

Questions from Indigenous Science Conversations in National Science Week NESP Hubs at Questacon 15th August 2018

During National Science Week August 2018 Indigenous researchers and advisors of the National Environmental Science Program held two conversations at Questacon on Indigenous scientific knowledge and practice.

Speakers discussed approaches to incorporating Indigenous knowledge and values to climate science, biodiversity, urban planning, and freshwater and marine ecology.

Following a short Q&A session with the panellists, there was an opportunity for the audience to write questions on cards for follow up after the events. We received over 30 questions and are currently working our way through these. You will see below responses that CAUL Hub's Indigenous Knowledge Broker has provided. We will add responses as we receive them.

Many of the questioners sought further information to learn and understand more on how Indigenous knowledge is informing our work. We wanted to start with some links to information on the Indigenous engagement initiatives, research and projects from the Hubs of the National Environmental Science program.

The National Environmental Science Program (NESP) recognises there is much we can learn from Indigenous knowledge and peoples and that Indigenous research partnerships are a highly valued program activity. Each NESP research hub has an Indigenous Engagement and Participation Strategy, developed at the commencement of the program with guidance from the [NESP Indigenous Engagement and Participation Strategy Guidelines](#).

A NESP Indigenous Gathering was held in February 2018 to discuss progress and future directions for Indigenous inclusion in environmental research. Program participants acknowledge that these activities do not represent an end point in themselves, but are part of a collaborative journey of learning and implementation. The NESP research community is committed to working towards Indigenous-led research.

We encourage everyone to look at the wealth of material on our websites that has been produced with our First Nations colleagues and partners, and reach out to any of the Hubs involved for more information about their specific research projects or programs.

Hub links:

CAUL Hub - <http://www.nespurban.edu.au/about/indigenous-engagement-program/>

ESCC Hub - <http://nesplimate.com.au/who-benefits-indigenous-communities/>

NAER Hub - <http://www.nespnorthern.edu.au/topics/indigenous-nrm/>

MB Hub - <https://www.nespmarine.edu.au/document/indigenous-engagement-and-participation-strategy>

TWQ hub - <http://nesptropical.edu.au/wp-content/uploads/2015/09/NESP-TWQ-Hub-Indigenous-Engagment-Strategy-FINAL-COMPLETE.pdf>

TSR Hub - <http://www.nespthreatenedspecies.edu.au/projects/collaborations-with-indigenous-people-in-threatened-species-research-and-management>

Responses to questions asked during the Indigenous Science Conversations in National Science Week (7/9/19, these will be updated as more responses are provided)

Question	Answers provided by Zena Cumpston, Indigenous Researcher and Knowledge Broker at the Clean Air and Urban Landscapes Hub.	Links
<p>Do you think Universities or schools have the structures that allow Indigenous students to access Indigenous knowledge holders to ground themselves in their identity or is this something that they should ensure for themselves – i.e. contact with their own community & elders.</p>	<p>From speaking to many fellow Indigenous peoples of all ages I believe the schools and universities do not provide enough education or access to Indigenous Australians perspectives, lived experience, and knowledge. I have recently been to many public forums here in Melbourne on this topic and in each session there have been multiple educators in the audience who have expressed their frustration at the lack of inclusion and meaningful content in their curriculums. Having structures which support and embed Indigenous knowledge in educational institutions helps not only Indigenous students but their non-Indigenous counterparts to move beyond the scant and inadequate narratives that serve to homogenise and deny the complexity and strengths of our culture, peoples and knowledges. As an Aboriginal woman who did not grow up on my own Country I did not have the resources I needed throughout any part of my education to strengthen my identity or properly comprehend the history of my people. I rarely saw myself in books or on the TV and I certainly didn't have the teachers or role models I needed to build my resilience as a young Aboriginal person. Everyone needs contact and learning from Elders and Community but our educational institutions do everyone a disservice if they aren't inviting First Nations people to come and share their stories and lived experience with both Indigenous and non-Indigenous students and their educators. It can be as simple as inviting people to come and talk (this should be paid unless they are a parent or carer who is willing to donate their time because of their relationship to the institution). Educators should also source Indigenous authors and content to sit alongside non-Indigenous narratives - there is so much available online or through NITV. It is often a case of taking the time to look, connect and commit 100% to inclusion. It is not acceptable to make this a personal undertaking. Everyone benefits from inclusion and exposure to Indigenous perspectives (Zena Cumpston).</p>	
<p>How can we better enable Indigenous kids to see themselves as future scientists, inventors or entrepreneurs? (amongst other things)</p>	<p>I often hear the term “if you can’t see it you can’t be it” when people are speaking of importance of role models for all young people. The links we have listed here are all sources which celebrate and showcase the brilliant work of multiple Indigenous role models here in Australia – check it out! (Zena Cumpston).</p>	<p>http://www.indigilab.com.au/ https://www.sbs.com.au/nitv/nitv-news/article/2018/08/16/aboriginal-astronomy-science-mapping-sky-and-seasons</p>

