

NCCARF – Terrestrial Biodiversity Network

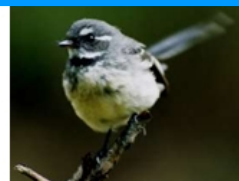
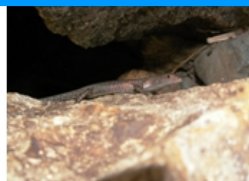
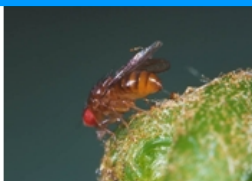
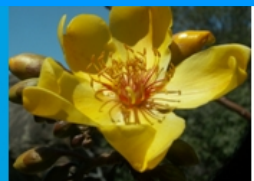
What do we do?

Yvette Williams – Network Coordinator



Network Activities

- Communication
- Noticeboard
- Must reads and grey literature
- Research support
- Events



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National
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Network Membership

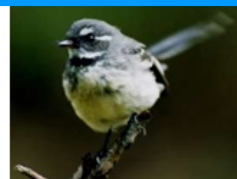
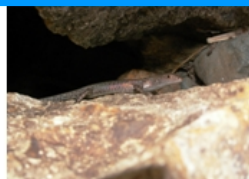
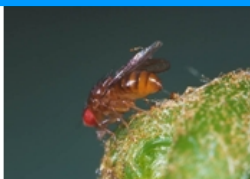
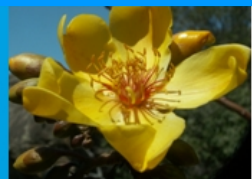
825 members

- Doubled in 2010
- Particularly in government & other stakeholder groups
- Lower uptake (TAS, NT, ACT)

Expanded via:

- invitation letter
- brochure
- promotion at conferences
- Roadshow
- Word of mouth

Institution	Number of members
Research	369
Government	
- Federal	39
- State	191
- Local	93
Community (NGOs)	52
Industry/Private sector	13
Other	68
Total	825



Communication:

Website

- Network Structure
- Priorities and Goals
- Funding
- Downloadable resources
- Roadshow
- Noticeboard
- Registration

The screenshot shows the homepage of the NCCARF Terrestrial Biodiversity Adaptation Research Network. The header features the NCCARF logo and navigation tabs for 'About Us', 'Funding', 'Resources', 'Register', 'Contact Us', 'Jobs', and 'Roadshow'. The main content area is titled 'Terrestrial Biodiversity Adaptation Research Network' and includes a 'Home' section with three images of native Australian species: a butterfly, a quokka, and a pardalote. Below the images, text explains that the network is hosted by James Cook University and led by Professor Stephen Williams and Professor Lesley Hughes. It outlines the network's primary goal of developing regional and practice strategies to increase the resilience of terrestrial ecosystems and maximize their adaptive potential under climate change. The philosophy is to have a truly national focus, distributing activities and funding opportunities across all states and territories. Contact information for registration and technical enquiries is provided.

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Home

The Terrestrial Biodiversity Adaptation Research Network is hosted by James Cook University.

This Network is led by Professor Stephen Williams, Director of James Cook University's The Centre for Tropical Biodiversity and Climate Change, and Professor Lesley Hughes, who is a member of the Climate Futures group at Macquarie University.

The primary goal of this network will be to develop regional and practice strategies that increase the resilience of terrestrial ecosystems and maximise their adaptive potential under climate change. The research priorities of this network will be to collate knowledge, co-ordinate expertise and synthesise these inputs into recommendations and frameworks that will guide the way forward for Australia to adapt to global climate change.

The philosophy of the network is to have a truly national focus, and thus to distribute both activities and funding opportunities across all states and territories, and amongst as broad a range of researchers, institutions, and stakeholder organisations as possible. We welcome suggestions from all members as to how we can best serve their research and collaboration needs.

