); University – 41% (7); National Research Institute – 18% (3); Other Research Institute – 6% (1)

2. Respondents who were the lead researcher – 100% (17)

3. How do you think your research benefited the environment of NSW?

- Most responses provided specific information about the outputs and outcomes of the project, including how the results can and are being used by state and federal government agencies (several with results being used to improve regulations and compliance), other researchers, industry and the community
- In general terms, outputs noted include, for example, tools for assessment of risk in the environment, rehabilitation techniques, index for monitoring environmental conditions, knowledge about native species reaction and risk to events related to climate change, methods to monitor biodiversity of natural systems, remote sensing measurement techniques, etc.

4. Did you involve a potential end-user(s) in the planning phase of your research project and/or the application process for a Trust grant? (An end-user is a person, body or organisation that implements the research into practice.) How did you include the end-user in your research project and what stage?

Yes – 70% (12)

- Discussed research project with government agencies, other researchers or private companies at the scoping phase, including to generate the research idea and/or determine what needs to be achieved and the constraints – (6)
- Collaborated with another researcher(s) throughout all phases of the research project – (2)
- Worked with a private company throughout all phases of the research project – (1)
- Worked with government agency through all phases of the research project – (3)
- Other comments: results of research were being fed into review of NSW policy; consulted with government agencies through research to determine data collection sites; project conceived out of NSW MER framework; project results being fed into revised government sediment quality guidelines
- End users and collaborators included NSW EPA, NSW DPI, NSW OEH, former NSW DECC, private companies, CSIRO, universities

No – 30% (5)

5. Would you see any merit in involving a potential end-user in future projects? If so, please discuss what merit you would see in involving a potential end-user in a future project. If not, why do you not see merit in involving a potential end-user in future projects?

Yes – 76% (13)
Comments:

- Good to get end-users involved from the start of the project and/or at the planning phase to achieve outputs sought by the end-user – (4)
- Working with the end-user should ideally occur at all stages of the project, including 'on the ground'
- In the case of working with a private company, it was helpful to tell the company what was required, what the researcher is offering, what it was going to cost (time and

money) and to build a relationship through ongoing discussions which led to a working agreement over the use of sensitive information. Working with the company helped clarify expectations on all sides

- Often with the short duration of the grant (three years), it can be difficult to refine the scope for a specific end-user, but early collaboration with an end-user where possible is beneficial
- Collaboration between the researcher and other agencies promotes networking between agencies and researchers, allowing proper scoping and better uptake of results
- It's a win-win if an end-user can inform the research directions without undermining the research
- End-users can bring new insights to the project that could lead to wider take-up of results
- End-users may be abreast of any changes in government policies and policy, including areas that may have become more urgent
- Involving the end-user helps interest them in the research topic as well as provide local knowledge to aid the research project
- It is crucial for ET funded research to be proposed in close consultation with NSW government agencies to ensure outputs deliver information to address NSW government priorities; in some cases, this may be through collaboration with a NSW government scientist
- End-user involvement is useful in making sure research addresses their needs. Types of end-users can be industry, a regulator or other stakeholders

No – 12% (2)
Since work so closely with end-users, keenly aware of their needs already

No response/Maybe – 12% (2)
Depends on the nature of the project. End-user involvement is helpful in that they can give the research good perspective, giving it purpose rather than just being pure research for an academic audience. It is also useful when evaluating and/or testing the effectiveness of a developed tool as part of a project, but sometimes it is too early to know if a tool will be viable or useful, so end-user involvement at that stage is less helpful

6. Did you communicate the results of your research to end-users (e.g. government, industry, community, etc.) who could benefit from the knowledge? If so, please specify who you targeted and how you reached them. If not, why not?

Yes – 94% (16)

- Published academic articles in journals and/or presented at conferences or seminars and/or results published in conference papers – (6)
- Research presented at a networking event, seminar, briefing or workshop with government and/or industry – (9)
- Provided results to community group
- Published in magazine article, web resources and flyers
- Final report will be published as a discussion paper on NSW government agency website to notify industry and the community and seek their feedback. The results are being used to inform a review of a major NSW policy
- Provided a private company annual reports on the progress of the project
- Held meetings and presentations with local government
- Made a presentation on the technique at an international workshop and have collaborated with a researcher from Europe interested in the technique
- Working with CSIRO to develop a new project based on the ET funded project
- Provided the final report to the Trust – (4)
- Meetings with policy makers within NSW Government agencies – (4)
- Visited industry site with interest in using technique to assess contamination
- One seminar was a day-long event dedicated to the project, with all the end-user groups identified in the project
- A project was presented as part of a national roadshow with representatives from industry and government
- Paper has been distributed to colleagues within DPI

	• Results were included in the State of the Environment report and State of Catchment report Note: some respondents communicated results in multiple ways
	No – 6% (1) • Project still underway
7.	**Did you encounter any barriers or challenges to disseminating your research results? If so, what were the barriers or challenges and how did you overcome them?**
	Yes – 18% (3) • There were commercial-in-confidence issues for researchers who used industry data when attempting to publish the results, which were eventually resolved • We could have done more with time and commitment • The final report provided to the Trust has never been published (online or elsewhere), with some of the data in the form of the report • Funding from the Trust to a state government agency was delayed, which meant the timeframe to spend the funds was significantly reduced due to net cost of services
	No – 82% (14) • The Trust is good about helping with this • The university was also able to provide money for workshops • Noted that industry was unhappy that the outcomes of the research led to tighter restrictions
8.	**How do you think dissemination of your research could be improved? What could you do? How can the Trust better assist researchers to bolster the impact of their research? Are there other ways to disseminate your research results?**
	• Suggest Trust hold an annual meeting/workshop/seminar series where grantees present their work – (9) • Comments supporting a workshop: This has worked well with other funding programs; a previous Trust funded workshop was very useful (3); OEH previously ran an invitation only seminar on air quality and results from Trust related research projects could be discussed in a section of these types of workshops; an informal seminar can be presented at OEH or the Trust, locally or at head office; would be good for Trust funded researchers to get together for a seminar; all participants could chip in each year to run a workshop with Trust grantees and end-users (e.g. managers, government agencies, consultants, etc.) should be invited; good to have a formal event like this run by the Trust; Trust could hold an expo day or once-a-year roundtable discussion (open forum for consultants, councils, state agencies, etc.) where lead researchers discuss the implications of their projects • Trust could work within professional societies (e.g. The Marine Science Association, SETAC, etc.) which tend to hold annual conferences. Trust funded researchers could present findings at these events to reduce the cost of holding a stand-alone workshop whilst reaching the intended target audience • Provide an option to publish the reports online on Trust website to make them publically available – (3) (since reports are reviewed by the Trust, the quality can be assured to a reasonable standard) • Trust could provide a mentor to new grantees; someone who has undertaken a funded Trust project previously who can help first-time grantees about how to scope their project and manage it to completion. Helps to draw from lessons learned and share knowledge • The Trust could publicise outcomes through press releases • Biggest problem is identifying the end-users for the work – could be consultants, university researchers or government agencies. Scientific publications are good for disseminating to some users, but not all • Main means of dissemination is via peer-reviewed literature and the Trust cannot really help with this • It's the researchers responsibility to engage and disseminate the findings; there's not much the Trust can really do – (2) • While my team has appropriate capacity to brief relevant government departments and individuals within government, other groups may not. Note this is an ongoing process to maintain a commitment to communication that extends beyond the term of the grant