<p>Can you share some examples of Western science/academics giving equal standing to Indigenous knowledge + peers (eg equivalent to academic referees, peers, attribution)</p>	<p>This is a very interesting question and not one that is easy to answer. Unfortunately I have seen very few examples of this type of equal standing as Western Knowledge always seems to be fore-fronted and privileged even in collaborative processes. One example where Indigenous knowledge, practice and ways of knowing have been given equal standing is an excellent research paper about best practice in Indigenous research. This interim report is entitled 'Flipping the Table; towards and Indigenous-led urban research agenda'. This paper was authored by one Indigenous and one non-Indigenous researcher who worked together with First Nations community to ensure equal standing was achieved and Indigenous perspectives were not only explored but fore-fronted. This paper was produced by the Clean Air Urban Landscapes Hub and was authored by Lauren Arabena and Libby Porter. It is freely available on the CAUL Hub website under 'publications' and I've also put a link to it below for you;</p> <p>https://www.nespurban.edu.au/publications-resources/research-reports/Interim%20Report%20-%20Flipping%20the%20Table%20toward%20an%20Indigenous-led%20research%20agenda.pdf</p> <p>Too often it is only when First Nations researchers and academics themselves produce work that our perspectives are communicated as more than a contributing theme. The wonderful work of Uncle Bruce Pascoe is an excellent example of this portal into our way of seeing what is achieved when we produce our own works. The recent exhibition Blak Design Matters and design symposium 'Go Back to Where You Came From' by Indigenous architect Jefa Greenaway are both also excellent examples of Indigenous-led approaches where our perspectives, voices and knowledges are asserted and celebrated front-and-centre.</p> <p>As the research paper mentioned here proves, it is possible to have equal standing when true collaborations happen in respectful environments (Zena Cumpston).</p>	<p>http://www.indigilab.com.au/</p> <p>http://www.empresspublishing.com.au/the-people-of-budj-bim.html</p> <p>https://msd.unimelb.edu.au/indigenous-design-symposium</p> <p>http://korieheritagetrust.com.au/exhibitions/coming-soon-blak-design-matters/</p>
<p>Western Science and technology can do so much more to support and maintain ecological and cultural knowledge. Is the NESP focussed on this opportunity? For example Sustainable use of renewable resources, not just plants but also animals and bush tucker meats. Overseas experiences most important – First Nations people in Canada and South America?</p>	<p>I am sure that there are many partnerships and research projects in NESP that include an outcome to support and maintain cultural knowledge. At the CAUL Hub we are starting to think about how our research into Indigenous perspectives of biodiversity and ecology could provide assistance for First Nations businesses based around cultural knowledge and traditional yet lost agricultural practice (Cathy Oke).</p>	<p>See links in other Questions in this section, and above from all the NESP Hubs</p>

<p>How do we place Indigenous perspectives at the front of science – policy question design?</p>		<p>See links in other Questions in this section, and above from all the NESP Hubs</p>
<p>What skills do you use to be able to walk in both worlds? In our culture and white society</p>		<p>See links in other Questions in this section, and above from all the NESP Hubs</p>
<p>How do you share knowledge about Aboriginal science while still respecting cultural protocol and lore which sometimes means some knowledge cant be shared?</p>		<p>See links in other Questions in this section, and above from all the NESP Hubs</p>
<p>Science is shaped by the questions asked. The questions asked are shaped by culture and values. What are the successful mechanisms for embracing Indigenous culture and values - how do you define success in this context?</p>		<p>See links in other Questions in this section, and above from all the NESP Hubs</p>
<p>Thank you for the opportunity to hear you speak. I hope traditional science can be humble enough to accept the offer of 60,000? 80,000 years of knowledge that carried your people to a sustainable culture. How can I help? I spread the word and share any knowledge I have learnt from my Indigenous friends.</p>	<p>All Australians can help by being aware of the History of this country and actively seeking to right past wrongs by allowing First Nations peoples to have their voices heard. This means understanding whose country you live and work on and finding ways to include Indigenous perspectives. It is important to remember we are a very diverse peoples so no one group will have exactly the same history and culture as another group. I encourage my non-Indigenous friends and family members to seek Aboriginal and Torres Strait Islander authors, speakers and content for any topic they may be interested in. Many museums and galleries right across the country have wonderful exhibitions that celebrate our histories and highlight our diversity as well as our perspectives. It is particularly important to expose young non-Indigenous Australians to Aboriginal and Torres Strait Islander culture wherever possible. Being involved in Sorry Day, reading story books by First Nations authors, getting involved in the incredible range of activities held Nationwide for NAIDOC Week. NITV have a range of programs across many, many topics which are made by First Nations peoples which give voice to many perspectives. There are so many great books, many by First Nations authors that are so worth checking out. For example, for anyone living in Melbourne I put together a huge list of books and resources about the Traditional Owners of this area, this list can be found at the end of the piece</p>	<p>http://www.indigilab.com.au/</p> <p>https://www.nespurban.edu.au/urban-beat/urban-beat-07/</p> <p>http://www.sydneybarani.com.au/sites/aboriginal-people-and-place/</p> <p>https://www.noongarculture.org.au/</p> <p>https://www.cityofadelaide.com.au/your-community/culture-history/kaurna/</p> <p>https://www.adelaide.edu.au/kwp/</p>

