



UNIVERSITY OF  
**CANBERRA**  
AUSTRALIA'S CAPITAL UNIVERSITY



Institute for  
**Applied  
Ecology**

2012 - 2016

# STRATEGIC PLAN

INSTITUTE FOR APPLIED ECOLOGY



2012 - 2016  
**STRATEGIC PLAN**

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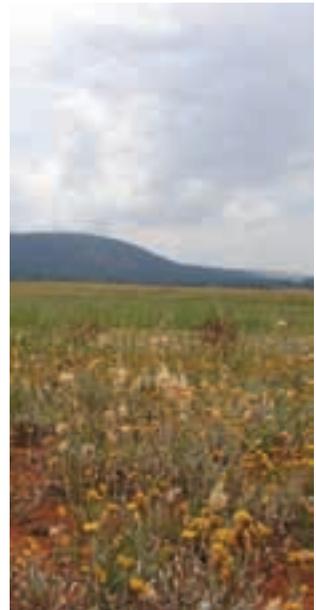
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## INTRODUCTION

The Institute for Applied Ecology (IAE) is a University of Canberra research centre. It was formed in 2005 from the merger of several research groups to conduct interdisciplinary research in applied ecology. The Institute for Applied Ecology strengths are in basic and applied research that addresses complex environmental problems.

The IAE is a dynamic and pro-active institute yielding excellent research, quality postgraduate education, and leadership in effective conservation and management of our natural resources. It is distinctive by virtue of its range from investigator led basic science to strategic application – an applied focus drawn from a base of fundamental inquiry. The IAE is notable because of its interdisciplinary expertise, diverse funding base and the mix of disciplines involved in collaborative research, enabling holistic approaches across the spectrum from species to landscapes, aquatic and terrestrial.



## CONTEXT

The world faces a rapidly changing environment, with pressures on energy, water, and biodiversity. As a result, we are in the midst of the Earth's sixth major extinction phase<sup>1</sup> and at tipping points in

<sup>1</sup> B Walker, W Steffen, J Canadelly and J Ingram (1999) *The Terrestrial biosphere and Global Change*, Cambridge University Press, Cambridge.

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key environmental processes in water, forests, rangelands and agriculture. A rapidly changing climate and increasing human population will exacerbate this situation. Decisions on how to manage our land, water and biodiversity in this dramatically changing landscape require high quality information that is based on data gathered rigorously, synthesised succinctly, and delivered fearlessly.

The IAE has strong similarities with a number of academic units within Australian universities including elements within the Australian National University, the University of Tasmania, Wollongong University; Griffith University, and James Cook

University. These universities performed strongly in the 2010 Excellence in Research Australia (ERA) assessment, as did the IAE. The IAE seeks to distinguish itself from these other units by its focus on applied interdisciplinary research, a balance between knowledge generation and application and our commitment to providing solutions to contemporary problems of the environment, industry and society at the local, national and international levels. The IAE also seeks to create a postgraduate training program that places it at the forefront of postgraduate education in the environmental sciences. The focus will be on providing comprehensive training and development programs for postgraduate students to turn out highly skilled graduates

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with a broad knowledge of issues applicable to applied ecology and experience in industry settings while maintaining the highest scientific excellence. In addition, the IAE will target postgraduate training through short-courses that will draw on students from other Australian and overseas universities.

The Excellence in Research Australia (ERA) scheme will be a key driver of research funding for universities. The IAE performed strongly in the 2010 ERA rankings, gaining a 4 out of a possible 5 in the Environmental Science category. This ranking is a testament to a strong performance in the IAE and constituent groups from 2004 – 2009, providing external recognition that the IAE is a world-class, cross-faculty research entity as required by the University in its strategic plan (2008-2012). A central goal for the IAE is to improve our ERA ranking to the maximum level of 5 by 2016.



## OUR ROLE IN THE UNIVERSITY

The University of Canberra exists to be a teaching and research university, campus-based and specialising in disciplines in which it can be excellent and which reflect the University's capital city positioning.

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The IAE contributes to three research themes at the University of Canberra: Sustainable Environments; Effective Governance; Resilient Communities. We are the flagship centre in the Sustainable Environments theme and the University goal to be in the upper half of Australian universities in reputable international institutional indices and performance measures. The IAE will be a major contributor to UC being a world-class research entity (Strategic Plan Strategy 4, Step 33); strengthening the University's research culture (Step 31) and increasing the University's research income (Step 32).

## OUR PURPOSE

The purpose of the IAE is to undertake high quality research yielding improved understanding of ecology as a basis for decision-making in natural resource management and sustainable development. We will work to enhance our international reputation as a research institute, producing high quality, high impact research in applied ecology. The quality and impact of our research will be measured by standard academic measures (such as ERA) as well as impact on research-led innovation in environmental policy and management.



We are distinctive by virtue of our applied focus, but with a particular commitment to strategic research in support of application more broadly –

application emerges downstream from the more fundamental enquiry that generates the opportunity.