- Dissemination could be improved through wider dissemination of the project results to include agencies and industry as well as an international journal publication
- Project resulted in one journal article; project needed further funding; Trust seems reluctant to fund ongoing work under a similar vein as that previously funded
- Resolve net cost of service issues between government agencies so it's easier to fund projects over one financial year

9. Please outline instances where your research outputs have been implemented or taken up by an end-user. Identify who the end-user was and how your research was used. (Note: this questions was answered on the online survey only)

Comments:

- Research outputs are still in the process of being published. However, the EPA reviewed the draft final report and indicated that results would influence the review one of their major policies
- Work highlighted issues that are now considered more thoroughly than would otherwise be, but it is complex and hard to address in this way
- The next stage of our research was not funded
- Research prompted great interest in relation to using the topic of study to monitor river health (although researchers not sure whether it eventuated)
- DPI used the research outputs to assess a proposal for increased commercial activity of a species
- The researcher(s) is using the results themselves to undertake a rehabilitation project in the study area
- The research outputs have been fed into and accepted by OECD (international) and DSEWPaC (Commonwealth regulator), in relation to toxicity of a type of material, to aid their planning and management of those materials
- The project outputs can be used by industry, regulators and scientists to upgrade projections on energy use in NSW
- Results have been used in state-wide reports, including monitoring and evaluation (M&E) reports, catchment reports and state of the environment reporting.
- Results entered into database that is available to national and international researchers in the particular field for algorithm development
- Results have formed the basis for major monitoring and management framework and used in ecological models of rivers state-wide

10. Please outline any other direct or indirect impacts (to either the grantee or the end-user) that resulted from the project (e.g. academic outputs, new partnerships / collaborations, leverage, external funding etc.).

Comments:

- Networks/collaborations were strengthened as a result of the project, including international and across agencies – (3)
- Assisted in enhancing the output of the team and in raising its status in environmental research
- The ET project helped leverage funding for a rehabilitation project
- The project was conducted in collaboration with a CSIRO group and the collaboration developed was strong. The project leveraged further funding from the CSIRO flagship to match ET funding. The project elevated OEH as an end-user and developed strong networks with several established, national networks and working groups in the area. The outputs from the project will feed into a future proposal
- Increased public awareness of the impacts of climate change on specific species
- Positive aspects are the opportunity to liaise with NSW Government scientists and publish the results from the ET funded project
- Project generated national and international interest and grantee was invited by US research institute to describe methodology used in the project
- Academic papers, briefings, and/or presentations – (6)
- Outputs of project were leveraged into ecological models which are widely used across locations in NSW
- Collaborating with international researchers; work with NSW Government agency that is offshoot of the project work
- Haven't yet leveraged further funding for next stages of work, but are working on it (mainly ARC applications) – (3)
- Using outputs for a rehabilitation project and are looking to apply for ET's rehabilitation program

- Educational outcomes include honours students and/or PhD students who worked on the project and got their degrees – (2)
- International researchers from overseas took the technique back to their country
- Developed new research project with CSIRO using outputs of project
- Timing of project was just right with international team working on similar technique at the same time, with simultaneous technology advances. Has led to paradigm shift in the field, with global impact
- Built relationship with private company who tracked outputs of research project; showed them scientific outputs of lab are solid
- Projects excellent in promoting capacity building in the field of environmental research, whether it be through giving a leg-up to early-career researchers or providing for collaborations between institutions/agencies
- No results yet, but may come out once final report is finalised and project results become public
- One respondent commented it was their knowledge that grantees are not allowed to use ET grants to leverage funding, but thought maybe that had changed

11. How was your experience in dealing with the Trust's grant administration process (from original EOI to Final Report)? Please describe.

Professional, competent, easy, responsive and/or effective process and/or staff – 94% (16)
Other comments:

- The Trust was flexible – (2)
- It may be beneficial to have more contact with the Trust than the current yearly intervals (suggested 3 monthly)
- If you are unsuccessful for a grant (EOI), there is little feedback about why it was unsuccessful or how the application could be improved
- Trust staff seem to change frequently so hard to build rapport
- The process from EOI to payment takes a long time
- A full application was lost
- Trust staff are rigorous in maintaining reporting requirements
- Appreciated receiving the independent review of the final report
- There were delays in payments due to the Trust and the University, but reporting dates were not changed
- Suggestion the Trust staff maintain less minimalistic contact and assist researchers to work through issues related to state government agencies
- Trust staff take a hands-on approach with high workload
- Trust was particular regarding budget reports; it was hard to plan in advance how all money will be spent; if deviations are made, there is a lot of paperwork

12. Please provide any feedback about how the Trust could improve its funding processes and/or engagement with grantees.

- Increase the size of the program budget for grants – (3)
- The 2-stage application (EOI) process is fair, efficient and/or supported – (4)
- Grant size (150K over 3 years) is too low to provide sound quality research at world class level and/or impactful research and/or to meet wages – (4)
- Be open to funding projects of larger scale that may provide high impacts with solid end-user take-up; maybe ideal to have mix of larger projects with those that fall within current funding restrictions
- Could be merit in brokering projects in a specific area which could be larger amount of money (i.e. seeking EOIs from experts to address a major issue); could reduce the large number of applications and allow more collaboration rather than a grant that works for one group only
- Current category system is a bit unclear; if the NSW knowledge priorities were more clearly articulated, it may lead to better proposals more closely aligned with Government priorities; potential to be more prescriptive in projects needing funding without stifling imagination of research proposals
- Research groups can take 1 – 2 years to prepare for an ET grant through exploration of an issue and its feasibility. It would be helpful to flag priorities in advance to be able

to ensure better outcomes and higher probability for success by allowing time to put resources into testing the research project concept before submitting an application

- Consider more open call for submissions rather than one sorted into different categories each year
- Request for flexibility in due date for final report to accommodate PhDs, which generally take 3.5 years; suggestion for extra year (with progress report due at end of third year) if postgraduate student is involved, even if funding is expended after 3 years
- Request for feedback if grant is unsuccessful
- Develop system so applicants are notified that their submission has been received and is in the system
- Consider speeding up time between EOI and commencement of funding
- More publication of Trust funded research
- Delays from Trust and university meant major delays in payments, but not always with reporting deadlines
- Trust allow more time to finalise projects
- Consider increasing number of small grants awarded (had several productive small grants)
- Work through the net cost of service issues with other government agencies and provide advice on how to manage issue to grantee
- While the engagement process is OK for NSW Government applicants, it is anticipated that engaging with State Government agencies for external researchers may be difficult