	<p>'Looking-Past-Narrm' in the link I have included to the CAUL Hub NAIDOC Edition of Urban Beat. Being educated about our diversity as peoples is a great way to start to break down some barriers and actively seeking our stories told by us is a great way to silence misinformation and ignorant narratives (Zena Cumpston).</p>	<p>http://www.slq.qld.gov.au/resources/atsi/contemporary-stories</p>
<p>As a government officer working on threatened species that occur across large extents of Indigenous land over 100+clan groups – what would your advice be for me in ongoing with traditional owners for knowledge? In a significantly constrained fiscal environment (i.e. sitting @ a desk full time?)</p>		<p>See links in other Questions in this section, and above from all the NESP Hubs</p>
<p>How can the government better support Aboriginal and Torres Strait Islanders through the collection and use of Indigenous data?</p>	<p>As an Aboriginal researcher I speak from my lived experience in answering this question. To put it simply, I have been appalled at how many projects get funding to work within areas which almost entirely utilize, for example, Aboriginal content, histories and cultural items without any stipulation to include Aboriginal and Torres Strait Islander perspectives in any way. Many of these projects do not even have any funding provision or imperative to speak with or employ any First Nations people. This means projects are all about us, speak for us and at us and do not speak with us or seek our rich narratives in any meaningful way. This system is unacceptable and I believe any funding that occurs must include the insistence that First Nations peoples are not only given voice in the project, but this is done through meaningful conversations and collaborations which have been well thought out before monies are secured. Too often we are asked to rubber-stamp research that has no value to us or our communities after it has already been conducted completely without any input from individuals or community.</p> <p>If collaborations aren't happening and our perspectives are not respected and listened to in terms of forming the parameters of projects in a meaningful way then any data collected does not serve us or our aspirations. Further, when we don't include First Nations people in projects we fail in any role to capacity-build. True collaborations mean we are learning from each other and that the wealth of opportunity and privilege enjoyed by many academics is being used to build the skills of First-Nations researchers. When we collaborate as Indigenous and non-Indigenous researchers our Intellectual Property as First Nations people has much more chance of being kept within our ownership and control (Zena Cumpston).</p>	<p>See links in other Questions in this section, and above from all the NESP Hubs</p>