If you would like to participate in this Adaptation Research Network, please contact
Dr Yvonne Williams (email: yvonne.williams@jcu.edu.au) or complete registration.
For any technical enquiries regarding making your data, publications or other material available to this network, contact:
Andrew Brown (email: andrew.brown4@jcu.edu.au)

MEMBERS

Email:

Password:

Remember me

[LOCAL](#)

[Forgot login?](#)

[No account yet? Register](#)

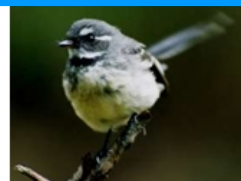
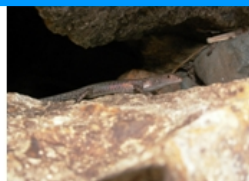
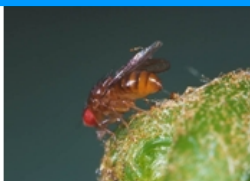
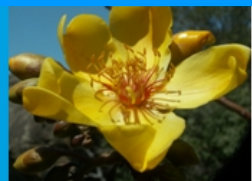
TRE-BULLETIN

- 2009
- 2010
- Latest Bulletin

INFO. SHEETS

- Species Responses
- Assisted Migration - NEM1

Check out the
MUST READ
Section



Noticeboard

- Funding Opportunities
- Student Projects
- Jobs
- Events






Terrestrial Biodiversity Adaptation Research Network
(1 viewing) lauren.hodgson

Mark all forums read

Board Categories

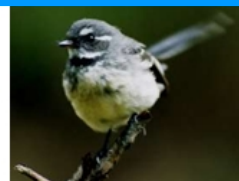
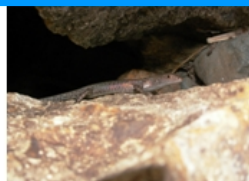
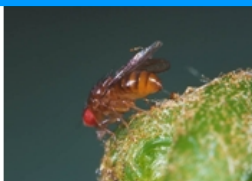
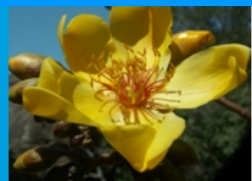
Terrestrial Biodiversity Noticeboard

Please advertise or browse through project and funding opportunities relating to climate change and terrestrial biodiversity below. There are specific boards for student projects, research funding, collaborative opportunities and employment.

Forum	Topics	Replies	Last Post
 Welcome to the NCCARF Terrestrial Biodiversity Network Introduce yourself here and network with researchers and stakeholders from your state	1	0	Welcome to Kunena! by Kunena 09/22/2009 17:07
 Student Scholarships and Project Opportunities 🧑 Advertise or browse project opportunities for students	0	0	No Posts
 Research Funding Opportunities 🧑 Advertise or browse funding opportunities here	1	0	TERN - EIF submission process now open by lauren.hodgson 08/05/2010 00:45
 Events 🧑 What's happening in terrestrial biodiversity climate change adaptation? Seminars, workshops, conferences advertised here.	1	0	NCCARF-TB Queensland Roadshow - Brisbane 14 Sept by lauren.hodgson 08/13/2010 11:38
 Job board 🧑 Advertise or browse employment opportunities	2	0	PostDoc in Amphibian Population Ecology - 25 Aug by lauren.hodgson Today 00:40

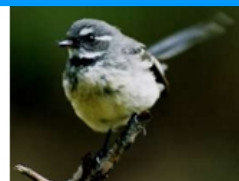
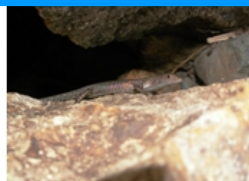
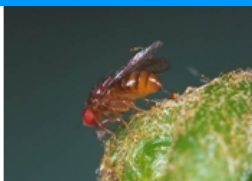
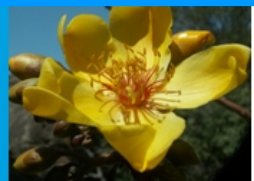
Mark all forums read

Board Categories



Noticeboard

- To link stakeholder research needs with researchers
- Associated funding not necessary
- Advertise student projects
- Jobs and Events notices



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Must reads and grey literature

Must reads:

- Recent published literature on adaptation for terrestrial biodiversity placed on the website
- Currently working on 100 best reads section

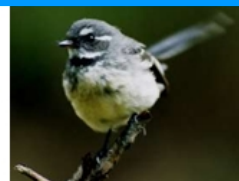
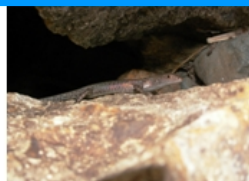
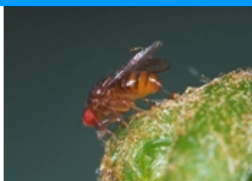
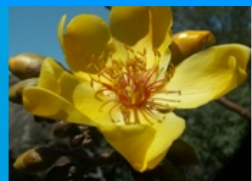
Grey literature:

- Reports or links placed on website for access to both national and international sources.
- invite people to send these reports if they feel relevant to the network.



