

Indigenous Science Network Bulletin

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Coordinator: Mark Linkson

Contact: IndigenousSciNet@yahoo.com



Promoting First Nations' science, teaching & education

WELCOME EVERYONE! To this first Bulletin of the Indigenous Science Network since 2017. A very big thanks to the previous Convenor, Dr Michael Michie, who was the originator of the Network. Mike worked tirelessly from 1998 onwards for twenty years to maintain and publicise the valuable information and connections that the Network provides for anyone interested in Indigenous science and related fields.

FIRST NATIONS' CO-EDITORS

I would like to especially welcome our seven First Nations' Co-Editors. As I am not Indigenous, it is imperative that the interests and understandings of First Nations' teachers, scientists, academics and community members monitor, guide and support the information that is presented by the Network. We are very fortunate to have senior academics from First Nations' peoples of Australia (Michael), New Zealand (Liz), Canada (Michelle) and Nigeria / USA (Femi). In addition, we have officers from three very significant Australian educational authorities: Joe with ACARA (the Australian Curriculum, Assessment and Reporting Authority); Carly with AITSL (the Australian Institute for Teaching and School Leadership) and Jesse with the Stronger Smarter Institute.

This Network originated in Darwin, NT, Australia and naturally has an inclination towards Australian issues and events due to the sheer numbers of members who live here. Currently we have around 250 members based in Australia with 150 from other countries including New Zealand, Canada, the UK, South Africa, Nigeria, USA and Japan. Events, issues and commentary are welcome from any and all First Nations peoples. The Network can only be strong and useful with your continuing interest and participation. Many thanks to those members who contributed to this issue.

Cheers, **Mark Linkson**, Coordinator.



Tiwi designs by Jennifer Coombs,
Melville Island, NT

First Nations' Co-Editors

Professor Elizabeth McKinley, University of Melbourne

A.Professor Michelle M. Hogue, University of Lethbridge

A.Professor Michael-Shawn Fletcher, University of Melbourne

Dr. Femi S. Otulaja, University of Witwatersrand

Joe Sambono, ACARA, Brisbane

Carly Jia, AITSL, Melbourne

Jesse King, Stronger Smarter Institute, Brisbane

We acknowledge and pay respect to the past, present and future Traditional Custodians and Elders of the Aboriginal and Torres Strait Islander peoples of Australia and all First Nations peoples across the world. We celebrate and promote the continuation of their cultural, spiritual and educational practices.

INDIGENOUS SCIENCE NETWORK BULLETIN ITEMS

Items are listed under five headings being News and Views; Resources; Indigenous Astronomy; Conferences / Seminars; and Calendar of events (not this issue sorry). Weblinks for most items are contained as hyper-linked addresses or as hotspots within illustrations. Some items will not have links. All links were active at the time of publication (15 October 2020).

ACKNOWLEDGMENT: This issue contains items from the following network members: Mike Michie, Duane Hamacher, Femi Otulaja, Bhaskar Upadhyay, Hmalan Hunter-Xenie, Ro Hill, Birut Zemits and Samuel Brayshaw. Many thanks and to all members, your future submissions are most welcome.

NEWS AND VIEWS

Ancient Aboriginal site Moyjil could rewrite the global story of human migration (ABC News)

Scientists examining an ancient Aboriginal site at Warrnambool in south-west Victoria are split over whether charred rocks and weather-worn shells are 120,000-year-old evidence of Indigenous life.



Moyjil, or Point Ritchie, is a popular lookout at Warrnambool, in south-west Victoria. (ABC South West Victoria)

Seven seasons and a very rare fish (Museum and Art Galleries of the NT)

“Balnba is the rainy season. Dalay is like the monsoon season, the season of the Cyclones. Mayilema is when it starts drying out. And between Dalay and Mayilema you have what we call the season of the knock 'em down ... that's when the last final rain comes - a big, powerful storm - and it knocks over all the spear grass.” <https://www.magnt.net.au/thecollection-s01e03>

Live at the Museum - Sky Stories (National Museum of Australia)

The First Australians and the Endeavour crew looked up at the same night sky in 1770, but they saw things very differently. Discover Indigenous knowledge systems and James Cook's astronomical findings in our next live program for 'Endeavour Voyage: The Untold Stories of Cook and the First Australians', led by Gamilaraay / Yuwaalaraay astrophysicist Peter Swanton, astrophysicist Dr Brad Tucker, and one of our curators, Lily Withycombe. Use this link to access the live stream: <https://bit.ly/2DmsvFJ>

This rainforest was once a grassland savanna maintained by Aboriginal people – until colonisation (*The Conversation*)

If you go to the Surrey Hills of northwest Tasmania, you'll see a temperate rainforest dominated by sprawling trees with genetic links going back millions of years. It's a forest type many consider to be ancient "wilderness". But this landscape once looked very different. The only hints are a handful of small grassy plains dotting the estate and the occasional giant eucalypt with broad-branching limbs. This is an architecture that can only form in open paddock-like environments – now swarmed by rainforest trees.

The temperate rainforest in Tasmania's Surrey Hills are a legacy of colonialism.
(Author provided).



Cook's arrival revisited (*The Conversation*)

This year marks 250 years since Captain James Cook arrived in the Pacific. His arrival triggered British colonisation of the region. We asked researchers to reflect on what happened and how that shapes us today. <https://cook250.netlify.app/>

Tupaia, the star navigator who helped James Cook reach New Zealand & Australia (*ABC News*)

The forgotten story of Tupaia, a Polynesian high priest and star navigator, whose knowledge of the seas and Polynesian languages assisted Capt. Cook to successfully travel to New Zealand and barter with Maori peoples and then successfully move onto Australia.



