Government tools for nature-related sensitive location assessments transcript

June 11, 2026, 1:00AM

1h 4m 7s

Daniel SHEEDY 0:04

Good morning and welcome for those who have joined in on time and early. We'll just wait a few moments, and we'll get the webinar started shortly.

While we wait, I'll give you a weather check here in Canberra. It's been quite a mild morning, a bit of cloud around, it's clearing out now, sun's coming up. It's going to be a lovely winter's day.

We'll just wait a few more moments for people to join.

We might kick off now. So, thank you for joining today's webinar: Government tools for nature-related sensitive location assessments. And this is part of Nature Positive Matters Capability Building series. I'll be hosting today. My name's Dan Sheedy, for those who don't know me, one of the directors in the Nature, Finance and Markets Policy Branch at the Department of Climate Change, Energy, the Environment and Water.

Before we begin, I'd like to acknowledge the Ngunnawal people as the Traditional Custodians of the land on which I'm joining you from today, as well as acknowledging the Traditional Custodians of Country throughout Australia. I recognise the enduring connection to lands, waters and skies and pay my respects to Elders past and present and extend that respect to all First Nations people joining us today.

I'll get a few housekeeping notes out of the way before we begin. This is a one hour webinar. I understand we're backing up close to lunch, so we appreciate your hunger pains during it. It's being recorded and will be made available soon on the Nature Positive Matters website. You'll find that recording under the Events section. at naturepositivematters.org.au. You'll also find our webinar from late last year about

building a business case for nature, which you might be interested in. The slide presentations from today's webinar will be shared with the recording, so you don't need to take furious notes if you don't want to. Microphones, cameras, reactions, and the chat function have all been disabled. If you have a question, please submit it in the Q&A function. Please do not raise your hand. If you raise your hand, you're just going to get a sore arm. Thank you to those who submitted questions during registration. I just had a note from the team that 160 people registered for the webinar today, so that's a great result. Following today's 3 presentations, we will address those questions along with any others submitted via Q&A during the webinar. We welcome your insights and encourage you to participate in the survey that you can access via the QR code which is on your screen now.

I'll just walk through a bit of context for today's webinar. It's for those working in the private sector, specifically in businesses that are interested in how their operations depend on and impact nature. It is intended to raise awareness of Australian government managed online spatial data tools that can be used to support baseline sensitive location assessments.

Sensitive locations are areas where business operations may intersect with protected species, ecosystems, or water systems.

The data tools we're highlighting today are used by many different sectors and I'm sure there are people joining us today on the webinar from Government, from the NGO sector, other sectors who use these tools in many and varied ways. Today we're focusing on how the tools can support users in the private sector.

Increasingly, businesses are becoming more aware on how they depend on nature, from natural resources to ecosystem services. Investors, regulators and stakeholders are also increasingly demanding greater transparency on how organisations depend on and impact the environments where they operate.

The Taskforce on Nature-related Financial Disclosures, or TNFD, a lot of you will be familiar with, has defined sensitive locations as areas important for biodiversity or areas with high or declining ecosystem integrity.

They are also areas with high water risk and important to ecosystem service provision, such as areas providing food and water supplies or areas that are culturally important.

Identifying sensitive locations is critical because environmental risks are often geographically dependent and operating near these areas can elevate both operational and reputational risks.

Government data tools that provide free access to integrated geospatial, environmental and operational data enable organisations to pinpoint these sensitive areas, assess exposure and prioritise mitigation strategies, forming a robust foundation for credible and decision-useful disclosures.

Now, with the context done, I'd like to introduce the agencies and tools we've got for you today. So today we're fortunate to have representatives from three government agencies. Environment Information Australia, or EIA, works to improve environment information, data and reporting.

EIA works with experts and partners across Australia, including government, industry, researchers and First Nations people. EIA aims to improve the way environment data is collected, shared and used. The government uses this data tool to underpin policy and programs, for example, the Nature Repair Market requires project proponents to use the Protected Matters Search Tool, PMST, which we'll have a look at later, to check if protected matters exist in or around their project areas.

The Bureau of Meteorology, or the BOM, in addition to providing most Australians with their daily weather information, also provides broader weather and climate knowledge and advice through specialised forecasts and observations. The Bureau has a strong national presence and secure, reliable and trusted systems.