Database and GIS information

- Link to ARCS, Atlas of Living Australia and Australian National Data Service (ANDS)
- Help with data input
- Link to GIS resources



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TRE-bulletins 2010

Four page, quarterly research update to inform researchers and stakeholders

- January
- April
- July
- October

Newsletter of the Adaptation Research Network for Terrestrial Biodiversity

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Adaptation Research Network
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Edition 141
April 2010

Terrestrial Research E-bulletin

Convener's Update

We come to the fourth edition of the TRE-bulletin. The Terrestrial Biodiversity Network has now been underway for just over a year and at this time we would like to reflect on our achievements to date and, of course, ask how we can improve our performance into the future.

To help us achieve this aim, we will be carrying out a small web-based survey this week to ask our Network members for feedback to the committee. Respondents will be asked to answer twelve questions relating to the kind of information you have found useful in the Network, and what you would like to see us provide in the way of resources and information in the future. We greatly appreciate any feedback that you can provide.

In the course of TRE, we continue our "Focus On" section to look at research underway on climate change adaptation in Queensland, including an interesting insight into how graziers might adapt to benefit both themselves and seed species, and how habitat fragmentation present in the subalpine zone impacts on native species in Queensland's Wet Tropics.

Following on from our recently published Assisted Migration Information Sheet, we also bring you an update on plans for assisted migration of the critically endangered Western Swamp Tortoise in WA, and report on a recent workshop on climate change and the Murray-Darling Basin with its look place in Canberra. Lastly, we bring you our regular "Must Read" and "Conference Update" sites.

In This Issue:

Focus on Queensland	2
Tombstones on the move	3
Mural Road	3
Murray-Darling Basin Workshop	4
Conference Update	4

Focus on Queensland

From desert uplands to tropical rainforests, Queensland is a vast state offering a variety of terrestrial habitats. Indeed, the Wet Tropics rainforests, southern rain forests, subtropical rainforests and the Great Barrier Reef are all listed as World Heritage Areas. Queensland has already managed a high proportion of its wetlands, 11% of its water catchment and a considerable portion of its forest. Queensland is also one of the few states in the world to have a 20-year record of water quality monitoring and an increase in severe weather events, such as drought and high winds, coupled with likely catastrophic impacts on the state's biodiversity. Here we focus on some of the adaptation projects currently underway in the Sunshine State.

In Search of Cool Refugia by Dr. Luke Shoo CSIRO, James Cook University, Townsville, QLD

The Wet Tropics World Heritage Area has attracted high level protection to the tropical rainforests of Australia's north-west. Despite this, many researchers worry that contemporary climate change will spell environmental catastrophe for this ecosystem. One mitigation option we can take to maintain the level of biodiversity is to safeguard places where species are most likely to survive as the climate warms. These places, known as refugia, are various landscapes that are naturally buffered from extreme weather by factors such as dense canopy, elevation, coastal influences and shading. These elements combine to generate unusually cool microclimates.



Cool refugia, such as Queensland's highest mountains, can be critical in helping some species adapt to climate change in the future.

Cool refugia are already a critical component of the current protected area network. Around 40% of wet tropics and sub-tropical rainforest species are found in just 20% of the protected area and these limited areas of wet habitat could become increasingly important if species shift upland in response to increasing temperatures.

Targeted forest vegetation can be achieved in a short time frame. High biodiversity natural strategies, such as large cover comparable to intact vegetation within 10-20 years and could increase the extent and connectivity of cool habitat. Large projects are expected over 20 years but less intensive plantings, and naturally established regrowth can be seen in a few years. There is a clear and urgent need to assess whether forest plantings for carbon sequestration can be harvested to help fund vegetation efforts within important refugia.