Historians say Tupaia played a critical role in helping the Endeavour reach New Zealand. (Illustration: Mat Tait / Supplied: Auckland Museum)

New coins celebrate Indigenous astronomy, the stars, and the dark spaces between them (*The Conversation*)

Two new coins have been released by the [Royal Australian Mint](#) to celebrate the astronomical knowledge and traditions of Aboriginal and Torres Strait Islander people. They feature artworks from Wiradjuri (NSW) and Yamaji (WA) artists that represent two of the most famous features in Aboriginal astronomy: the great Emu in the Sky and the Seven Sisters. (Apparently the coins have sold out.)

Two new uncirculated silver \$1 coins commemorate Indigenous astronomy. (*Royal Australian Mint*). Are they not the most beautiful coins you have ever seen??



Prioritise Indigenous Knowledges and embed a western science perspective

Kup Murris is a specialised cooking technique used throughout Zenadth Kes (Torres Strait Islands). An earth oven filled with stones and firewood to cook our meats and seasonal vegetables. Every step of preparing a Kup Murris is a well thought out process, where each material is carefully selected to ensure our produce and staples are cooked to perfection. My ancestors knew what particular natural resources conducted and



insulated heat better than others through years of experimentation. This tradition has been practiced for thousands of years and my ancestors knew heat could move from one object to another and that the transformation of heat occurs via three ways; conduction, convection and radiation. Funnily enough, these are two broad content descriptors in the Australian National Curriculum for Science ([ACSPH016](#) and [ACSSU049](#)).

Author: Ren Songoro

Ren is a Saibai - Zenadth Kes (Torres Strait Islands) and Papuan New Guinean woman. Teaching high school Science and Maths on Ngambri/Ngunnawal country. She is also one of the founding members of the National Indigenous Youth Education Coalition (NIYEC).

Vale Stephen Harris (1942-2020)

We would like to acknowledge the passing of Stephen Harris in August 2020. Stephen was a teacher and researcher in Indigenous education. He lived for many years in the Northern Territory of Australia and was a lecturer at the Northern Territory University. He was interested in two-way learning and author of the book, *Two-way Aboriginal Schooling*.

Harris, S. (1990). *Two-way Aboriginal schooling: Education and cultural survival*. Canberra: Aboriginal Studies Press.

Indigenous science goes far beyond boomerangs and spears

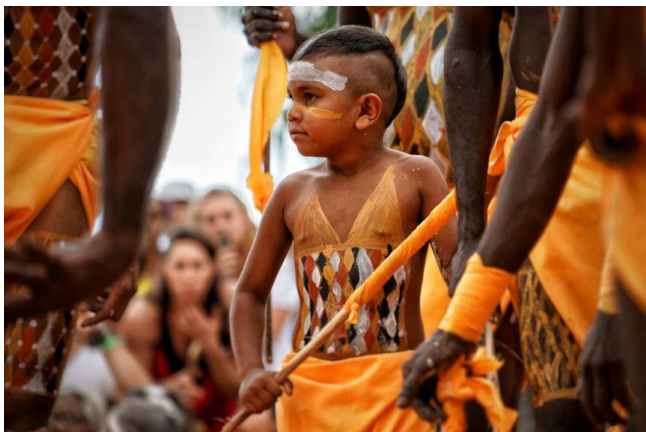
I am an Aboriginal science educator. I have a love of the scientific method and all the amazing knowledge that exists within Western science, but I also have a huge amount of awe and fascination with all of the amazing scientific knowledge, technologies and processes that Indigenous peoples have developed over thousands of years.

The author Joe Sambono is a Jingili man, and zoologist. He is currently a Curriculum Specialist in Science and Aboriginal and Torres Strait Islander Education with the Australian Curriculum, Assessment and Reporting Authority. He is also a Co-Editor of this Bulletin.



Yothu Yindi Foundation plans to build new school at Garma Festival site (ABC News)

Standing in an empty paddock at the Garma festival site, Murphy Yunupingu spans his arms wide — wide enough to take in full scope of his bold, costly and nostalgic new vision. The vision is for a new school, a reboot of an old school, his old school, named Dhupuma College.



The original Dhupuma College was opened at Gulkula, which is now the site of Garma Festival. (ABC: Mitchell Woolnough)

Indigenous cultural competency in the Australian teaching workforce - AITSL (Australian Institute for Teaching and School Leadership)

AITSL is seeking your views on how teachers and leaders in schools across Australia can be supported to enhance their Indigenous cultural competency. Get involved by sharing your response to the focus questions in the discussion paper by upload, email or post – see details below. The focus questions unpack four areas for discussion, and are based on consultation to date (see [about the work](#) (PDF, 918KB) for more information).

<https://www.aitsl.edu.au/indigenous-cultural-competency/get-involved>



The discussion paper was compiled by Carly Jia, Senior Advisor on Aboriginal and Torres Strait Islander Education with AITSL. Carly is also one of this Bulletin's Co-Editors. Linked to her image above is an article she wrote for the Guardian newspaper on issues related to cultural competency in schools: *Australian history is much larger and more varied than the one told in classrooms*

From 7809 Marcialangton to 7630 Yidumduma: 5 asteroids named after Aboriginal and Torres Strait Islander people (*The Conversation*)