The Australian Climate Service, or ACS, was established to provide improved data intelligence and expert advice on climate risks and impacts to support and inform decision making. ACS aims to transform Australia's capability to better understand climate and weather event related risks within Australia now and into the future.

These agencies each have data tools that provide useful information for identifying TNFD sensitive locations. These tools are also user-friendly with interactive spatial mapping and are frequently updated.

While these tools were not originally created with the specific intention to identify sensitive locations, they do provide a starting point for baseline guidance and assessments.

Now on to our lovely presenters. Our presenters today are Cassie Malley, Assistant Director, Geospatial Analyst from EIA, presenting EIA's Protected Matters Search Tool, which I mentioned earlier, or PMST, and Environment Information Viewer. Liz Johnston, Director, Major Programs, Water and Agriculture at the BOM will present on the Bureau's Australian Water Outlook and Water Storage Information Dashboard. And Tanya Schneider, General Manager, ACS, will present on ACS's Data Explorer and Data Catalogue.

After today's presentations, we'll come together for some Q&A. So, let's get started. First today, we'll have Cassie presenting EIA's PMST and Environment Information Viewer. Welcome, Cassie.

Cassandra MALLEY 7:52
Thanks very much, Dan, for the introduction. So, just before I jump into my presentation, I'd first like to acknowledge the Traditional Owners of Country throughout Australia, in particular where I'm presenting from today, which is the Turrbal and Jagera people, and recognise their continuing connection to land, waters and culture. I'd also like to pay my respects to their Elders past and present.

So, just a little bit more on EIA. So, one of the ways EIA improves environmental data and how it's collected, shared and used is by developing datasets and tools to support a whole range of different questions. You can find out more about EIA on our webpage and also discover these tools and data through our Environment Information Australia Portal, so this is where you can find links to our data catalogue and the tools I'll be taking you through.

We also have a Geospatial catalogue where you can explore, visualise, and download

the department's authoritative Geospatial data sets, including all of the ones in our 2 tools.

So, before I get into the demo of both of them, I will take you through a bit of an introduction of them, starting with our Environment Information Viewer. So, EIV is a national to regional scale interactive browser-based map viewer that enables you to see where environmental assets, such as our protected areas, are located in relation to various geographic features to help inform high-level investigations.

So, it'll enable you to identify areas of environmental significance and understand where activities may overlap with sensitive values, supporting informed decision making for planning, investing and project development. It also provides

Daniel SHEEDY 9:33
Cassie, I just got to get you to share your slides. Sorry, they're not showing up.

CM

Cassandra MALLEY 9:37
Oh, that's strange. I am sharing them.

Daniel SHEEDY 9:39
You could toggle them on. That's okay. Maybe do the stop start again, the reset.

CM

Cassandra MALLEY 9:43
Ahh. Classic IT.

Daniel SHEEDY 9:48
Sorry to interrupt you.

CM

Cassandra MALLEY 9:49
That's OK. It's not very useful if no one can see anything. It doesn't seem to be letting me stop sharing. It just says there's an issue. It still says I'm trying to share even though I'm not trying to share. Maybe move on to the next presentation and you can come back to me if you want to while I try and resolve the sharing issue because it's stuck on my side.

Daniel SHEEDY 10:29
Okay. We might go to Liz, if that's okay, Liz, if you're ready to go. Liz, to share us the Bureau of Meteorology's Australia's Water Outlook and Water Storage Information Dashboard.

Elizabeth Johnston 10:49
Hi, Daniel, and hi everyone. Just checking everyone is able to see my screen.

Daniel SHEEDY 11:03
We can see your presentation now. Thank you.

Elizabeth Johnston 11:06
Thank you so much. So, thanks for the opportunity to present today and I would also like to acknowledge the Traditional Owners of the land which we're each respectively dialling in from today. I'm on Wurundjeri Woi Wurrung Country today here in Naarm in Melbourne and I pay my respects to their Elders past and present.

I just want to give a little bit of context before I get started as well to cover off on the 2 tools that I'll talk to today, which is the Australian Water Outlook and the Water Information Dashboard.

