



Australian Government



National
Environmental
Science
Programme

Indigenous collaboration for Australia's environmental science

NESP projects deliver collaborative, practical and applied research to inform **decision making and on-ground action**

The **NESP connects** scientists, policy makers, Indigenous people and communities

NESP research has real **impact** through the partnerships and collaboration between policy makers and scientists



Pearls of wisdom for Australia's threatened shellfish reefs

Shellfish reefs are vital to the health of Australia's bays and estuaries and support marine life and fish production. They are also important spiritual, cultural and food sites for Traditional Owners. They are one of Australia's most threatened marine habitats.

Under the hub's project, over 20 Traditional Owners from Australia and New Zealand came together to share their aspirations and provide advice on collaboration for shellfish reef restoration. They generated the 'seven pearls of wisdom' to support partnerships between Indigenous people, research institutes, conservation groups and restoration practitioners.

Restoration practitioners have welcomed the 'seven pearls of wisdom' which are already being used to embed active partnership approaches.

The workshop process and outcomes are a significant boost to the different groups working in partnership toward shellfish restoration in Australia.

The 'seven pearls of wisdom' recognise respect for Indigenous Country, rights and history; support project co-design and co-management with Traditional Owners; encourage local thinking for community needs and employment; highlight Traditional ecological knowledge; support the generation of shared vision; prompt early engagement and effective long-term relationships; and recognise the connection between land and sea.



Indigenous engagement and research leadership

The participation of Indigenous people in NESP's research is a core focus of the program and in the past year the hub has further strengthened relationships with Indigenous researchers and leaders.

To better support the involvement of Aboriginal and Torres Strait Islander people in its research and the important role custodianship of Country and Traditional Ecological Knowledge play in threatened species conservation, the hub has integrated and made explicit roles for Indigenous people in its governance structure.

The hub's Indigenous Liaison Officer, Brad Moggridge, undertakes a pivotal role to identify opportunities for Indigenous involvement at all levels of research and shape how cultural considerations and Indigenous community needs influence research development. Spanning the bridge of cultural knowledge and Western science, Brad's leadership provides a strong pathway for connecting both worlds. In addition, the hub's Indigenous Reference Group provides a breadth of guidance and advice for their biodiversity research activities.

Indigenous leadership roles are supporting increased Indigenous opportunity in the hub's threatened species research.

The hub's Indigenous governance structure and Indigenous-led engagement activities are strengthening the oversight and leadership of research, involving Indigenous conservation leaders in the work of the hub, and providing vital connections for future collaborations and Indigenous-led science.



Tradition meets science to understand climate change on Country

Indigenous Australians are amongst the most vulnerable when it comes to Australia's changing climate. They confront rising sea levels, increasing temperatures and changing rainfall, which are combining with other environmental stresses to degrade the land, water and natural resources they have relied on and cared for over generations.

At the same time, Indigenous communities are custodians of a wealth of knowledge about Australia's weather and climate. They are reporting many changes and disruptions to seasonal indicators which they have used for generations to understand, track and respond to climatic change.

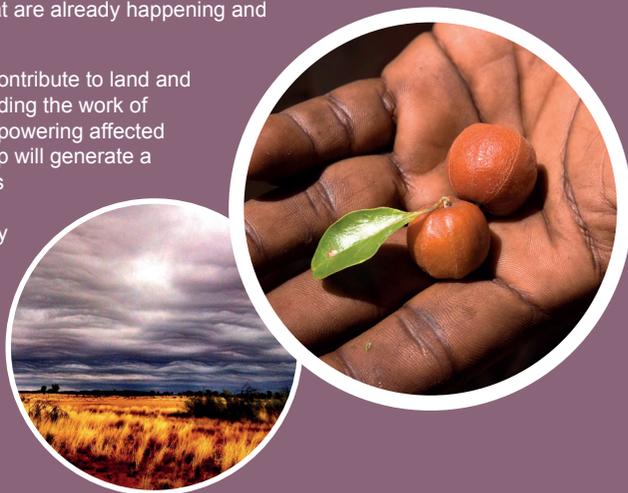
Researchers and Indigenous people are partnering on a project that brings together Indigenous nations from across Australia to share knowledge and experiences of the changing climate, and to have their say on climate change information needs.

Indigenous people will lead discussions at a national workshop in late 2018 to explore the state of the climate, what they value from climate, and how both scientific and Indigenous knowledge about climate change contributes to a shared understanding. Indigenous-led methods, protection of intellectual and cultural rights, and processes of prior informed consent will be at the forefront of discussions for two-way knowledge-sharing.

The voices of Indigenous Australians are critical to informing and helping shape responses to climate change.