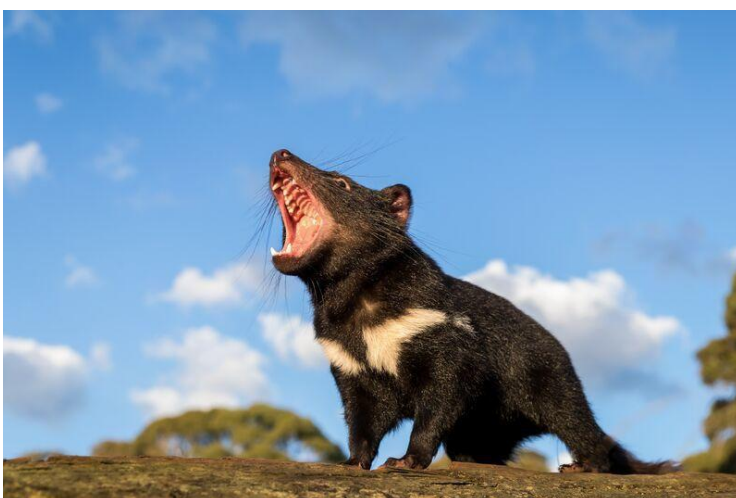
The International Astronomical Union officially accepted five new asteroid names that honour a selection of Aboriginal and Torres Strait Islander communities, elders and academics whose work has been particularly influential. The move follows similar commemorations in 2019, the International Year of Indigenous Languages, when a plethora of stars, exoplanets, planetary features and asteroids were given Indigenous names.



Meriam dancers from the Torres Strait island of Mer, performing the Maier (Shooting Star) Dance for the Werner Herzog film *Fireball*. (*Duane Hamacher*)

For the First Time in 3,000 Years, Tasmanian Devils Return to Mainland Australia (*Smithsonian Institute via The Guardian*)

Tasmanian devils are the largest marsupial carnivore left on Earth, but they're still no larger than a small dog—the biggest males top out around 30 pounds. Despite their size, their ferocity and bite strength are legendary, allowing devils to crunch through bone as they scavenge for their dinner. Bringing the species back to the Australian mainland is a bright spot in a year marred by the aftermath of fires that killed, injured or displaced an estimated 3 billion animals.



Conservation groups released Tasmanian devils in mainland Australia earlier this month, marking a major milestone in the process of restoring a species that has been missing for thousands of years. (*Aussie Ark*)

Indigenous education strategy failing remote communities (ANU)

A policy of remote Indigenous students boarding 'off country' to advance their education opportunities is having the reverse effect.

<https://www.anu.edu.au/news/all-news/indigenous-education-strategy-failing-remote-communities>

For a copy of the report "Boarding off and on Country":

https://caepr.cass.anu.edu.au/sites/default/files/docs/2020/9/NT_Ed_Study_2020_7_Sept_1.pdf

International PhD Positions and Scholarships in Education | Charles Darwin University

Charles Darwin University has two PhD scholarships on topics related to language available in the College of Education under the Charles Darwin International PhD Scholars (CDIPS) Scheme to undertake a PhD by publication. It is expected that the CDIPS will equip students with significant publication records before graduation to launch their careers. The scholarship consists of tax-free stipends and tuition fee waivers.

www.cdu.edu.au

<https://www.cdu.edu.au/education/research/international-phd-positions-and-scholarships-education>

New Chair of the Indigenous Science Knowledge-Research Interest Group (ISK-RIG) at NARST

The Chair of the Indigenous Science Knowledge-Research Interest Group (ISK-RIG) at NARST has changed hands. The new Chair is now Dr. Bhaskar Upadhyay of University of Minnesota (Bhaskar@umn.edu) who took over from Dr. Femi Otulaja (fso2000@nyu.edu) of The University of the Witwatersrand, Johannesburg. Communication should be through the new Chair. NARST is a worldwide organization for improving science teaching and learning through research. Since its inception in 1928, NARST has promoted research in science education and the communication of knowledge generated by the research. The ultimate goal of NARST is to help all learners achieve science literacy. The previous chair Femi is one of the Co-Editors of this Bulletin and the new chair Bhaskar (congratulations on the appointment!) is also a longstanding member of our Network.



NARST

A global organization for improving science education through research

ISN Facebook page and Twitter account

In renewing this Network, a Facebook page and Twitter account have also been created. The Facebook page has around 160 followers and the Twitter account has around 370 followers (as at 13Oct20). This is quite encouraging, as both media have only been live since early August 2020. Most people are occasional users of Facebook, so I am hoping that Network members will access our page and become official followers. Items posted so far have focussed on Indigenous science, environmental, welfare and equity



issues. More pointedly, the Twitter account is a hotbed of Indigenous issues, much more than just science and covering First Nations peoples of all settler countries.

The Coordinator of this Network, Mark Linkson, has been running both these media but would be happy to share the load with other members if you are keen. We could loan the accounts out a week at a time. Let me know! If you are not a regular user of Twitter, you are encouraged to open or revisit your dormant account and become a follower. You won't be disappointed and may possibly learn a few things! The logos above contain hyperlinks to our live and continuing everyday media presence.

Te Aue Addison-Valaau, Principal Advisor for Plant & Food Research, Advocates for Māori and Pasifika Science Innovators in Aotearoa

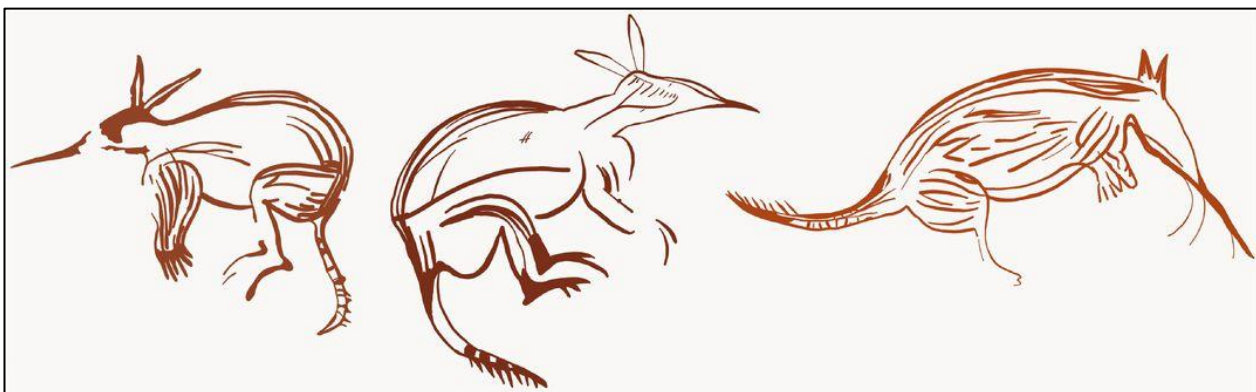
Te Aue currently holds the role of Principal Advisor for Plant & Food Research (Australasia's largest food and beverage science and innovation company) and focuses on creating opportunities for indigenous businesses to commercialize food opportunities to the globe. In this article she talks about her Maori heritage and how that affects her vocation and actions to improve Indigenous success in science and innovation.