Survey of Seeding Grant Recipients
Total projects funded 2006 – 2010: 22; Total emails successfully sent: 22; Online survey responses: 4 *Survey response rate: 18%*
1. Type of organisation: State Government Organisation – 25% (1); University – 75% (3)
2. Respondents who were the lead researcher – 75% (3)
3. Do you think the Trust's seeding grant program is worthwhile? Please explain your reasons.
Yes – 100% (4); provided funds to explore new project; allowed initial results to be collected to support application for larger competitive national grant; good for early career researcher; grant used to develop technology; level of funding not available at host institution
4. Was your seeding grant a precursor for a major research grant from the Trust? If so, please provide details about the research project which was awarded a major Trust grant. If not, why not?
No – 100% (4); the project was large and outside scope of Environmental Trust research grants program; project still in planning phases and obtaining more results and/or developing technology further prior to applying for larger grant – 50% (2)
5. Did you receive or request feedback from the Trust on the outcomes of your seeding project? If so, was the Trust's feedback useful or constructive? How? If not, why not?
Yes – 50% (2); feedback was useful – 50% (2); highlighted areas for ongoing work
No – 50% (2); didn't realise could apply for feedback – 50% (2)
6. What research outcomes have you achieved since submitting your seeding grant final report to the Trust? Please describe the outcomes
Leveraged further funding – 25% (1); Academic outcomes – 50% (2); commercialised research – 25% (1) Published journal article and completion of PhD; presentation of work at conference and preparing submission to journal; developed and tested technology with results published in peer reviewed conference paper; started patent process
7. How do you think the Trust's seeding grant program could be improved?
• Program is good as it is • Take more notice of priorities to help Universities prepare and select the most appropriate applications to be submitted within the application limits • It would be good to receive feedback on grant applications, whether successful or not, which would be helping in planning future grant applications • It would be good if both seeding and major grants were available each year • More direct involvement by the Trust with researchers may ensure better outcomes, particularly helping them connect with the environmental needs of the government and regulatory agencies

Survey of Unsuccessful Applicants for Major Grants
Total emails successfully sent: 210; Online survey responses: 25 *Survey response rate: 12%*
1. Type of organisation: State Government Organisation – 20% (5); University – 56% (14); Local/regional authority – 8% (2); NGO/community organisation – 8% (2); Other (consultancy) – 8% (2)
2. Was the application an EOI or a full application?
EOI – 80% (20); Full application – 8% (2); Both – 16% (4); No answer – 12% (3)
3. Why did you apply to the Environmental Trust's Research Program for grant funding?
• The research was in an appropriate field, was relevant to NSW or government agencies and/or met the criteria for the program – 60% (15) • Believed there was a gap in knowledge and local decisions were being made without full understanding • Few opportunities for community organisations to apply for research funding to support core work • The Environmental Trust is the most relevant funding body for government research scientists working in associated research disciplines • The proposed work filled an important gap in knowledge – 8% (2) • To fund research that is otherwise unfunded • Sought funding to carry out project in conjunction with another NSW government agency • To fund research into upgrading technical equipment • Funds to support a PhD student results of the study informing NSW Government agency
4. Following your unsuccessful application for research funding, did you request feedback from the Trust as to why your application was unsuccessful and/or how you could improve your application for funding in the future? If so, please comment on the nature of the feedback you received and how it was used. If not, why not?
Yes – 32% (8); No feedback was supplied when I asked – 12.5% (1); feedback was generic and/or unhelpful, based around program being competitive and/or didn't help us to improve a new application – 75% (6); received specific feedback on problem with application – 12.5% (1)
No – 64% (16); Didn't know feedback was an option and/or it wasn't offered and/or thought it would be automatic – 50% (8) ; thought would get standard response that program is competitive and/or knew program was competitive – 25% (4); too busy/didn't bother – 19% (3); thought project may have been too political – 6% (1)
No response – 4% (1)
5. Were there other pathways available to you to fund your research project?
No – 76% (19)
Yes – 20% (5) • **What are the other options?** Biodiversity grant (Commonwealth); ARC grants; internal university grant; internal NSW government agency funding; private consultancy • **Did you apply for another grant?** Yes – 60% (3); No – 40% (2) • **To whom?** Biodiversity Fund – (1); ARC – (2); Internal University Grant – (1) • **Was it successful?** Yes – (2); No – (1) • **Had the scope changed?** Yes – (1); It is a larger project with a larger facet of products; No – (2)
No response – 4% (1)
6. Do you have any comments about the Trust's application process for research funding or suggestions on how the program could be improved? If so, please

discuss.
• The 2-stage application (EOI) process is fair, efficient and/or supported – (5) • More specific feedback (not generic) would be helpful and/or providing peer review comments to unsuccessful applicants would be appreciated – (6) • More specific priority themes are requested – (2) • Preference for broader themes (rather than narrowing) and/or widening of categories to include qualitative surveys of environmental values – (2) • More detail about how applications are evaluated (and the specific criteria judged against) and/or a more transparent process – (2) • Provide guidance around contacts in NSW Government who may support or be interested in work • Provide more funding to the grants program overall and/or support high priority research (fits niche between 'small' and 'large'; many large funding programs have been cut; good projects of high relevance to government agencies go unfunded; alternative sources hard to find) – (5) • Improved application system (application/EOI was either lost and/or form is cumbersome with tight restrictions) – (2) • Allow more space on application for track record of applicant, particularly scientific outputs • Support for 'restrictions' on application form to level the playing field and keep focus • Request for researchers with expertise in particular areas to be invited for review and decision making • Request for use of NSW Government's electricity dividend to support sustainable technology research • Perception that funding source is designated for government research agencies and/or favours biological or ecological projects and/or projects of state-wide significance. Request for clarity around these perceptions – (4)

Summary of End-user Interviews

Note: Due to confidentiality of the interviews, only de-identified information is included and/or specific responses are paraphrased or summarised.

End-user conversations
Total end-user discussions: 13
1. Type of organisation: State government organisation – 23% (3) ; Commonwealth government organisation – 23% (3); University – 15% (2); Council – 15% (2); Private company – 8% (1); Community Group – 8% (1) Other research organisation – 8% (1)
2. How were you involved with the project? How did you find out about the research? Did you help plan the project? Did you work with the researcher while the research was being undertaken? What interaction did you have after the research was completed?
100% (13) of the interviewees were familiar with the research. • Seen the researcher give a number of presentations on the research, including at conferences. Researcher has since been invited to give presentations at this school • Found out about this research through working with the researcher on core work. Involved in this project from the planning stage • Worked on the project as a technician, so wasn't involved in any of the planning or reporting for it. Put onto research by Honours supervisor, who was involved in it. Continued to work with the researchers involved since the project's completion. • Previously had own grants program, funding a similar (smaller) study prior to this Trust funded project - perhaps this was a foundation, or pilot study for the larger project. Definitely involved with the smaller study, and would have had some liaison with the researchers and/or the OEH/National Parks officers they would have been working with • Possesses knowledge of some of the techniques the researcher has been using. Knew about project from past collaboration with the researcher. Currently looking at collaborating with the researcher for a project leading to application of the technique in this area • Wasn't specifically involved in the project, but have heard the lead researcher give presentations on it. Wasn't specifically aware that this project was funded by the Trust • This was part of a long-term project. Weren't involved in the planning at all. Didn't get to work with the researcher while the research was being undertaken – overall, communication was extremely disappointing • Part of a technical committee for an umbrella of projects relating to this one at the time. A technical working group was established between the end-user and the universities that had the funding to do this work. Came into the process after the planning had been completed for the project, but was able to work with the researcher while the work was being done. Have a good working relationship with the university, and continue to collaborate closely with them since the project was completed • Worked with the lead researcher on various things for some time. This project involved modelling which is very relevant to the end-user's needs, despite them not being part of the planning process for the work. Continues to collaborate with the researcher on a regular basis • Aware of this research, but was not directly involved with it. Contacted by a work colleague (who has since left the company) and was filled in on what was being done • Collaborated with the lead researcher for many years now, so would have been informed of this project as he was working on it, and given a copy of the results once it was completed. Didn't really have any input into the planning of this project, and didn't have too much to do with the work itself, aside from giving a few places where this research could be carried out. This particular research contributed to a much broader knowledge base on this topic • Wasn't involved in the project. Council wasn't really involved like stated in the application (confirmed by the researcher). Knew about the academic paper that was published and would have used it when developing a recent policy on the topic