We are distinctive because of our interdisciplinary expertise, our diverse funding base, our particular strengths in aquatic bio-monitoring, catchment systems, conservation biology, freshwater ecology, invasive species ecology, and wildlife genetics and genomics, and by our mix of disciplines that apply research across the spectrum from species to landscapes, aquatic and terrestrial. Specialist skills have expanded in recent years to include fish conservation, catchment bio-geochemistry, riparian vegetation, ecohydrology and ecological modelling expertise, ensuring that we retain a depth of capacity that few other research institutes could claim.

## OUR VALUES

We are committed to inter-generational equity, whereby we seek to leave the environment at least as diverse, healthy and productive as it is now, for future generations.

### ***A constructive work environment***

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We strive to achieve a friendly work environment that fosters creativity, collaboration and excellence in research and post-graduate education. Our work environment is supportive, engenders respect, trust, and a shared and valued group identity. It encourages and enables development of research capacity and expertise, and a genuine commitment among members to share knowledge, perspectives, specialist skills, technical expertise and research opportunities.

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## ***Science as a basis for understanding***

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We foster excellent science and an evidential approach to decision-making and action. Our research culture includes welcoming criticism, operating according to the accepted standards of scientific ethics, and striving for rigour and excellence in all steps of research. We recognise that science contributes to decision-making, understanding the role of humans in natural ecosystems, human perceptions and social structures.

## ***Strategic science feeds innovation and application***

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We believe that much innovation and application draws from a broad body of basic and strategic science and enquiry that universities are uniquely placed to provide. We collaborate broadly in the co-generation of knowledge and development of new applications and work with program managers and policy makers to bring innovation to environmental decision-making.



## OUR VISION

To be recognised nationally and internationally as a leading Australian ecological science research institute, generating knowledge for environmental management and sustainable development.

Our work brings together strengths in relevant disciplines under a single research umbrella, unencumbered by traditional disciplinary boundaries. It includes knowledge generation and application, recognizing that application often arises from unexpected sources within a broad base of enquiry. It is characterised by rigour, excellence, and commitment to solve contemporary problems of the environment, industry, and society making us the provider of choice for advice and policy support on the environment to governments – regionally, nationally and internationally. We are committed to providing high-quality postgraduate education and training in applied ecology.



## OUR RESEARCH PROGRAMS

Research in the IAE is clustered under three broad, overlapping research strengths: Integrated Catchment Management, Water Science, and Biodiversity Conservation.

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## **Biodiversity Conservation**

conservation biology, invasive  
species ecology & management,  
wildlife genetics

## **Water Science**

freshwater ecology,  
ecochemistry, ecohydrology,  
water quality, water quantity,  
human health

## **Integrated Catchment Management**

geomorph, regolith, soils,  
salinity, land use, land  
degradation, climate

These strengths incorporate several programs of work based on disciplinary expertise in eco-chemistry, biology, genetics, ecology, and freshwater sciences and which feature multiple current, externally funded, research projects that emphasise collaboration within and across research strengths.

## OUR STRATEGIES

To reach our vision and be recognised nationally and internationally as the leading Australian ecological science research institute, generating knowledge for environmental management we will work to achieve excellence in all three research strengths. Membership of the Institute is linked to excellence on performance measures. Specific strategies (UC Plan) and steps (IAE) linking this Plan to the University of Canberra Strategic Plan follow.

## STRATEGY 1

### *Strengthen the Foundations*

#### **Step 1:** Build Critical Mass

Work with the Faculty of Applied Science to ensure that all new appointments in the environmental sciences and related areas are strongly aligned with the core research strengths of the IAE, building research teams in our areas of established engagement with industry and the community.

**Performance Measures:** Increase, from 2012 to 2016, the number of high performing researchers engaged in research and producing high quality research outputs in biodiversity conservation, integrated catchment management and especially in water science, building teams in existing strengths.



#### **Step 2:** Expand the research workforce

Actively seek opportunity to secure program funding to expand the full-time research workforce employed on external funds (Postdoctoral to Professorial Fellows).

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Performance Measure: Increase on the proportion of research only staff relative to establishment academic staff 2012-2016.

Performance Measure: Raise the capacity and outputs of all research staff and retain performing staff by supporting and investing in them through innovative programs to support publication and grant writing.

## STRATEGY 2

### *Increase Student Load*

**Step 3:** Increase student enrolments in higher degrees by research



The IAE provides a postgraduate education program under arrangement with the Faculty of Applied Science. Postgraduate enrolments have dropped across the sector in environmental sciences (and other science disciplines). We are committed to increasing postgraduate student numbers and activity through outreach marketing, provision of attractive incentives and support.

Performance Measure: There will be a threefold increase in postgraduate student enrolments between 2012 and 2016.

### STRATEGY 3

#### *Deliver Quality & Innovative Postgraduate Education*

##### **Step 4:** Expand and enhance higher degree student program offerings

The University has committed to providing innovative postgraduate education and increasing student completion rates. The IAE intends to maintain its completion rate for postgraduates at 90%, while increasing the number of enrolments. To do this we will expand the educational offerings and services provided to postgraduate students.

Develop a new broadly based, comprehensive postgraduate education program.