With colleagues from the Centre for Tropical Biodiversity and Ecosystem Change at James Cook University (led by the Marine and Tropical Sciences Research Facility), I am working to identify critical refugia that will provide a refuge for climate change in rainforest species. Major priorities are to identify existing refugia not currently included in the protected area network, along with sites where land degradation could potentially be reversed to strengthen refugia.

Steve Williams & Lesley Hughes

Meet the Steering Committee

Professor Hugh Possingham

Hugh is Professor of Mathematics and Ecology at the University of Queensland, the director of Australian Environmental Decision Analysis (www.aeda.edu.au) and an ARC Federation Fellow.



Hugh uses a variety of quantitative methods, including modelling, spatial analysis and decision analysis to inform applied conservation policies and inform management decisions.

With over 200 publications, Hugh's research has contributed to many conservation issues, including reducing land clearing in Australia and reining the world's oceans. Hugh sits on 17 committees and boards, external to UQ, including the Wetland Group, advising policy makers and managers on a variety of issues.

Helping Graziers Support Biodiversity Adaptation



CSIRO research has shown that 90% of Queensland's grazing production is cattle. As a result, much of Queensland's remaining biodiversity occurs on land used for cattle farming and ecosystem health is inherently connected to how farmers work their land.

Helping graziers select land use changes will benefit wildlife by creating more terrestrial habitat species which occur in grazing lands in Queensland.

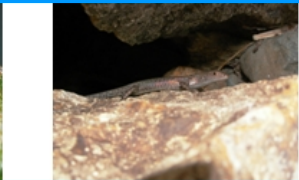
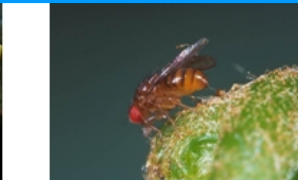
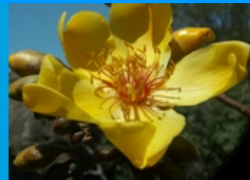
In the Murray-Darling Basin, improved water availability for farmers has led to a decline in biodiversity, but how rural communities manage the land. Under climate change, many cattle grazing regions are expected to experience increasingly variable rainfall and seasonally patterns, higher temperatures and more frequent extreme weather events such as floods and drought. Thus, the future of biodiversity on cattle grazing lands will be linked to the recovery of rivers, which will be discussed at the

that while there may be some potential for refugia to be resilient to climate variability, this potential may also be more vulnerable to future climate changes as they are less likely to use technology such as seasonal climate forecasts. The problem is that many governments and planning bodies are not even using seasonal climate forecasts. This gap will be discussed in the vulnerability and resiliency of grazing systems in the future.

CSIRO's Climate Adaptation Flagship, via called the adaptive potential of 130 cattle graziers in north Queensland. The found that many governments and planning bodies are not even using seasonal climate forecasts. This gap will be discussed in the vulnerability and resiliency of grazing systems in the future.

She suggests that advice could be reinforced through a number of avenues such as assisting graziers to develop strategic skill sets and encouraging them to collaborate and plan for the future. The information generated through this work will help greater communities become resilient to climate change and improve the sustainability of environmental assets.

CSIRO's Climate Adaptation Flagship, via called the adaptive potential of 130 cattle graziers in north Queensland. The found that many governments and planning bodies are not even using seasonal climate forecasts. This gap will be discussed in the vulnerability and resiliency of grazing systems in the future.



Information sheets

Released:

- Species responses to climate change
- Assisted Migration

Upcoming in 2010:

- Fire and climate change
- Conservation planning



Assisted Migration as a Management Tool for Species Threatened by Climate Change

Climate zones are shifting rapidly. For some species, dispersal is adequate for tracking environmental change, but for others the rate of climate change will exceed their ability to adapt in their current range or disperse to more climatically suitable habitat. In some cases, a radical management action known as 'assisted migration' may be required to help species persist into the future and prevent climate change related extinctions.

This information sheet explains the concept of assisted migration as a management strategy for terrestrial species threatened by climate change, including some of the more controversial aspects of this approach and implications for managers and policy-makers.

What is Assisted Migration?

Assisted migration (AM), also known as translocation, assisted colonisation, or managed relocation involves removing individual plants or animals from an area which has, or will become, unsuitable due to climate change, and moving them to a new site where conditions will be more suitable.

AM is considered a radical and controversial type of human intervention. Most previous instances of AM have been undertaken to protect threatened species from predators, but it is increasingly being discussed as a potential tool for conservation in the face of climate change.