As custodians of their Country, Indigenous people continue to use, revive, practice and draw on their traditional knowledge. Conversations at the workshop will bring this knowledge together with the latest climate change science to understand the changes that are already happening and identify those yet to come.

Knowledge generated will contribute to land and sea-country strategies including the work of Indigenous rangers and empowering affected communities. The workshop will generate a shared vision for Indigenous climate change information needs and build the capacity of both scientists and Indigenous people to successfully engage in collaborative research.



Traditional knowledge for Western Sydney's air quality

Indigenous knowledge of local weather patterns is adding to our understanding of air-quality variations in Western Sydney. Working with Indigenous people, this project has defined a set of Indigenous weather cycles which could be more relevant to understanding variations in the region's air quality than the four European seasons.

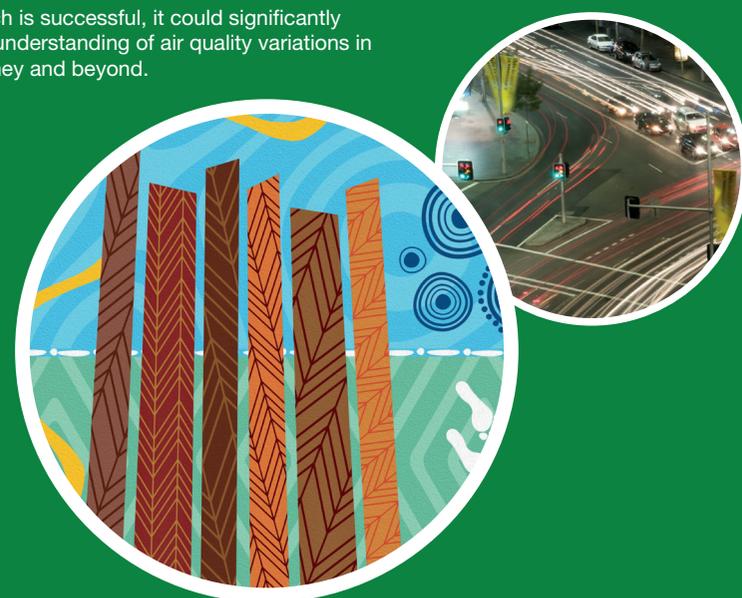
As traditional knowledge in the Sydney region is fragmented due to colonisation and urbanisation, there is no agreed Indigenous seasonal calendar for Western Sydney. To start to address this gap, Stephanie Beaupark, an Indigenous researcher, explored traditional concepts surrounding weather patterns at different times of the year and defined a set of natural cycles based on Indigenous understanding of weather. The seven cycles are named according to their dominant feature, including temperature, rainfall and wind speed.

By challenging established ways of engaging with Indigenous knowledge systems, this work may contribute to the re-learning of Aboriginal knowledge that was thought to have been lost.

Incorporating Indigenous perspectives into this air quality project has opened up a whole new dimension to the work.

Researchers are now assessing if the seven identified cycles will provide a more meaningful way to conduct air quality analysis in the region.

If the approach is successful, it could significantly enhance our understanding of air quality variations in Western Sydney and beyond.



Indigenous rangers boost knowledge of estuarine health

Scientists, Indigenous rangers, citizen scientists and natural resource management groups have partnered to deliver the first comprehensive assessment of estuarine health in the southern Great Barrier Reef.

Estuarine wetlands play a critical role in coastal water quality and until now their management needs were poorly understood. Through training in MangroveWatch assessment methods, the hub's research team made capacity building for local Indigenous rangers a priority. The rangers have been instrumental in data collection for seven important wetlands between Gladstone and Bundaberg.

An internet portal for the visual imagery collected by the Gidarjil Land and Sea Rangers, and the condition assessments produced in the project, is now under development for access by the community and land and water managers.

Being able to present wetland health imagery to stakeholders provides a powerful and easily-accessible tool for sharing research information.

The project findings have enabled regional natural resource management organisations to prioritise the allocation of funding for wetland management to



maximise benefits. The research has also been used to support funding for two large river bank 'living shorelines' restoration projects in the wake of Tropical Cyclone Debbie, along with the ongoing reporting of the environmental health of tidal wetlands around the Port Curtis region.

Image credits

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The National Environmental Science Program (NESP) is a long-term commitment by the Australian Government to environment and climate research. NESP-funded research will ensure the management of Australia's biodiversity and environmental resources is based on the best available information.

The NESP supports the integration of science into decision-making as a key principle of good environmental policy.

NESP funding of \$145 million over the six years from 2015 to 2021 supports six themed research hubs, along with projects to address emerging environmental research needs.



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