- Provided them with access to facilities for their sampling activities. They (approached end-user) with the research proposal. Wasn't involved in planning for the project. Didn't work with them on the project per se, but rather accompanied them on site. Swapped a couple of brief emails since the work was completed, just finding out about results, etc.

3. Would you have considered the relationship a partnership? Why or why not?

Yes – 38% (5)

- Collaborating with each other for some time, including for a project previously funded by the NSW Trust
- Been collaborating with each other for a while now, with this relationship ongoing. Now have a couple of PhD students working on a project that was made possible by the tools developed from this research
- This work was part of a larger project that we were a part of. Thus worked towards the same goals and freely communicated progress
- Considered this a research partnership
- Technically it was a partnership

No – 62% (8)

- Was only informed of the project after work was underway/had been completed (3)
- Aware of the research and looking to collaborate with the researcher in the future for applying these techniques in their area, but at the time it wouldn't have been a partnership
- Only involved in carrying out the research, not any of the higher level stuff
- Didn't contribute any funds towards the project. It is not in my view on what a partnership is

4. How did the researcher communicate with you? Was the researcher aware of your needs? Did the means of communication work for you? Why or why not? What ways could it be improved?

- Through conference presentations which provided an understanding of the work that had been done and what had been achieved
- Had conversations about the technique and the work the researcher was doing, along with future research directions. As a result the researcher was aware of end-user needs when working on the technique
- The lead researchers' superiors/line managers put them in contact originally, but become closer since then as their lines of research are so similar, making the researcher's work directly relevant to the end-user's needs
- The researcher got in touch through work as a working relationship was already established. End-user was unsure if they were aware of their needs specifically, but they would have had an idea about the sort of things we were doing/trying to achieve
- Employed by the researcher; all worked in the same building, so were able to maintain constant contact throughout the project fairly easily
- The researchers would have liaised with Council, but would have had a lot more to do with OEH/NPWS, in particular with an officer who was previously involved with this work. Given the smaller study funded prior to this project, they would have been aware of this group's needs. Can't be certain as to how communication could be improved
- Communicated via email. The researcher…gave the impression they didn't like (the end-user) calling them. On the other hand, the grant was pretty clear in what it specified, and work along these lines had already been going on before this got up and running, so it is very likely that they were aware of the group's needs
- Communicated through a working group. They were aware of (the end-user's) needs when doing this work. Also worked together to address core scientific questions. Doesn't really think communication between the two groups could be improved. Having a close relationship with the university allows them to easily stop projects going off track
- Started to collaborate with the researcher on projects when moving into this area, so this team was able to communicate with (the end-user) as part of this. Told of

this work after the project had commenced, but they were likely aware of needs at the time
- Didn't work directly with the researchers, but they did work pretty closely with some colleagues. The lead researcher was well aware of their needs when carrying out this work
- Would have spoken with each other. Yes, absolutely. The researcher was considered very clued-up when it comes to that sort of thing, and is very good at working with managers
- Communicated by email or in person when they visited the sites for their sampling. They were well aware of (the end-user's) needs and made every effort to accommodate them

5. Did you use the results of the research? How? Why or why not?

Yes – 54% (7)
- Have been able to use this technique in their work and knows the researcher is still using this technique in their projects. Also planning to put in an application for an extension to this research through an ARC Discovery grant
- The tools that were developed in this project allows for things that simply were not possible before. This in turn has led to the research being carried out now with the PhD students. Also in the process of using this work to inform the development of a sediment quality guideline on a mineral, which will be directly applicable for use in the regulation and clean-up of industry effluents, especially locally
- Not sure directly, but the project was actually the NSW component of a national project all looking at similar things, so it should have been taken up in some capacity
- The big one is community education. The Council gets complaints all the time (about this particular issue) so the research work allows the Council to inform residents and their decision makers, the elected Council, about the implications of the management options available
- This work has been used to inform the development of a current project for the end-user. The work in the earlier project has built on their capacity to test and develop the new model
- The results of the research have been built on to set the directions for a current project (funded internally)
- The research was not conclusive about the issue being investigated. However, the Council has changed 'on the ground' operating procedures, reflecting the findings of the research

No – 46% (6)
- Have not been able to use results yet. They haven't yet been properly promoted thus far, although it the toolkit is still being finalised, so could use it in the future
- These techniques cost money to develop and implement, and unfortunately without a grant it isn't moving forward. A funding round has not been announced for this year yet. Given all the uncertainty surrounding science/environmental science at present, they are waiting but would like to start using these techniques in their area
- The end-user got the final report 4 or 5 months ago and has a number of environmental scientists going over it now as well as legal. Not been able to use the results yet, but may be able to make use of them once the final report has been examined
- Knows they've been published, but not been used yet. Might be able to use them somewhere down the track though
- Haven't been able to yet, as no longer managing this resource. The government would be more interested as they now manage this area. Considering it for the future though, as part of a wider suite of options. Would already be using it if still managing this area
- The work is still being finalised, so hasn't been published yet. Waiting on the results to come through before decisions can be made about how any of it can be used

6. How did you value the results/outputs of the research? How did the research benefit you in terms of environment/policy/systems/processes/outcomes?

- Believes this will be an important tool for consultants/researchers/managers to use. This is a poorly understood area, so any research into this will go a long way into filling the existing gap in knowledge. Given this the tool devised in this project is very important from a contamination outlook
- This is exciting stuff; although researchers have used this technique in the past, this team was the first to use it in this fashion. They were able to find a way this

technique could be applied, which is often half the battle. Furthermore, we are looking to use the technique developed increasingly into the future

- Values the results of this research highly. The tools developed are sensitive and unique, allowing for new work to be taken on which would have otherwise been unachievable
- Sees the value in this. Although can't really do anything with it just yet, once able to apply it to their work it will be very useful in providing a surrogate for current techniques which are more destructive than this new method, providing an obvious benefit from the outset
- It is very valuable and useful. The challenge is working to find the correct application for the results; e.g. if it is to be used to inform legislation/regulations, how this would be achieved
- This was highly valued. It has provided information that can be directed towards on-ground management (for example, in setting priorities, such as weed control). It highlights the ecological interactions that may have not been so obvious to many people before
- It has been critical to answer the basic scientific questions to allow for more complex projects; this work is of very high value
- Extremely valuable; this is the only information available (in Australia) that shows how this aspect can influence the issue under investigation
- It was valuable in that it has provided medium to long-term management options
- Valuable as it has helped with informing decision-makers and can be used to guide decisions on how to improve the management of wetlands
- The results were considered in the broader context of managing the urban environment. In light of the results, the Council has changed operating procedures to suit
- Need to wait for the results/reporting of the project to tell how valuable it is (2)