Although the role of AM is still being vigorously debated, some prominent climate change scientists support it under certain circumstances, along with the Ecological Society of Australia.



Climate change induced events, such as frequent wildfires, cyclones or drought, could make habitat unsuitable for some vulnerable species (© L.Valentine).



Translocations to predator-free Escape Island have helped boost numbers of the endangered marsupial, the dibbler (*Parantechinus apicalis*). (© K. Blaby)

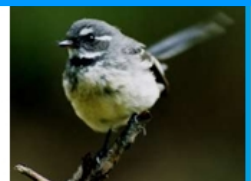
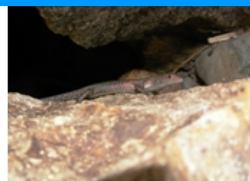
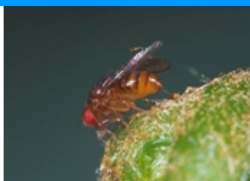
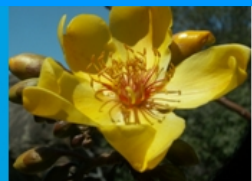
Assisted Migration in Action

An estimated 200 translocations or re-introductions of 42 vertebrate species have been undertaken in Australia for conservation purposes. Mammals and birds have largely been the focus of these efforts to date.

For example, a population of captive-bred dibblers, an endangered marsupial from Western Australia, was translocated to a predator-free island in the 1990's. This translocation has been deemed a success and dibblers have since been re-introduced on the mainland at several other sites.

A similar translocation of Gilbert's potoroo's, Australia's most endangered mammal, to Bald Island also seems to have been successful, at least in the short term.

However, not all translocations are successful and Australia seems to have a higher failure rate than many other parts of the world. This is probably related, in part, to the presence of introduced cats and foxes in most mainland habitats.

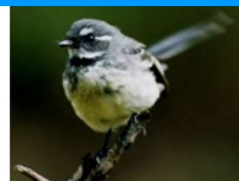
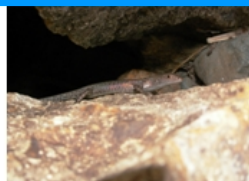
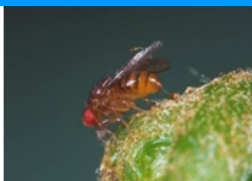
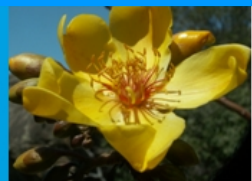


People / Research finder / cross-referencing tool (aligning research interests based on NARP)

AIM: facilitate research collaboration on the Priority Research Areas outlined in the [NARP](#).

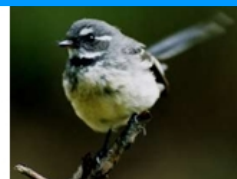
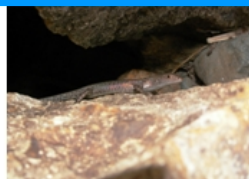
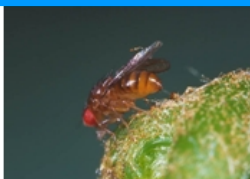
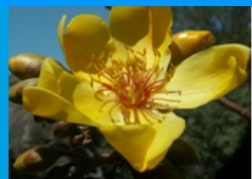
The files linked to each priority research area below are the people which nominated this area of research interest.

- 5.1 National/ Continental scale goals
 - [5.1.1 New conservation goals under Climate change](#)
 - [5.1.2 Legal, policy and institutional architecture needed to achieve conservation goals](#)
 - [5.1.3 Long term observation systems and conceptual models](#)
- 5.2 Regional issues
 - [5.2.1 Designs of landscapes to confer maximum resilience](#)
 - [5.2.2 Climate change interaction with other key stressors](#)
 - [5.2.3 Carbon mitigation to maximise biodiversity conservation](#)
 - [5.2.4 Linking socio-economic trends to yield biodiversity outcomes](#)
- 5.3 Local land management issues
 - [5.3.1 Costs/benefits of adaptation measures to key communities and ecosystems](#)
 - [5.3.2 Fire management adaptation](#)
 - [5.3.3 Response of management in local protected areas](#)
 - [5.3.4 Whole area management for minimising biodiversity loss](#)
- 5.4 Managing key species
 - [5.4.1 Prioritising species for investment.](#)
 - [5.4.2 Effective management of priority species](#)
 - [5.4.3 Managing problem species](#)