Newly Documented Aboriginal Rock Art Is ‘Unlike Anything Seen Before’ (SMITHSONIANMAG.COM)

Recently discovered ancient Aboriginal paintings depict close relationships between humans and animals. In addition to offering insights on the region’s cultural and artistic development, the figures also hold clues to changes in the area’s landscape and ecosystems. Archaeologists were particularly interested in pictures that appear to depict bilbies, or small, burrowing marsupials.

“Bilbies are not known from Arnhem Land in historic times, but we think these paintings are between 6,000 and 9,400 years of age,” Taçon tells the ABC. “At that time the coast was much further north, the climate was more arid and ... like what it is now in the south where bilbies still exist.”



This tracing of a rock painting shows three bilby-like animals no longer found in Arnhem Land. (Fiona Brady via Australian Archaeology)

RESOURCES

International Education Journal: Comparative Perspectives

<http://openjournals.library.usyd.edu.au/index.php/IEJ>

Vol 19, No 1 (2020): Special Issue - "Other ways of knowing and doing": Globalizing social science knowledge in higher education

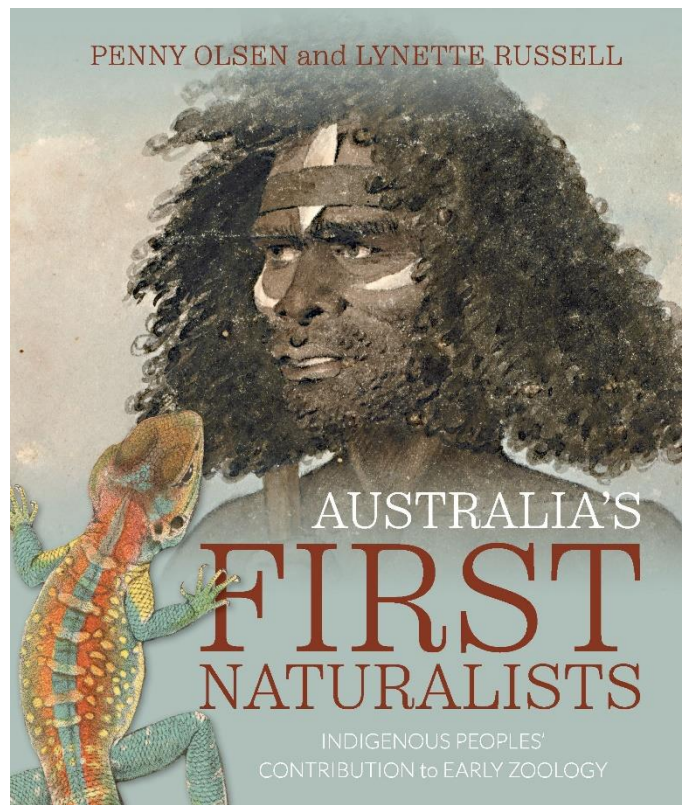
This special issue is the outcome of an international research symposium with the same title: "Other ways of knowing and doing": Globalizing social science knowledge in higher education, organized by the Centre for Comparative and Global Education at the International Institute for Higher Education Research and Capacity Building, O.P. Jindal Global University, India, during December 2017, in collaboration with the Oceania Comparative and International Education Society (OCIES), Indian Ocean Comparative Education Society, World Council of Comparative Education Societies and the UNESCO-Chairs in Community-based Research and Social Responsibility in Higher Education. The seminar and this publication were supported through an OCIES Fellowships and Networking Grant.

Paper in JRST

Upadhyay, B.; Atwood, E.; Tharu, B. (2020). Actions for sociopolitical consciousness in a high school science class: A case study of ninth grade class with predominantly indigenous students. *Journal of Research in Science Teaching*, 57(7), 1119-1147. DOI:10.1002/tea.21626

Australia's First Naturalists : Indigenous Peoples' Contribution to Early Zoology

Would Blaxland, Wentworth and Lawson have ever crossed the Blue Mountains without the help of the local Aboriginal people? The invaluable role of local guides in this event is rarely recognised. As silent partners, Aboriginal Australians gave Europeans their first views of iconic animals, such as the Koala and Superb Lyrebird, and helped to unravel the mystery of the egg-laying mammals: the Echidna and Platypus. Well into the twentieth century, Indigenous people were routinely engaged by collectors, illustrators and others with an interest in Australia's animals. Yet this participation, if admitted at all, was generally --barely acknowledged. However, when documented, it was clearly significant. Penny Olsen and Lynette Russell have gathered together Aboriginal peoples' contributions to demonstrate the crucial role they played in early Australian zoology. The writings of the early European naturalists clearly describe the valuable knowledge of the Indigenous people of the habits of Australia's bizarre (to a European) fauna. Australia's First Naturalists is invaluable for those wanting to learn more about our original inhabitants' contribution to the collection, recognition and classification of Australia's unique fauna. It heightens our appreciation of the previously unrecognised complex knowledge of Indigenous societies.