Performance Measure: Develop and offer the program by 2013, so that graduates in 2016 will have completed the program.

##### **Step 5:** Provide new short course program

Develop an internationally recognised postgraduate short course program that attracts external students.

Performance Measure: An applied ecology short course program offered externally and program uptake by external students.



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## STRATEGY 4

### *Research Performance in the top 10% of Comparable Centres in the Tertiary Sector*

The IAE, as a leading centre of research in the University, aspires to lead the University into this performance metric. Drawing on increased mass of research active staff and quality research student contributions the Institute will strive for growth in external funding, publication outputs and improved external evaluation of performance.

#### **Step 6:** Increase research funding from external sources

We will increase the volume and quality of research conducted through the IAE by increasing the amount of research grant funding won from external sources and the number of nationally competitive grants. Project funding applications that feature collaborative work with other IAE and UC staff in addition to external collaborators will be emphasised.

Performance Measure: Quantity of external funding will increase to that commensurate, on per capita basis, with funding won by environmental science research units scoring 5 on the 2010 ERA.

#### **Step 7:** Increase research outputs

Research publication outputs in high quality international journals, including collaborative publications with researchers inside the IAE and from other research organisations will grow.

Performance Measure: Establishment academic staff members and research fellows will be participant authors named on an average

of 20 publications, 2012 to 2016, including a significant volume of publications in journals ranked at the top of the discipline.

**Step 8:** Raise performance on external measures

Improve our performance in external evaluation measures, particularly the ERA.

Performance Measure: Our rank in ERA assessment will move from 4 in 2010 to 5 in 2016.

## STRATEGY 5

### *Engage Effectively in the World Around Us*

**Step 9:** Lift our sights

The IAE will work to increase the visibility, recognition and impact of the IAE and the University of Canberra, internationally and nationally, as an environmental science research centre producing high quality scientific outcomes. We will engage actively with researchers and policy makers nationally and internationally on the development and dissemination of new knowledge and application. IAE researchers will actively seek involvement in panels, fora and committees that lead and advise on applied ecology and environmental



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sciences. We will contribute to public debate on matters of strength in the IAE, working to disseminate scientific ideas to the general public as well as to our peers.

Performance Measure: Recognition by environment policy and program leaders and environment managers, as well as academic peers, measured by the number of international and national collaborations, increase in esteem measures of members of the IAE.

Performance Measure: Appointments to decision making boards and advisory panels.

Performance Measure: Publication and citation in popular media coverage of debates on matters of IAE strength.

**Step 10:** Provide ecologically sound solutions to environmental problems

Work with external partners, public, private and not-for-profit, to develop solutions to pressing ecological problems.

Performance Measure: Number of research consultancy agreements and contracts, panel appointments, partners seeking repeat business.

## OUR GOVERNANCE

The IAE is a University Research Centre operating under University policy. The IAE has a Director appointed for a period of five years and reporting to the Deputy Vice-Chancellor Research. There is an Executive Management Group as well as an Advisory Board with external members. Membership of the Executive is for the term of appointment of the office holder and in the case of elected staff, for two years. Membership of the Board is normally a term of three years, with an option for renewal, by invitation.

### Executive Management Group Membership

#### *Director*

(Appointed by the VC for 5 years)

#### *Deputy Director*

(an establishment academic staff member of the Faculty of Applied Science, IAE affiliated and full member. Appointed by the DVCR for 3 years, on advice of the Director)

#### *Executive Manager*

*Head of Discipline, Environmental Science*

#### *An elected academic*

(establishment academic staff member of the Faculty of Applied Science or Research Fellow of the IAE, full member)

#### *Postgraduate Co-ordinator*

(appointed by the Executive)

*Dean of the Faculty of Applied Science*

(by invitation)

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## Advisory Board Membership

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Chair – external

Other external members with appropriate research expertise  
(minimum 3)

IAE Director – ex officio

Dean of Faculty of Applied Science – ex officio

Postgraduate student – in attendance

## OPERATION IN THE UNIVERSITY



The IAE has close ties to the Faculty of Applied Science with establishment environmental science academic staff of the Faculty forming the core researchers in the Institute. The relationship between Faculty and Institute is one of mutual benefit and support, emphasising clear links between the education and research activities within the Faculty and Institute. Formal arrangements exist for provision of facilities and support.

Funding for the operation of the IAE is derived from several sources:

- *Funds provided by the University* (agreed amount over a 5 year period)
- *Research Block Grant funds* (on a performance basis plus a loading)
- *Externally earned research funds* including grants, contracts and consultancy funds
- *Research student fees*
- *Other funds* earned by the Institute in the course of our activities

The IAE is a leading participant in the Collaborative Research Network, Murray-Darling Basin Futures, based at UC. This program of work involves collaborations with researchers across UC in governance, economic modelling, planning and epidemiology and strengthens research links with the ANU, CSU and CQU as well as CSIRO and partner organisations, the Murray-Darling Basin Authority, the National Water Commission, the Department of Sustainability, the Environment, Water, Population and Communities and ABARE.



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