7. What impact has the project had?

Low impact – 15% (2)

- This has had only a low impact so far, but once the toolkit has been completed and properly tested (work is ongoing), I see it having a great impact in this field
- It has had only a minor impact as we no longer manage the area that this work would have had an impact on, but it has the potential to be an impactful project if the government decides to make use of it

Moderate - Significant impact – 54% (7)

- This has had a pretty high impact in our field
- Once funding is obtained the technique can be applied in their work, so it will definitely have a positive benefit
- It has provided one aspect into managing these natural areas. Having this information has given the Council a better position in which to make decisions
- It has had some impact so far as it was tailored to the end-user's needs, but will have a greater impact in the future when they are able to take up the results
- This research has had a significant impact in this field, in terms of giving a platform for shaping future research directions and in providing the tools necessary for service delivery
- It has filled a gap in knowledge that has allowed research priorities to be set and informs day-to-day work
- This will open up opportunities, both for future research, and with further honing of the technique, for managers and decision makers

Unsure – 31% (4)

- Not entirely sure about this one
- It is still too early to tell – 23% (3)

8. Do you think the research project is or was a priority policy area for NSW? Has it emerged as one or as a research strength for NSW?

Yes – 77% (10)

- It is a relatively high priority for NSW, especially in terms of environmental contamination

- This is of the highest priority. The cost of implementing this technique is coming down, so once the establishment of a genetic code has been achieved (which the lead researcher is working on now) this tool will become the primary instrument for taxonomic assessments in contaminated sediments
- A rapid method for assessing the bioavailability of contaminated sediments that can pinpoint areas of concern will be a very useful tool to have in NSW, as it will be for us
- It was at the time and it still is (2)
- It filled a gap in understanding, which can help to get rid of the emotive response from the community in how to deal with the issue. This information has been applied in community education programs to influence behaviour around natural areas
- It is a priority for the Central Coast. Whether it is treated as such by government is another matter. It is an ongoing issue that requires continued attention
- Absolutely; this work is essential and unique
- It certainly was for a while; since then it seems to have gone off the radar

No/unsure – 23% (3)

- For NSW, no
- Wasn't familiar enough with the Trust
- Not sure

9. Do you have any feedback about the priorities the Trust sets for the research and/or recommendations to improve the process? Would you like to get involved in setting the priorities for the program? How?

- Not at this stage, although interested in being involved in setting the priorities for the program
- They are pretty open, and vary from year to year, which is important. Yes; a survey would be handy for this. It can be targeted at senior researchers in the environmental field, past grant winners, or even at managers to ensure they remain useful
- Not all that familiar with the Trust. Sure (interested involved in setting program priorities). Have to check with bosses, but if they were to send through an email, (the end-user would) provide a response. As researchers, getting the priorities right for these sorts of things is very important, and being able to play a part in that would be excellent
- Can't really suggest any improvements for the process. Someone from the Council or Local Government would get involved. Email would be the best way to go about this; meetings are too resource intensive, and everyone is generally pretty busy, so communicating via email would get the best response
- Not at this point. It would be useful to get involved in setting research priorities
- No feedback on the Trust's priority setting now, although would like to get involved in setting them in the future. A workshop for this type of thing would be the way to go about it, as this way we could identify stakeholder needs and knowledge gaps that need to be addressed which can lead to further research and ultimately policy outcomes
- The priorities the Trust sets have been sensible choices. Happy to contribute; a survey with open-ended questions is the best way to go. Workshops are time consuming and can lose focus if not handled well, so a survey makes more sense
- Apart from knowledge of this project, doesn't know anything about the Trust. Might be interested in (priority setting). It would be either through direct contact by the Trust, or maybe a survey
- Noticed that their priorities change every year or so. Monitoring (in particular, long-term monitoring) never seems to be given due attention. A lot of these projects are 1-3 years in length, but monitoring needs to continue past these times to get meaningful results (say, 10 years). This is a problem Australia-wide though. Sure, why not! It could be done by a survey combined with directly approaching key people, or possibly through a workshop where policy, managers and scientists can all sit down together giving a comprehensive overview of what is important. Bear in mind that a survey is only as useful as the amount of responses you get for it; face-to-face conversations have always been more productive

- Wasn't familiar enough with the Trust – 23% (3)

10. What do you think the Trust could do to improve the uptake of research outcomes by end-users (e.g. industry, policy makers, community groups, other researchers, etc.)?

- The Trust could enable the facilitation of dissemination of the research outcomes. Researchers have been able to get the results of their work out to the scientific community relatively easily, so this aspect is done well. However, where dissemination falls short is often reaching out to the actual end-users themselves, often managers, and when examining who in particular it will impact, the broader community. To enable researchers to reach these audiences would improve uptake
- Seen a lot of research funded by the Trust taken up practically, so it seems to be very effective in this regard. One suggestion is to have a follow-up meeting, maybe one year out, between researchers and end users relevant to their projects
- Make sure that the questions actually align with the real needs for people out there, the people being targeted to take up the outputs of work completed
- Prioritising the research it funds in "needs areas" is the best way to achieve the uptake of its research
- Doesn't have too much direct experience with the Trust/Trust grants; setting priorities for the research to be funded under the program is the best way to ensure that it is taken up afterwards
- There is the potential to promote funded research more, targeted at the groups that are likely to benefit it. Not enough is being done on promotion of the good work coming out of the Trust at the moment
- They could sit down and talk with people about what the real issues are so that when they set grants they have a practical viewpoint on what needs to be achieved, as opposed to just a theoretical outlook
- The Trust should ensure that when a project is set up, that the researchers have linkages with end users from the outset. This can be hard if the researcher is not familiar with these groups, so the Trust could help to facilitate this in some capacity
- The Trust can do more to raise awareness of this program to end users. It would be helpful for them to reach out to people and inform them of the services and purpose of the program
- Make sure end-users are being consulted with when planning a project. Scientists are getting better at it, but there is still room for improvement. They are more likely to use the research if they have been a part of it, setting the scope for the study, tailoring it to their needs
- Wasn't familiar enough with the Trust – 15% (2)

11. Do you have any general feedback on the grant program, Trust processes or the research emerging from it to help improve the program impact?

