UNSW AUSTRALIA

Never Stand Still | Science

Centre for Ecosystem Science

Strategic Plan 2013 – 2016

Centre for Ecosystem Science

VISION - *Science for the environment*

Our Mission

The Centre for Ecosystem Science (CES) aims to be a leader in research, its application, and communication of environmental change. We aim to attract top quality students and form strategic partnerships with government, industry and the community.

This Strategic Plan is provides specific objectives for the CES, 2013-2016.

1 Centre for Ecosystem Science (CES)

There is increasing understanding that a focus on the functioning of ecosystems is critical for long-term environmental sustainability. Ecosystems sustain a broad range of plants, animals and other organisms and the ecological processes that underpin their viability. Ecosystems occupy different realms, including freshwater (rivers and wetlands) and terrestrial systems. The CES has a strong focus promoting the viability of these ecosystems through understanding trajectories of change across landscapes and also how they function. Sometimes this focus is on individual species or processes but these primarily provide a focus for the entire ecosystem. We use landscape synthesis, remote sensing, GIS analysis and conservation tools to focus on how ecosystems are changing and what solutions exist to promote their viability. In particular, we are interested in models for implementation of scientific research through conservation practices including policy and management. The CES aims to focus its substantial expertise and capitalise on the research opportunities available in this area of growing environmental and economic significance.

The goals for the Centre for Ecosystem Science for 2013-2016 are to:

1. grow research, teaching and expertise capability by attracting academic research staff and other researchers;
2. increase the number of postgraduate students and improve their postgraduate experience;
3. increase number and size of research grants;
4. increase the number and impact of research publications;
5. increase collaboration with other UNSW research centres, government agencies and other research partners;
6. increase effectiveness of research in influencing decision-making and;
7. continue to communicate results of research widely to the community.

8. increase collaboration and outreach to international researchers, conservation organisations and natural resource managers
9. increase participation in and placement for international students in exchange programs and internships
10. demonstrate uptake of research products by resource agencies

2 RESEARCH

The Centre will concentrate research effort in four areas:

- **Rivers and Wetlands**
  - key threats, risks and uncertainties face biodiversity of wetlands, rivers, estuaries and groundwater systems and their conservation;
  - understanding hydrological patterns, links to floodplains and wetlands and the opportunity to apply research results on environmental flows and river restoration;
  - understanding the spatial and temporal natural and anthropogenic drivers of aquatic ecosystems;
  - understanding and predicting the spatial and temporal relationships between climate, hydrology of river flows and ecosystem responses, including the impacts of river regulation
- **Terrestrial Ecosystems**
  - key threats, risks and uncertainties affecting conservation of terrestrial ecosystems
  - understanding interaction and opportunities for restoration
  - investigating major drivers of viability in terrestrial ecosystems, including fire and climate change
- **Landscape Synthesis**
  - development of frameworks and tools for assessing trajectories in change in the environment
  - understanding patterns and processes for drivers and ecosystems at large scales
  - development of remote sensing techniques which allow for the tracking of large and fine scale change
  - analysis of landscape biodiversity
- **Conservation Practice**
  - developing practices and processes of rigorous adaptive management and working with key government agencies to promote implementation
  - identification of ecological values of rivers and linking scientific research to management and policy development for river and wetland management;
  - assist with conservation tools

- involvement in advising government committees and governments on effective conservation
- development of information systems which assist decision-making

The structure of CES reflects these broad areas of research, although there is considerable interaction between different research areas. We will also collaborate with other research centres within UNSW.

3 HIGHER DEGREE RESEARCH STUDENTS

The Centre will work with the School of Biological, Earth and Environmental Sciences, other Centres and Faculty to develop PhD programs designed to enhance the research experience and capabilities of its graduates, as well as further develop the School's research culture. PhD and MPhil students registered in any school at UNSW whose primary supervisor is a member of the Centre may elect to join the Graduate Programme in the Centre for Ecosystem Conservation. All administration and reporting will be administered by the Centre. In return for taking on these administrative and teaching responsibilities as well as the direct costs of supervising postgraduates, the School in which the student is registered will pass the agreed proportions of earnings (see budget) to the Centre.

4 TEACHING

In keeping with UNSW Centres Policy, the proposed research Centre will not be a responsible authority for undergraduate teaching activities. The Centre will continue to further development the Level 1 course, *Ecology, Sustainability and Environmental Science (BIOS 1301)* and specifically the development of the Level 2 courses, Vertebrate Biology, *Ground and Surface Water course GEOS,* and Level 3 courses including *Field Biology, Aquatic Ecology and Conservation Biology* which are run by the School of BEES.

5 STAFF

There is a recognised core of staff already associated with the centre, comprising 23 members from UNSW (12 academic staff, the Centre Manager, 7 postdoctoral fellows and 3 research assistants. Academic Staff involved in the Centre primarily come from within BEES but also across the University from Mathematics and Statistics and Engineering.

6 ADMINISTRATION

The Director, Professor Richard Kingsford, is full time in the Centre, except for meeting School teaching commitments. The Director will lead the strategic development and promotion of the Centre and will be responsible for staff supervision and for day to day activities of the Centre, as well as for oversight of centre financial management, supported by a centre manager.