<p>I am a secondary school science teacher. It is a challenge to meaningfully incorporate Indigenous science into my everyday teaching and assisting my colleagues to do the same? Do you have any suggestions as to how best do this? I think our barriers are being afraid of being culturally insensitive.. I'm also involved with a project that Macmillan publishers are starting to produce resources for teachers</p>	<p>It would be wonderful if you could start by having conversations with First Australians about the science and technologies of their people. It is sometimes daunting to talk with people from a culture you are unfamiliar with but please keep in mind that the first step to including and understanding our perspectives is speaking with us. For so long educational structures have spoken about us not to us. Is there an Elder or other Indigenous person in your community that you can employ to come and speak and share their perspectives and culture? If you go onto the website of the Nation (s) who are the Traditional Owners of the Country you are teaching on there will often be information regarding how to make contact and engage.</p> <p>It is so easy for people to feel too uncomfortable to take steps to know Aboriginal people firsthand and it is this unwillingness to move past this discomfort which keeps us all apart and ignorant. We as the First Peoples of this Country are often so keen to share but aren't given the opportunity because it is deemed "too hard" or people are worried about saying the wrong thing. Any texts produced should include us – still today our voices are not included in publications about our history, culture and knowledges' and this should not be the case. Be brave, engage. Insist on the inclusion of our voices, knock and keep knocking with commitment until you find someone who has the time and inclination to share – don't put it in the "too hard" basket or give up. Once you make that connection everything you do on Country you live and work on will benefit and you'll have made an ongoing respectful relationship because you committed and you listened and you learned (Zena Cumpston).</p>	<p>http://www.indigilab.com.au/</p> <p>https://www.sbs.com.au/nitv/nitv-news/article/2018/08/16/aboriginal-astronomy-science-mapping-sky-and-seasons</p> <p>http://nespurban.edu.au/resources/Aboriginal_books_young_people.pdf</p> <p>https://www.narragunnawali.org.au/curriculum-resources</p>
<p>As a non Indigenous adult, is it possible to learn more about local cultures?</p>	<p>Of course! Many Traditional Owner groups have websites and much information readily available on the Internet as well as having books, exhibitions and cultural programs they collaborate with and run as part of their corporations/groups. There is so much information available, it is often just making a commitment to find out more for yourself. It is always best to find information that is authored by First Nations individuals and communities themselves – not others talking about or for us. For example, I went on a cultural tour on my own Country several years ago that was very upsetting. Non-Aboriginal guides were telling stories about my people that were not only highly insulting but completely incorrect with narratives which were archaic and even alluded to 'dying race' theories. I will never do a cultural tour again that is not run by an Aboriginal guide! I have been really impressed by the major museums and galleries around Australia which have been hosting incredible exhibitions, often made by Aboriginal curators, which do so much to educate and celebrate. One you may be able to check out is called 'For Country for Nation' which is an Australian War Memorial exhibition touring all around Australia which tells many brilliant and enlightening stories about Aboriginal and Torres Strait Islander people going to war and working in ancillary industries. You could also watch NITV which is a free-to-air channel that has so many shows featuring our stories and narratives made by us. Get involved in Sorry Day, NAIDOC Week and any events you see – they are always a great way to learn and contribute.</p>	<p>http://www.indigilab.com.au/</p> <p>https://www.dva.gov.au/about-dva/publications/vetaffairs/vol-34-no-2-winter-2018/country-nation-exhibition-road</p>

	<p>https://www.dva.gov.au/about-dva/publications/vetaffairs/vol-34-no-2-winter-2018/country-nation-exhibition-road (Zena Cumpston)</p>	
<p>How does a research project (or broader program) best make contact with all the right traditional owners (or find those that best represent the scientific interests of the country?)</p>	<p>An important aspect to keep in mind when wanting to make contact and have collaborative relationships with Traditional Owner groups is the fundamental aspect of reciprocity. Too often the area of what would make this project attractive and useful for the cultural group you are wanting to work with is ill-considered or not considered at all resulting in lack of interest and/or trust. Researchers still fail to consider aspects of reciprocity such as how can my work be informed by the aspirations of the Traditional Owner group from the inception of the project? From inception is important – many projects begin and play out without asking community what they are interested in and what adds value for them, instead people come to them at the end and want ‘a little sprinkling of Aboriginality on top’ as described by Yuin designer and author Linda Kennedy in her fantastic article Knowledge and Integrity which I have posted a link to. Ask yourself from inception how can our work capacity-build within the community? Can we teach people to collect the data themselves so this skill remains within their community? Can the group who contributes knowledge be a co-author on any written documents that eventuate? Some of these answers cannot come without speaking to community but it is important to understand they are questions which must be asked.</p> <p>It is great if your organisation has the capacity to have an Indigenous Advisory group set up to help with answering how to approach collaborations and many other aspects of Indigenous Engagement throughout your organisation. The CAUL Hub has an incredible Indigenous Advisory Group and you can see details about them on our website which I have also added a link to below.</p> <p>It is not possible to provide a blueprint for how to best approach this but starting with identifying the group or groups who can speak for the Country your project is on is important. Most Aboriginal and Torres Strait Islander groups have information about their organisation online and also information about the process to organise to meet. It is important once you have booked a meeting that you speak about your project from the perspective of your audience. Using technical terms like ‘end-user’ and lengthy explanations about academic aspirations is irrelevant and alienating. Explain your project in a way that is easily grasped by people who may or may not have background in this area or academia. Keep it relevant to the audience and outline the ideas you have about how this project can align with the aspirations of the community in for example, their caring for Country obligations, but make sure you leave room for them to tell you what they think could be of benefit for them and listen carefully. Any engagement with community should be seen and enacted as a process. It is not viable or valuable to have ‘consultation’. Instead it should be an ongoing process of collaboration which allows for true reciprocity and relationship building. If you build relationships with groups of people who know they can trust you from past experience this sometimes tricky ‘beginning the</p>	<p>https://www.nespurban.edu.au/urban-beat/urban-beat-04/#feature</p> <p>https://www.nespurban.edu.au/people/#iag</p> <p>https://aiatsis.gov.au/research/ethical-research/guidelines-ethical-research-australian-indigenous-studies</p>