(Text taken from <https://www.newsouthbooks.com.au/books/australias-first-naturalists/>)

Indigenous Science Knowledge Hub - an online geodatabase (by Samuel Brayshaw)

Sam has created an online map of Australia that allows for the precise plotting of location and science curriculum outcomes for localised Indigenous science knowledge. For further details on how to use this resource, please contact Sam directly at sam@erthscout.com.au

I trained and worked as a geologist for some years in remote Australia. During those times, I was fortunate to meet with local Aboriginal people who shared with me some of their knowledge of the environment, seasons, flora and fauna. I thus began to have an interest in, and understanding of, Indigenous science knowledge. More recently, I have been employed to assist in the studies of Indigenous high school students from Groote Eylandt communities of the Northern Territory while they board in Cairns, Queensland. This has allowed me time to consider how Indigenous science knowledge may relate to outcomes from the Australian Science Curriculum.

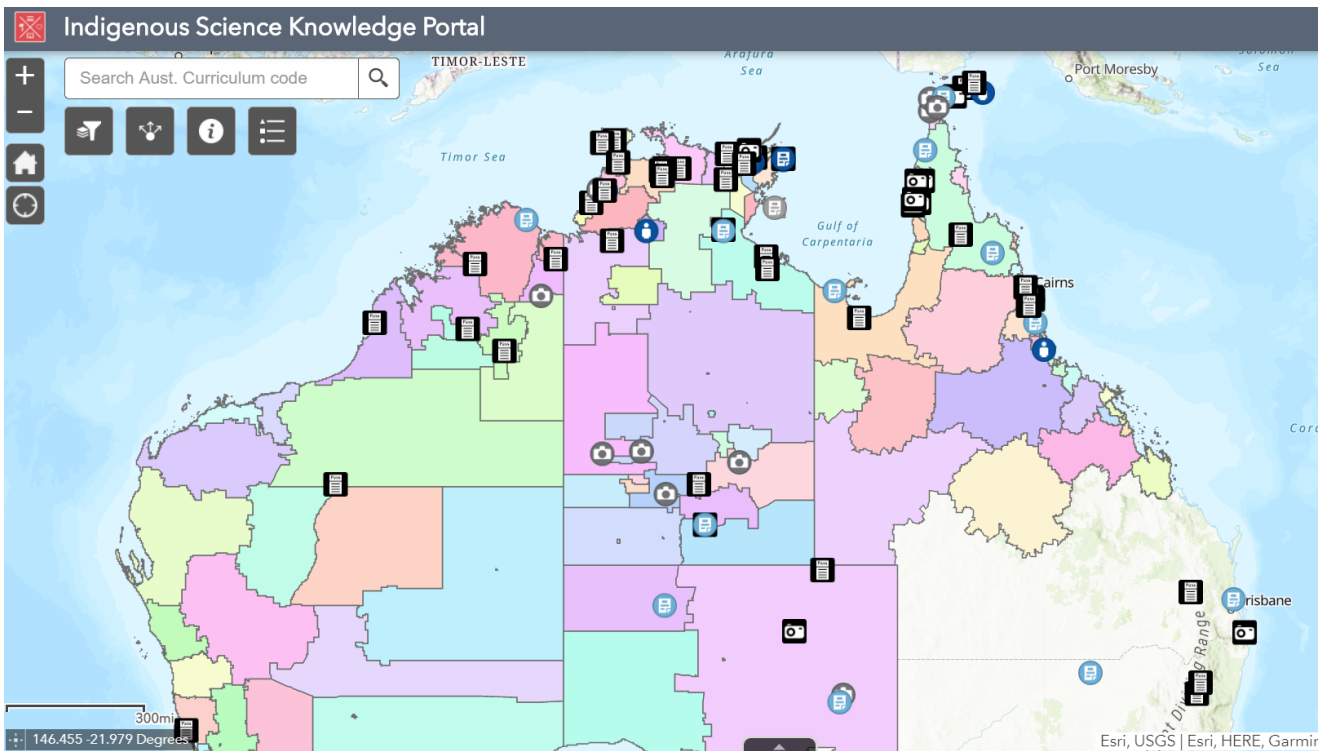


Maps and the information they represent have been used by colonial governments to manage and control Indigenous populations. At the same time, Indigenous peoples have actively worked to secure access to and to have control over mapping resources to support their own enterprises. Geographic Information System (GIS) technologies can engage several critical elements in Science curriculum and knowledges. GIS technologies can lead to understanding cross-disciplinary concepts and solving problems entrenched in science. People use GIS for a variety of reasons but from a curricular perspective, GIS allows us to study cultures, analyse distributions, catalogue data and countless other activities.

Using modern GIS technologies to capture Indigenous Science Knowledge (ISK) that has been curated by generations of traditional knowledge keepers is essential to increased respect and understanding of other cultures, enabling future scientists an ability to think more broadly about people and their environment and have an understanding of Australia's Indigenous history. Having this knowledge and technology available to teachers enables effective curriculum standards, high-quality teacher preparation and support for national policies and frameworks

ERTHSCOUT's Indigenous Science Knowledge Hub has pioneered this as a free to teacher geodatabase of collated Indigenous Science Knowledges from around Australia, attached to Australian Curriculum Codes. This enables teachers' quick access to a millennia of science knowledges and knowledge holders and deliver on high quality science education that directly supports careers in science. Knowledge is constantly being added, and can be added to on demand. Simply email me with the details (sam@erthscout.com.au) or insert the knowledge yourself via the intuitive instructions at

<https://erthscout.maps.arcgis.com/apps/webappviewer/index.html?id=ee764a580c214100ba1e31c6aba03037>.