- Likes the EOI process. It is very valuable for researchers as it takes a lot of effort to prepare a full grant application, and if you're not successful, then you haven't spent a whole lot of time on something that wasn't going to get up any way. One improvement would be to provide feedback for unsuccessful applications (EOIs). Even just some dot points or a chart covering how it didn't fit in with the program's priorities for that year would be helpful. Realising this is a time consuming process, and that the Trust only has limited resources/funds, but considering the ARC grants are able to provide feedback for unsuccessful grants, this would be a good thing to look into
- A follow-up meeting after the work is finished would be beneficial, especially for decision makers. They can look into problems around NSW where the outputs of the research can be used. It's a very useful resource
- The potential is there to provide a bigger window of opportunity to put in an application. The time available to put in a submission after the Trust announces the program for the year isn't particularly long; the timelines involved are a bit tight. Earlier announcements would go down well. There could be more notifications and reminders once the process/research is underway
- They should get proper feedback on why something did or didn't happen concerning the grants they award, as that would be especially useful to end users
- It is important for researchers to involve end users right from the beginning as it greatly improves the chance of having a successful outcome
- This program is valuable. It provides the means to address NSW environmental questions, which in the current funding climate is particularly important
- Raising awareness of the research grants program with the actual end-users would help to improve program impact

- There is not enough of this kind of research funding, and not enough money. However, this is mainly a resource problem. The lack of follow-up of projects (the ability to continue monitoring after the formal funding period) is an issue that if addressed, would give far greater insights than just having short-term projects alone
- Not familiar enough with the Trust – 31% (4)

APPENDIX 5: NOT-FOR-PROFIT ORGANISATIONS OFFERING GRANTS FOR ENVIRONMENTAL RESEARCH

Note: The information in this table was sourced from publically available sources and may not contain all programs and/or it may contain some inaccurate or outdated information.

Funding body	Funding Program (Component)	Program objectives	Range of grants offered (total funding pool)	What money is used for	Eligible applicants / projects	Criteria for funding	Program priorities	Timing of process	Notes
Ian Potter Foundation	Environment & Conservation (Large grants)	• To assist communities, esp. agricultural regions, in protecting and maintaining areas of high conservation value, particularly through the promotion of sustainable agriculture and management practices on a landscape scale; • To support high quality research and programs that help communities develop partnerships with enterprises and institutions to reduce carbon emissions and better adapt to an increasing carbon environment.	Grants start at $100,000.	Project related costs and salaries are provided for. Does not support retrospective funding, recurrent expenditure, undergraduate and postgraduate student research or capital or endowment funds.	Organisations must have both Deductible Gift Recipient (DGR) Item 1 and tax Concession Charity (TCC) status.	Assessed via a two-stage application process. Application forms are slightly different for Universities compared to other organisations. The size and nature of the organisation is taken into account, along with how the project's outcomes align with the program's objectives, and the merit of the research.	Research and programs that promote sustainable approaches to agriculture, opportunities within the carbon economy and land management practices that encompass a landscape-scale approach to protecting areas of high conservation value.	Applications open from late March and close in late May.	Provision to supply far larger grants than ERG. Similar funding model, but generally different objectives. National program. Size of organisation is taken into account for eligibility.

Funding body	Funding Program (Component)	Program objectives	Range of grants offered (total funding pool)	What money is used for	Eligible applicants / projects	Criteria for funding	Program priorities	Timing of process	Notes
Ian Potter Foundation	Environment & Conservation (Small grants)	To foster broad public awareness leading to significant volunteer support to meet the environmental challenges facing NSW, and to contribute to projects that look to leverage support from multiple stakeholders.	Up to $20,000.	Funds to cover research or project-related costs.	Organisations must have both Deductible Gift Recipient (DGR) Item 1 and tax Concession Charity (TCC) status.	The size and nature of the organisation is taken into account, along with how the project's outcomes align with the program's objectives, and the merit of the research (if applicable).	Projects must align with the program's objectives.	Applications open from late March and close in late May. Only considered by the Board once a year.	Leveraging grant, so in some cases can be similar to Trust seeding grants. National program.
State Trustees	MA Ingham Trust	The preservation and funding of research, to increase education and knowledge with respect to the origin, history, habits, life and use, and scientific benefits (if any) of, Indigenous Australian mammals and birds, and the flora providing their food, habitat, etc., and research into the relationship of one or more to the other.	Up to $5,000; majority in the range of $1,000 to $2,000 (total pool is restricted to $5,000 per annum).	Preference for funding equipment essential for field-based research.	Any person or organisation who can demonstrate how their project addresses the program's requirements.	Preference given to projects with a Victorian focus. Must demonstrate how the research is relevant to the aim of the Trust, and justify why funding is being sought.	Research focus on indigenous Australian mammals and birds, and/or associated flora.	Funds granted annually; applications are due 15 April each year and are reviewed in May. Grant recipients must submit a final report or publication on the completion of funded work.	Victorian focus. Very small grants aimed at funding components of a project (such as equipment).

Funding body	Funding Program (Component)	Program objectives	Range of grants offered (total funding pool)	What money is used for	Eligible applicants / projects	Criteria for funding	Program priorities	Timing of process	Notes
Birdlife Australia	Australian Bird Environment Foundation	To support practical, on ground, conservation activities to counter the threat to Australia's birds from vegetation clearance, habitat degradation and competition with invading species.	Up to $5,000 is offered per grant; (number and size of grants offered is subject to funds available).	For project costs; not supplied retrospectively.	Any person or organisation who can demonstrate how their project addresses the program's requirements.	Projects are assessed on their merit: their contribution to the protection and conservation of Australian native birds and their habitats, and the likelihood of completion within the time frame provided.	• Practical conservation; • Research and survey of the needs of Australian birds and their habitats; and • Public education and school-based projects which promote habitat restoration and awareness of birds by students.	Grants are funded annually. Applications are accepted up until 31 May each year. Work is to be completed within 12 months.	Useful for very small projects or as bridging funds.
James N Kirby Foundation	Environment and Natural Resources	To aid the conservation, maintenance and development of Australia's natural resources.	Minimum amount of $3,000 up to a max of $100,000; average grant is $10,000-20,000 ($1,000,000 annually across 4 fields).	Funds to be used as specified in the original application.	Must be a "Deductible Gift Recipient" as Endorsed by the Australian Taxation Office. For Australian research only. Funds not available to individuals or projects/entities outside Australia.	Application form and a written submission of no more than 3 A4 pages are to be completed. Assessed on proximity to stated objectives of Foundation.	No priorities are stated for this program.	Applications accepted 1 November to 28 February. Assessed prior to May Board meeting, with the outcome known by mid-June. No time limit placed on the duration of grants. Report to be supplied annually.	Funds are distributed across 4 fields. Average grant sizes are small, but have provision to fund large grants (though still less than ERG).

Funding body	Funding Program (Component)	Program objectives	Range of grants offered (total funding pool)	What money is used for	Eligible applicants / projects	Criteria for funding	Program priorities	Timing of process	Notes
The Trust Company	Winifred Violet Scott Charitable Trust	To provide funding for the protection of animals or wildlife or the protection of endangered species.	No maximum amount listed; web search found up to $88,000 had been provided for projects.	Not stated.	Charitable organisations; not restricted to Australia. Must hold Australian Tax Office endorsements.	Projects must demonstrate how they address the program's objectives, and justify the amount of funding sought.	It is desired that projects have an Australian focus.	Annual closing date for applications is September 30. Assessment takes approx. 4 months.	Focus on protecting Australian endangered species; funding range variable.
Australian Flora Foundation	Research Grants	To foster scientific research on the biology and cultivation of Australian plants, whereby encouraging research develops a greater awareness of the value of the Australian flora, resulting in explicit measures for their conservation and utilisation.	2-4 projects funded. Grants offered range from $5,000-15,000.	Funds not to be used for publications, conference travel, research on orchids or taxonomy.	Research workers in Australia (either suitably qualified or identifies a qualified project supervisor).	Applications are evaluated on their closeness to the objectives of the Australian Flora Foundation, scientific merit of the project, likely success within the stipulated timeframe, and the availability of funds. Projects must aim to provide outcomes within the period of the grant.	• Conservation of Australian plant diversity, particularly where there are threats from climate change; • The cultivation of Australian plants; and • Rare and endangered plants.	2 stage process. Preliminary applications accepted until mid-March. Applicants are short-listed and full applications are due by mid-June. Outcomes are advised in September, with funds available from December.	Small number of small grants awarded. Features a 2 stage process with a focus on Australian flora research.