The Director has two deputy directors, Professors David Keith and Richard Lucas. These positions will have a two-year term each. Professor Keith will guide strategic development of the graduate program and Professor Lucas will assist with the communications of the CES.

7 CENTRE EXTERNAL ADVISORY COMMITTEE

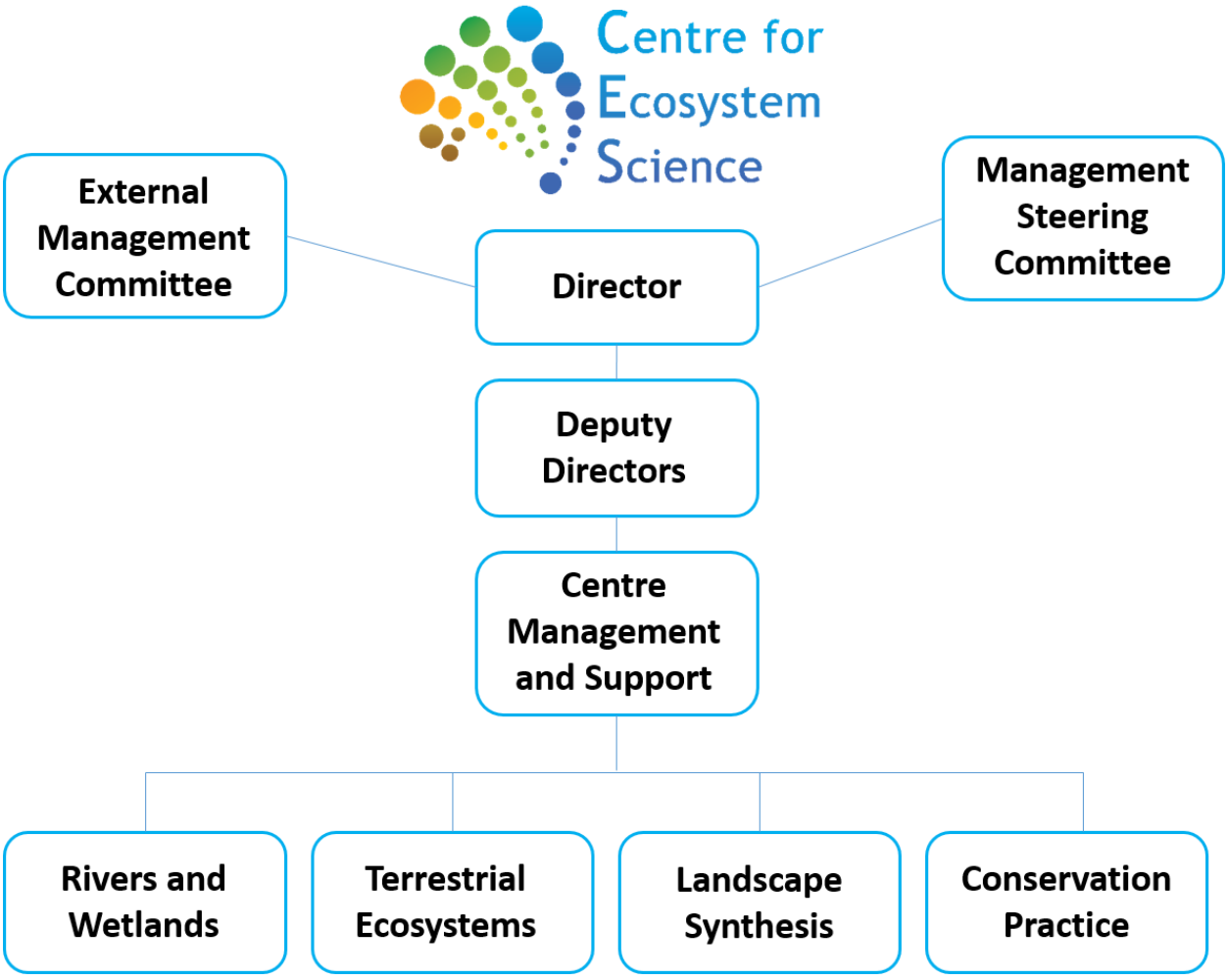
The Centre will continue to build its strategic collaboration with industry through an external advisory committee which meets twice a year. It comprises senior officers from NSW Office of Environment and Heritage; NSW Office of Water; Murray-Darling Basin Authority, Department of Environment; South Australia Department of Environment and Heritage; Queensland Department of Environment and Heritage Protection. Our strong links with industry (Government at State, Territory and Federal Levels), Catchment Management Authorities and non-government organisations provide considerable opportunity for UNSW to be recognised as leading in this area. Already, there are also strong links with Government advisory groups that provide expert opinion at all levels of Government. As the focus of CES research programs grow, the membership of the Committee may grow as well.

8 COMMUNICATIONS

The Centre will seek to improve its internal and external methods of communication. This will be done through a series of communications tools, including ongoing development of the web site as well as publicising current projects, research results and commentary on key issues. Specific objectives are established in the business plan.

9 FINANCES

All Centre finances will go through the Centre's own cost centre established in the UNSW financial system and set up under the faculty to recognise the cross disciplinary nature of the centre.


Centre for Ecosystem Science
External Management Committee
Management Steering Committee
Director
Deputy Directors
Centre Management and Support
Rivers and Wetlands
Terrestrial Ecosystems
Landscape Synthesis
Conservation Practice