Roadshow Timetable

State	Location	Date
QLD	Brisbane - Ship Inn, Southbank	Tuesday, 14th September
VIC	Melbourne - Rydges on Swanston	Tuesday, 5th October
WA	Perth - Curtin University	Thursday, 11th November
NSW/ACT	Canberra - ANU	6th-10th December
SA	-	TBA



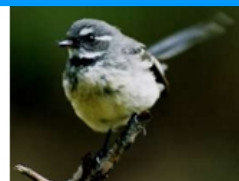
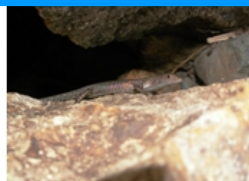
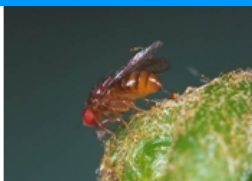
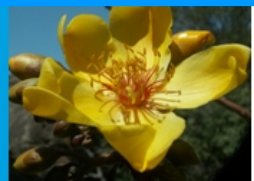
Research Support: Honours/Masters Funding

- Project funding for climate change adaptation research
- Seven students supported in 2009
- Eight students supported in 2010
- Completed project summaries available on website



PhD Collaborative Travel Grants 2010

- Students awarded funding to collaborate and learn new skills unavailable at their home institute
- Nine students supported in 2009
- Nine students supported in 2010
- Completed student reports available on the website

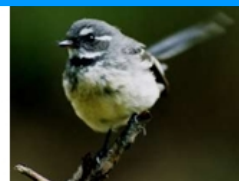
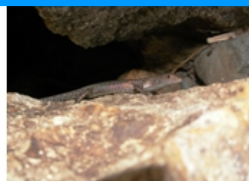
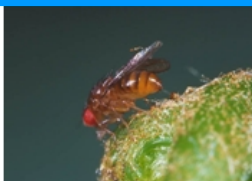
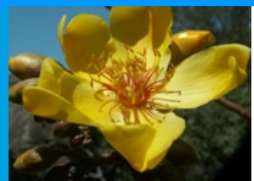


NCCARF
National
Climate Change Adaptation
Research Facility
Adaptation Research Network
TERRESTRIAL BIODIVERSITY

International invited speakers

- International guests to speak on Climate Change adaptation
- Present in capital cities around Australia
- 2009 – Jeff Price from WWF, USA
 - Rachel Warren from Trindle Centre, UK
 - 2010 – Jessica Hellmann from University of Notre Dame, USA

Other suggestions for presenters welcome.



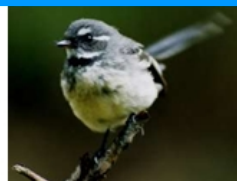
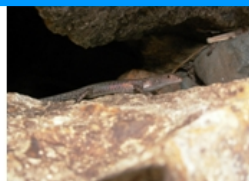
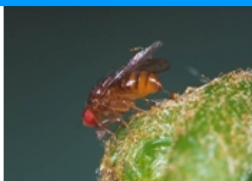
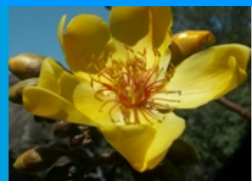
Workshops 2009 – 2010 completed

Conservation Planning (November 2009)

- Convened by Bob Pressey and Steve Williams
- Daintree, North Queensland

Genetic Translocation (April 2010)

- Insuring against extinction and increasing local adaptation
- Convened by Ary Hoffman and Carla Sgro
- Melbourne, Victoria



Workshops 2010 - 2011

Assisted Migration/Translocation Species (November 2010)

- Move what, where when and how
- Convened by Stephen Garnett and Nicki Mitchell
- York, WA

Riparian vegetation (Jan-June 2011)

- with Freshwater Network
- Convened by Sam Capone and Stephen Williams
- Crab Island, NT

Estuarine ecosystems (June-Dec 2011)

- with Marine, Freshwater and Settlements and Infrastructure Networks
- Convened Melanie Bishop (Macquarie Uni)