(1 of 2)

115

OBJECTID 120

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Summary Nijinda Durlga (Gangalidda) Management Plan

Description A detailed document recognising the extensive knowledge of daily and seasonal changes in weather patterns and landscape held by Gangalidda Peoples

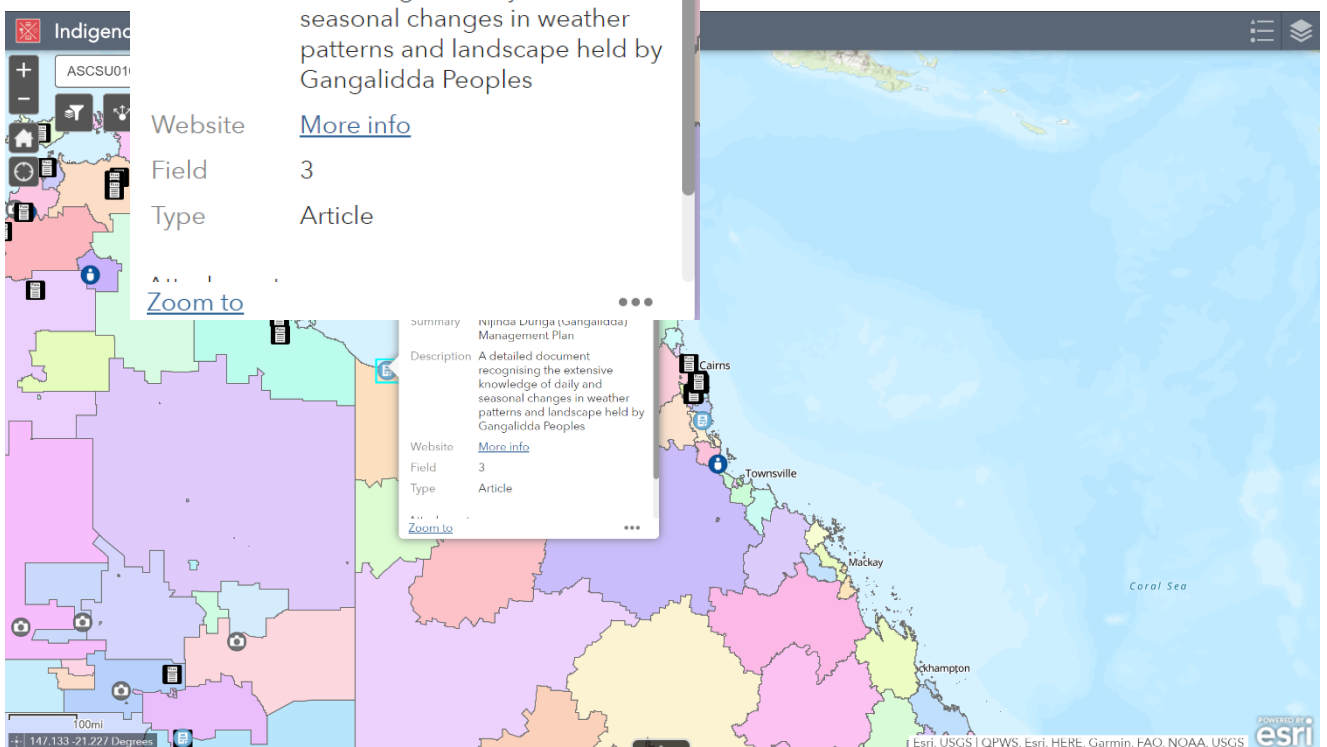
Website [More info](#)

Field 3

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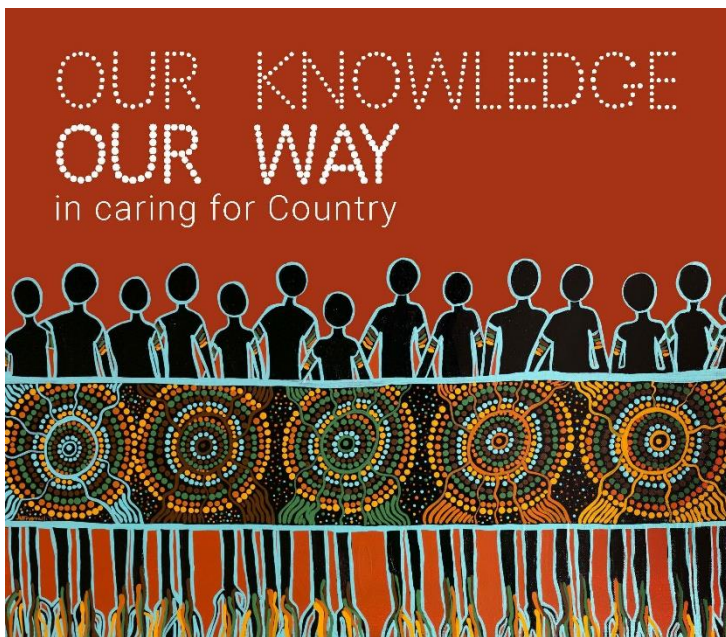
[Zoom to](#)

Screen grabs of the Indigenous Science Knowledge Hub, which is housed on the EARTHSCOUT website. Every icon can be clicked on and expanded to explain details of localised Indigenous Science knowledge and its relationship to the Australian Curriculum – Science. The Hub is available free to all teachers and other interested parties.