Funding body	Funding Program (Component)	Program objectives	Range of grants offered (total funding pool)	What money is used for	Eligible applicants / projects	Criteria for funding	Program priorities	Timing of process	Notes
The Myer Foundation	Sustainability & the Environment (Large Grants Program)	To secure cultural and environmental integrity.	(Pool of $1.1 million for the next 3 years) NB: if the original project falls through or changes from the original application, it will need to be approved by the Foundation in order to receive funding.	Does not provide retrospective funding, or provide funding for conferences, commercial activities, equipment for personal use or living expenses.	Organisations or an individual who are, or will be, in Australia at the time the funded project is taking place. Government bodies are not eligible for funding, nor are applicants who have not acquitted previous projects funded by the Foundation. Only one submission per applicant can be considered at a time.	Projects that display potential for building the capacity of not-for-profit organisations in this area are favoured, with approx. one third of grants allocated for these. The merit of the project is examined, including how it addresses the program's (and the Foundation's) objectives, provision of a full budget, and demonstration of innovation.	• Biodiversity; • Climate change; • Northern Australia; • Urban ecosystems; and • Water. NB: subject to change as they align with their strategic direction.	Applicants are notified on the outcome of their application within 3 months of the closing date, or 3 months from submission of the application form. Payment will be made electronically within 2 weeks of approval and receipt of banking details. An acquittal report is required from grantees at the end of their funding period.	One third allocated to capacity building grants.

Funding body	Funding Program (Component)	Program objectives	Range of grants offered (total funding pool)	What money is used for	Eligible applicants / projects	Criteria for funding	Program priorities	Timing of process	Notes
The Myer Foundation & Sidney Myer Fund	Myer Innovation Fellowships	To "support Australia's brightest, self-directed leaders to forge breakthrough solutions and articulate actionable ideas which compel the community to respond".	$100,000 is provided to each Fellow. An additional $30,000 is available to each Fellow for approved expenses. (Three Fellows are selected each year, giving a total pool of $390,000 per annum).	Fellowship money, plus $30,000 for expenses, e.g. work space, rent, travel or contracting of external expertise.	Individuals with a proven track record in their field of expertise. Australian citizen or permanent resident and be residing in Australia for most of this time. Must have well developed networks within an area of the project, with a proven track record of risk-taking, out-of-the-box thinking, and ability to turn ideas into action.	The project must: • Be based in Australia; • Be aligned with one or more of the three program priorities; • Have potential to forge a breakthrough solution for a social or environmental issue; and • Have been in development for no longer than three years. An estimated budget must be submitted for consideration.	• Education; • Sustainability and the environment; • Poverty and disadvantage.	The Fellowship lasts for 9 months. Successful applicants are asked to take leave from their current role for the duration of the Fellowship. Fellows are expected to report via personal presentations at the mid-point and at the end of their Fellowship. There is no set output for the Fellowship.	Fellowship lasting under a year. Most of the money provided goes towards CI salary.

Funding body	Funding Program (Component)	Program objectives	Range of grants offered (total funding pool)	What money is used for	Eligible applicants / projects	Criteria for funding	Program priorities	Timing of process	Notes
Waitt Foundation	Ocean Conservation (Major Grants)	Raising global awareness about declining marine resources through scientific research, innovative sustainability solutions and policy reform.	Minimum amount of $100,000 USD. No maximum limit.	No restrictions stated.	Not-for-profit organisations. Based in the US but open to overseas applicants.	Evaluation criteria include the funding urgency, conservation impact, scale of impact, feasibility of implementation and organizational capacity.	Projects must support sustainable fishing and/or MPAs. Focus on the sub-themes of scientific research, policy, management and communications.	Projects can last for 12 months, or over multiple years.	Potential to fund far larger grants than ERG. Program has a global scope.
Waitt Foundation	Rapid Ocean Conservation Small Grants Program	Complements the major grants program. Provides small grants with a quick turnaround time for solutions to emerging conservation issues. Supports higher-risk ideas at a lower financial cost.	Grants of $1,000 - $10,000 are offered bi-monthly; grants up to $20,000 are considered, but rarely offered.	Funds not to be used for event sponsorships (e.g. conferences, workshops).	Small local NGOs in Australia and internationally.	Evaluation criteria include the funding urgency, conservation impact, scale of impact, feasibility of implementation and organizational capacity.	Projects must support sustainable fishing and/or MPAs. Focus on the sub-themes of scientific research, policy, management and communications.	Funds are provided within 2 weeks of funding decisions. The spending of funds must be completed within 6 months. Proposals reviewed bi-monthly.	Funds to go to small-scale projects only (not as component of larger studies).

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Norman Wettenhall Foundation	Environmental Grants (Small Environmental Grant Scheme)	To support biodiversity conservation projects in Australia that are concerned with one or more of the stated program priorities.	Grants are generally under $10,000, with some exceptions.	Equipment, travel and project-related costs. Doesn't fund buildings, garden projects or on-ground work available from government bodies.	Any person or group provided that they meet the criteria for funding.	The Trustees consider the following: objectives, need, innovation, viability, support (partnerships/collaborations for the project are necessary), budget and gut feeling.	• Monitoring and recording data; • Community education; • Community capacity building; • Research and science; and • Sustainable land management (NSW only).	4 grant rounds each year: March, June, September and December.	Partnerships are a necessity of this small grant. Several funding rounds each year.

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Hermon Slade Foundation	Project Grants	To advance and enhance the progress and harmony of mankind with the Earth through the study and application of Natural Sciences. Further, it aims to complement, rather than compete, with other funding programs.	Up to $30,000 for up to 3 years (total pool dependent on the income of the Trust fund).	Grants don't cover salaries of scientific research staff, student stipends or administrative overheads.	Australian institutes for activities within Australia (or occasionally for activities in countries of the South West Pacific). Must be under the umbrella of a university or other appropriate organisation.	• Scientific merit of the application and the likelihood of cost-effective delivery against the stated objectives and outcomes; • The likelihood of a successful outcome assessed against the relevance of the application, the quality of the science on which it is based and the qualifications and track record of the principal investigator(s); and • The need to encourage capacity building.	Biological and biophysical sciences, esp. those that lead to improved systems of managing land, water, plants and animals in ways which will enhance the productivity and quality of food, fisheries, plants and forests, while conserving the natural environment, preserving biodiversity, avoiding pollution of soils and water, and enhancing human welfare.	Funding is provided annually for up to 3 years. Applications close in March, with new grants beginning in July.	Grant can last up to 3 years like ERGs, but are aimed at complementing other grants.
Sea World Research & Rescue Foundation Inc.	SWRRFI Funding	To promote research into marine life; funding for quality research projects incorporating the protection and preservation of the marine environment.	Not stated. Up to 12 projects have been funded in a year (2011).	Not stated.	Applications accepted from both public and private sectors.	Projects short-listed on the basis of their high scientific merit and likely contribution to the Foundation's objectives.	Aspects of the biology of marine vertebrates.	Applications to be lodged by 1 April. Projects are to last for a maximum of 2 years.	Program targets research on marine vertebrates; small number of projects funded each year.