	<p>process of collaboration' only has to be undertaken once. Establishing healthy relationships means all the work you undertake on Country will be all the richer, not just because it adds value in terms of incorporating and honoring rich Indigenous perspectives, knowledges and values but because it directly benefits the people you are collaborating with and their aspirations for their community.</p> <p>It is also useful to look at and understand the AIATSIS Guidelines for Ethical Research which I have also posted a link to (Zena Cumpston).</p>	
<p>How can we incorporate Indigenous science with western science projects – what are appropriate areas to focus?</p>		<p>See links in other Questions in this section, and above from all the NESP Hubs https://www.sbs.com.au/nitv/nitv-news/article/2018/08/16/aboriginal-astronomy-science-mapping-sky-and-seasons</p>
<p>Thank you for the inclusive discussion today! Is there a consistent approach to cultural / cool burnings across different landscapes of Australia? Or different mobs do differently? Should government engage Indigenous groups when doing hazard reduction burns to improve conservation outcomes?</p>	<p>The short answer to your final question is yes, Indigenous perspectives are important if not crucial to understanding conservation outcomes from hazard reduction burns. However a more specific response would need to be sought from / informed by the Traditional Custodians of the places you work (Cathy Oke).</p>	<p>See links above to NESP Hubs above.</p>
<p>Have Indigenous people seen changes in the seasons, temperature, rainfall etc.. indicative of climate change? Many native species have declined since European settlement. Does this make it harder for Indigenous people to read the landscape? Eg how a species behaves might predict some weather event?</p>		<p>See links to other Questions in this section, and above from all the NESP Hubs</p>

<p>What are the opportunities for Indigenous input and perspectives to be considered in the work of the newly established Australian Space Agency, and space exploration specifically?</p>		<p>https://www.sbs.com.au/nitv/nitv-news/article/2018/08/16/aboriginal-astronomy-science-mapping-sky-and-seasons</p>
<p>With the other science teachers, I would like resources and links to Aboriginal knowledge that overlaps with Sustainability Curriculum</p>		<p>http://www.indigilab.com.au/ https://www.sbs.com.au/nitv/nitv-news/article/2018/08/16/aboriginal-astronomy-science-mapping-sky-and-seasons</p> <p>See links to other Questions in this section, and above from all the NESP Hubs</p>
<p>Thank you all for your time and sharing your knowledge tonight, I work in the Science Policy team at the Department of Industry, Innovation and Science. Some of our work is in the STEM Engagement space and we would like to increase participation of Indigenous students in our programs. Do you have any recommendations for channels / avenues for us to advertise and disseminate information about our grant programs? For example we have a program to support students to attend STEM related events in Australia and overseas. I would appreciate your advice. Thanks you very much.</p>		<p>http://www.indigilab.com.au/ https://www.sbs.com.au/nitv/nitv-news/article/2018/08/16/aboriginal-astronomy-science-mapping-sky-and-seasons</p>
<p>What can we learn from you around incentivising science as a</p>		<p>See links to other Questions in this section, and above from all the NESP Hubs</p>

<p>collaborative and communal approach? Moving away from “the great man” model of singular view to get greater diversity I research?</p>		
<p>How can we create pathways for students through school and university to encourage kids to study environmental science and become Scientist?</p>		<p>http://www.indigilab.com.au/</p>
<p>What are the implications or concerns raised of intellectual property in relation to Traditional knowledge and what are some of the ways people can share their Traditional Knowledge while still protecting it? I am starting research in natural areas and would like to engage the Traditional Owners to ask for their permission and input. What’s the best way if I don’t yet have contacts?</p>	<p>The question I answered previously (How does a research project (or broader program) best make contact with all the right traditional owners (or find those that best represent the scientific interests of the country?)) should give you much relevant information in relation to your question. I would also add that co-authoring papers is very important for protecting Indigenous Knowledge. Co-authoring is much better than just acknowledging as it is a way to properly embed ownership and give equal value to Indigenous perspectives and knowledges. I would also highly recommend looking at the huge body of writings by Terri Janke. She asserts in all her work the importance of cultural and intellectual property rights as a fundamental step for reconciliation and I cannot recommend her writing highly enough for anyone engaging in a collaborative process with any community (Zena Cumpston).</p>	