How best to strengthen and share Indigenous knowledge in land and sea management

“More than 100 Indigenous contributors have created Australia’s first guidelines on how to best strengthen and share Indigenous knowledge in land and sea management. The Our Knowledge, Our Way guidelines were launched on July 30 at an online event to more than 1,100 people. The guidelines identify ways that partners can support good knowledge practice, for example, through strong partnership agreements, support for cultural governance arrangements, and protocols.” These guidelines better value and strengthen Indigenous knowledge holders and the systems that need to be in place to protect Traditional knowledge, in a platform that can be readily accessed by the researchers and the broader community.” Ricky Archer, CEO of North Australian Indigenous Land and Sea Management Alliance (NAISMA).



Download the guidelines and see a video about them here:

<https://www.csiro.au/en/Research/LWF/Areas/Pathways/Sustainable-Indigenous/Our-Knowledge-Our-Way>

Celebrating our native pantry (*Australian Geographic*)

Appetites for Australian native food ingredients are growing globally, creating a burgeoning industry based on ancient Aboriginal knowledge.

Watson, C. (2020). Celebrating our native pantry. *Australian Geographic*, 158, 50-58.

INDIGENOUS ASTRONOMY

This section of the bulletin is curated by Associate Professor Duane Hamacher from the University of Melbourne. Duane has a long history of involvement in this area and his previous regular contributions to this Bulletin have been appreciated and happily are continuing.

Australian Indigenous Astronomy (2017-2020)

Much has occurred over the past three years since the last Bulletin was published. Research, education and engagement in the area of Indigenous Astronomical Knowledge is rapidly and continuously growing.

Learning and Teaching - *National Curriculum*

Australian Indigenous Astronomy has now been included in the Australian National Curriculum for year levels 5/6 and 7/8 for all subjects (Science, Maths, Technology, English, Humanities, Arts, and Health). Each module comes with background information, activities and projects that address curricula points.



New University Subject



A new subject on Indigenous Astronomy will be offered as a 1st Year Breadth (GenEd) subject through the School of Physics at the University of Melbourne starting Semester 1, 2021. It will be an introduction to cultural astronomy and examine the intersection between Indigenous Knowledge and astronomy, focusing on the science behind the traditions. It will feature a number of Indigenous guest lecturers from Australia and around the world, and will be coordinated by Associate Professor Duane Hamacher. Further details coming soon.

Research Outcomes

Since the last issue of the Bulletin, a range of research, outreach, and popular articles on Indigenous Astronomy have surged. Below is a list of these publications, which are ideal for research, teaching, and general education. Indigenous authors in bold face.

- Lee, A.S., Maryboy, N., Begay, D., Buck, W. **Catricheo, Y., Hamacher, D., Holbrook, J., Kimura, K., Knockwood, C., Painting, T.K., Varguez, M.** (2020) [Best Practices and Protocols for Including Indigenous Astronomy in the Planetarium Setting](#). *Proceedings of the International Planetarium Society*, in press.
- Hamacher, D.W., De Napoli, K. and Mott, B. (2020) [Whitening the Sky: light pollution as a form of cultural genocide](#). *Journal of Dark Sky Studies*, Vol. 1, in press.
- Gullberg, S.R.; Hamacher, D.W.; Lopez, A.M.; Mejuto, J.; Munro, A.M.; and Orchiston, W. (2020). [A Cultural Comparison of Dark Constellations of the Milky Way](#). *Journal of Astronomical History and Heritage*, Vol. 23(2), pp. 390-404.

- Hamacher, D.W., Leaman, T.M., Fuller, R.S., and Bosun, D. (2020) [Solstice and solar position observations in Australian Aboriginal and Torres Strait Islander traditions](#). *Journal of Astronomical History and Heritage*, Vol. 23(1), pp. 89-99.
- Leaman, T.M. and Hamacher, D.W. (2019) [Baiami and the emu chase: an astronomical interpretation of a Wiradjuri Dreaming associated with the Burbung](#). *Journal of Astronomical History and Heritage*, Vol. 22(2), pp. 243-255.
- Hamacher, D.W.; Barsa, J.; Day, R.; Passi, S.; and Tapim, A. (2019) [Indigenous use of stellar scintillation for predicting weather and seasonal change](#). *Proceedings of the Royal Society of Victoria*, Vol. 131(1), pp. 24-33.
- Hamacher, D.W. and Banks, K. (2019). [The Planets in Indigenous Australian Traditions](#). *Oxford Research Encyclopedia of Planetary Science*, edited by Peter Read. Oxford University Press.
- Hamacher, D.W. and Visuvanathan, R.R. (2018) [Twin Suns in Australian Aboriginal Traditions](#). *Journal of Astronomical History and Heritage*, Vol. 21(2/3), pp. 107-114.
- Leaman, T.M. and Hamacher, D.W. (2018) [A methodology for testing horizon astronomy in Australian Aboriginal cultural sites: a case study](#). *Mediterranean Archaeology and Archaeometry*, Vol. 18(4), pp. 431-438.
- Guedes, C.; Hamacher, D.W.; Barsa, J.; Day, E.; Day, R.; Passi, S. and Tapim, A. (2018) [Death and Maier: meteors and death rites in the eastern Torres Strait](#). *Australian Journal of Indigenous Issues*, Vol. 21(3), pp. 39-59.
- Hamacher, D.W. (2018) [Observations of red-giant variable stars by Aboriginal Australians](#). *The Australian Journal of Anthropology*, Vol. 29(1), pp. 89-107.
- Hamacher, D.W., Tapim, A., Passi, S., and Barsa, J. (2018) [Dancing with the stars: astronomy and music in the Torres Strait](#). *Imagining Other Worlds: Explorations in Astronomy and Culture*, edited by Nicholas Campion and Chris Impey. Sophia Centre Press, pp. 151-161.