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Australia & Pacific Science Foundation	Project grants	The funding of activities that are likely to lead to improved systems of managing land, water, plants and animals in ways that will enhance the productivity and quality of food, fisheries, plants and forests, while conserving the natural environment, preserving biodiversity, avoiding pollution of soils and water, and enhancing human welfare.	Up to $15,000 per year for up to 3 years.	Does not cover administrative overheads, researcher salaries or student stipends. Incl. equipment and travel.	Universities or other appropriate institutions operating in Australia or another country within the South West Pacific region. Applications with students as project leaders are not accepted.	Components of the budget for which funds are sought must be justified, the potential for capacity building is favoured, the likelihood of success, the scientific merit of the application and its likelihood of cost effective delivery against the stated objectives and outcomes.	The biological or biophysical sciences or has application in those areas, and is not medical research.	Projects will be funded annually for up to 3 years, with instalments dependent upon the receipt of satisfactory annual reports and financial statements.	Similar timing and reporting requirements, but doesn't cover any proportion of salaries, and maximum grant far smaller than ERG.

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National Geographic	Committee for Research and Exploration	To award grants for scientific field research and exploration. To fund projects that has both a geographical dimension and relevance to other scientific fields and be of broad scientific interest.	Vary greatly, but are usually in the range of US$15,000 -20,000 (up to 250 awarded each year).	Salaries for PIs not allowed. Can be used for equipment and project-related expenses.	Appropriately qualified researchers, either individually or associated with an educational organisation or institution. Must have published a minimum of 3 articles in peer-reviewed scientific journals.	Project details, how the funding will be used and evidence of funding from other sources. The committee emphasises multidisciplinary projects that address environmental issues.	Anthropology, archaeology, astronomy, biology, botany, geography, geology, oceanography, palaeontology and zoology.	Grants tend to be seed money for one year's research.	US focus, but open to researchers globally. Large numbers of relatively small grants awarded each year.

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Royal Zoological Society of New South Wales	Paddy Palin Foundation Science Grant	To support field-based, high-quality ecological research. To provide financial support for conservation based research of Australian ecosystems that will ultimately lead to tangible outcomes for management.	Up to $7,000 per grant; 6 grants were offered in 2013.	To support the research project. Not to be used for conference travel or research institutional on-costs.	Postgraduate students and Early Career Researchers (within 3 years of completing PhD). Applicants should be financial members of the RZS at the time of application.	Applicants are judged on their research proposal (aims and background, significance of the research – incl. conservation significance, methodology, and management implications), along with an itemised budget (incl. details of any research funding already received) and brief CV.	• Terrestrial, marine and freshwater research on animals and/or plants • Ecological community processes.	Applications close in August, with the applicants informed of the outcome in September. Funding is provided on a staged basis after completion of progress report (after approx. 9 and 18 months depending on project).	Small grants designed to complement other funding or fund minor projects.

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Royal Zoological Society of New South Wales	Ethyl Mary Read Research Grant	To support short term research projects and young zoologists working in any aspect of zoology within Australasia.	Up to $1,500 per grant is offered.	No restrictions in contributing to the nominated research program.	Applications are restricted to members of the RZS. The applicant must be able to demonstrate that they have the scientific competence to undertake and complete the proposed research project.	Applicants must demonstrate: • High quality science highlighting the zoological significance of the work; • Project and potential outcomes are presented clearly; • Methods are realistic and achievable; and • Work is relevant to the conservation of fauna in Australasia.	• Research must demonstrate clear significance to the field of zoology; and • Research focusing on Australasian fauna is highly favoured.	Applications close on 30 April each year. Grants are awarded in July and run for one financial year. A project report is required to be sent after the work has been completed.	Effectively used to plug funding gaps in existing projects.

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Forest & Wood Products Australia Ltd.	R&D Projects (Market Access, Processing and Resources categories)	A key premise is that the program helps the industry to increase the market share and value of its products, while improving the sustainability and economic contribution of the sector to the overall Australian community.	No limits to funding given; depends on scope and quality of project.	Funding covers all expenses incurred.	Any person or group provided that they meet the criteria for funding.	Preference will be given to proposals that demonstrate value for money through leveraging, and industry/stakeholder engagement, and also to those that maximise the utilisation of skills, capacities and expertise of the scientific, general community and the industry through effective collaboration or joint ventures.	• Maintain and expand markets for wood products and the new products and services required to meet these markets; • Characterise the properties and variability of wood resources and maximise value recovery; • The management of biotic and abiotic risk factors; • Develop systems and technologies to maintain or improve estate productivity; and • Evaluate strategies for forest management under climate change and maximise greenhouse advantages of forest products.	Funding opportunities ongoing throughout the year; no set time limit for projects.	Provisions to fund larger projects than ERG; focus on projects that can directly benefit this particular industry.

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Horticulture Australia Limited (HAL)	R&D applications (Levy matchable, Levy unmatchable, VC matchable and VC unmatchable categories)	To acquire or apply knowledge that may be of use for the purpose of improving any aspect of the production, processing, storage, transport or marketing of horticultural products.	Projects funded in a number of ways; amounts variable.	Funds to be spent as specified in grant agreement; no restrictions placed in respect to this.	Any person or group, provided that they meet the criteria for funding.	Projects must align with program objectives and address at least one of the program priorities.	• Productivity and adding value; • Supply chain and markets; • Natural resource management; • Climate variability and climate change; and • Biosecurity.	Call for funding proposals from September to November; funding provided in July to successful projects.	Research focussed on producing outputs for specific industry.

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Loreal Australia & New Zealand	For Women in Science Fellowships	To help early career women scientists to consolidate their careers and rise to leadership positions in science.	3 Fellows are selected each year; fellowships are valued at $25,000 (up to $75,000 total funding pool).	Equipment and other research material, publishing (page charges), travel and conferences, child care and part/all salary of research assistant.	Women who are an Australian or New Zealand citizens. Must be a post-doctoral researcher who has completed their PhD since 1 May 2008.	Candidates are assessed according to their reference letters, scientific excellence and appropriateness of their proposed research or study plan, and their intellectual merit, academic records or accepted requisites. Must demonstrate the ability to plan and conduct research, work as a team member or independently, and interpret and communicate research findings.	There are no priority research areas under this scheme.	Funding is provided in 2 instalments: the first at the award ceremony and the second 6 months later. Funding is provided for 12 months.	Fellowship with limited eligibility – early career women scientists.