Pop Articles

- Reeve, P. and Hamacher, D.W. (2020). Learning the Star Knowledge of First Australians. *COSMOS Magazine*, Issue 88, pp. 28-31.
- Swanton, P. and Hamacher, D.W. (2020). Eclipses in Indigenous Astronomy. *2021 Australian Sky Guide*, edited by Nick Lomb. Powerhouse Publishing, Sydney, in press.
- Hamacher, D.W. (2017) Dreamtime Astronomy. *2017 Australian Sky Guide*, edited by Nick Lomb. Powerhouse Publishing, Sydney, pp. 30-31.

Opinion and Conversation Articles

- Hamacher, D.W. (2020) [New coins celebrate Indigenous astronomy, the stars, and the dark spaces between them](#). *The Conversation*, 14 September 2020.
- Hamacher, D.W. (2020) [From 7809 Marcialangton to 7630 Yidumduma: 5 asteroids named after Aboriginal and Torres Strait Islander people](#). *The Conversation*, 26 August 2010.

- Hamacher, D.W.; Anderson, M.G.; Towney, S.; Leaman, T.; and Fuller, R.S. (2020). [Coins and Constellations](#). *Pursuit*, 28 May 2020
- Cropper, S.; Kemp, C.; Little, D.R., and Hamacher, D.W. (2019). [Why do different cultures see such similar meanings in the constellations?](#) *The Conversation*, 16 August 2019.
- Hamacher, D.W. (2018). [Aboriginal traditions describe the complex motions of planets, the wandering stars of the sky](#). *The Conversation*, 18 August 2018.
- Hamacher, D.W. (2018). [The stories behind the Aboriginal star names officially recognised by the world's astronomical body](#). *The Conversation*, 15 January 2018.
- Hamacher, D.W. (2017). [Stars that vary in brightness shine in the oral traditions of Aboriginal Australians](#). *The Conversation*, 9 November 2017.
- Hamacher, D.W. (2017). [Kindred Skies: Ancient Greeks and Aboriginal Australians saw constellations in common](#). *The Conversation*, 10 April 2017.
- Hamacher, D.W. (2017). [How a celestial emu inspired Kirsten Banks](#). *COSMOS Magazine*, 20 February 2017.
- Hamacher, D.W. (2017). [The passions of Aboriginal astronomy guide, Willy Stevens](#). *COSMOS Magazine*, 6 February 2017.

Theses

- Guedes, C.B. (2018) [Exploring Cultural Competence for Astronomers](#). MA Thesis, School of Humanities and Social Sciences, University of New South Wales
- Fuller, R.S. (2020) [The astronomy and songline connections of the saltwater Aboriginal peoples of the New South Wales coast](#). PhD Thesis, School of Humanities and Social Sciences, University of New South Wales

Website

To learn more and attend upcoming events, please follow us on social media and visit our website

- www.aboriginalastronomy.com.au
- www.facebook.com/AboriginalAstronomy
- twitter.com/aboriginalastro



CONFERENCES / SEMINARS

ASERA Conference 2020



The Australasian Science Education Research Association

Promoting science education research in all contexts and at all levels of education

These presentations recorded for the ASERA 2020 Online Conference hosted by the University of Wollongong are listed here with permission of the authors.

[Nicolas Ruddell](https://www.youtube.com/watch?v=e-ZLEENoaY&feature=youtu.be): Enacting the middle ground: An approach using Indigenous sky stories
<https://www.youtube.com/watch?v=e-ZLEENoaY&feature=youtu.be>

[Kathy Paige](https://www.youtube.com/watch?v=tI2RWq3P3e4&feature=youtu.be): Moving on from getting started: mathematics and science specialist primary/middle preservice teachers' experiences and perceptions of indigenous knowledges and practices
<https://www.youtube.com/watch?v=tI2RWq3P3e4&feature=youtu.be>
DOI:10.1080/1359866X.2018.1531386

Michie, Rioux & Hogue: Incorporating Both-Ways Thinking about Time into the Science Curriculum: Aboriginal and Torres Strait Islander histories and cultures cross-curriculum priority in the Australian Curriculum: Science (poster)
<https://conference2020.asera.org.au/Poster/ASERA2020%20Poster%20Michie.pdf>

Christopher Banks et al: Inquiry-based learning in an Indigenous context: Evaluation of the Inquiry for Indigenous Science Students (I²S²) program
<https://www.youtube.com/watch?v=AjCkeCGQsk&feature=youtu.be>

[Kimberley Wilson](https://www.youtube.com/watch?v=MZY59WIHLV4&feature=youtu.be): Exploring the challenges and enablers of growing a STEM PBL program in a low SES junior secondary context.
<https://www.youtube.com/watch?v=MZY59WIHLV4&feature=youtu.be>

Here are the paper details that this presentation is drawn from:

Wilson, K. (2020). Exploring the challenges and enablers of implementing a STEM Project Based Learning programme in a diverse junior secondary context. *International Journal of Science and Mathematics Education*. DOI: 10.1007/s10763-020-10103-8
<http://link.springer.com/article/10.1007/s10763-020-10103-8>

To buy the article from the Springer website is listed at €34! However, I am sure that if interested, Kim will send you a copy if you ask nicely.

This bulletin of the Indigenous Science Network is distributed four times a year via email directly to members. Membership is open to all. If interested in being a part of the Network, please contact the Coordinator via email at IndigenousSciNet@yahoo.com. The next issue is set for release in January 2021.

ATSIMA online conference series

The Aboriginal and Torres Strait Islander Maths Alliance has organised a series of online seminars this year to partially make up for the Covid-related postponement of their 2020 biennial conference which was to be held in Yirrkala in N.E. Arnhemland. The first was held in late September and a recording can be viewed by registering via this link:

https://unimelb.zoom.us/webinar/register/WN_h0_a3UYUTXidS6Bmv6dqNQ

Notice of further seminars can be gained by following their Twitter account



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