So, I guess primarily today, inherently, given that we'll be talking to water products, we will really kind of draw your attention to those sensitive locations relating primarily to water stressed or hydrologically important areas. So, scarce or over-allocated water systems through these 2 tools. I may also cover off some insights as well related to potentially some of the environmentally sensitive aspects as well.

So, why is the Bureau involved in this space? As well as having water and climate capabilities and data management capabilities, we've also got legislative obligations under the Water Act, which came into effect on the 3rd of March 2007 under the *Commonwealth Water Act 2008*, sorry, under the *Commonwealth Water Act 2007* that gives the Bureau specific water information powers and obligations in addition to its weather and climate functions under the Meteorological Act. And these statutory functions relate to issuing national water information standards, collecting and

publishing water information, conducting regular national water resource assessments, providing regular water availability forecasts, which starts to get us closer to where the Australian Water Outlook heads, and advising of matters relating to water information and enhancing our understanding of Australia's water resources. If you do want to find out more about the Bureau's responsibilities, you can have a look at the *Water Act 2007* under Part 7 Water Information and under recent reforms in the water legislation space, the Bureau has additional responsibilities under Part 7A relating to water market information. So, that largely gives us the kind of key premise for delivering and developing these tools and continuing to maintain these.

So, under those responsibilities, the Australian Water Outlook tool is operated by the Bureau of Meteorology, and it provides interactive data forecast and future projections to help users understand water availability and change over time. I note that under the nature related sensitive locations assessments, it has been indicated that there is potential for businesses to use this tool to look for information related to precipitation, soil moisture, evapotranspiration that could be considered part of a sensitive location analysis. So, I will go through the tool in a minute in relation to give some insight into how you might be able to support that.

The Water Information Dashboard is the other tool I will cover off on, again operated by the Bureau of Meteorology. The Dashboard provides an interactive visual summary of Australia's water resource status. So, again, you can look, and I'll take you through the tool in a moment, but you can have a look at current water storages, both at a range of scales nationally through to state-based and individual storage locations. So, you'll be able to look at those storage volumes, but there's also an item as well where you can go in and have a look at more information and allocation being traded in Australia.

I guess that's the initial introduction to these two tools and now I'll take you under the hood to the extent that I can. And I guess probably what I do want to flag is that this tool in the Australian Water Outlook does capture quite a bit of input to be able to deliver what is presented on the Australian Water Outlook Dashboard. So, it presents historical daily gridded outputs of precipitation, soil moisture, runoff and deep drainage back from 1911 until yesterday under historical tab. And then you can

move to the 3-month forecast tab, which provides seasonal forecast for one to 3 months with monthly outputs available for roots, soil and soil moisture, evapotranspiration and runoff. That future forecast, that 3-month forecast is updated monthly. We then have projections through to the end of the century, again, looking at that data, but looking a bit further into the future.

So, in terms of this diagram, it really does help to kind of show all of those inputs that give you what's presented on the tool itself. And a lot of that can be some cutting-edge climate and downscaling techniques that are simulated in near real time to present what you see on the tool.

So, this is it, the landing page to some degree. So again, you can see there are some of the parameters that is covered in the tool. So, you can select river, region, your particular river basin, state location, or national. So, you select a point. You can also provide, if you do have a really specific location, you can also select point. But when you do select point, just be aware that you do need to give some exact coordinates that are latitude, longitude style coordinates into that box. So again, presents data both in absolute, so you can see percentage soil moisture, so it starts to give you an indication of percentage in comparison to historical, as you can see. In this map.

Again, under the historical tab, this one shows again the percentage of soil moisture but in absolute in this instance. This example actually takes you to the centre soil moisture. And just to give you a bit of a look and feel, as you toggle across those 3 tabs at the top, so we're now into the forecast, which is the forecast for 3 months ahead in absolute. And you can start to see we're now transitioning from I guess, where we've been and starting to look at what we should be thinking about for the next one to 3 months.

And again, this is shown in terms of forecast for soil moisture in terms of relative. I will also flag that there are other ways. So, we are displaying quite a bit of data in the Australian Water Outlook. You may actually choose to access the data itself rather than the visual representation. So, there are sort of a few ways where you can actually get into the data a bit more and access that information that's displayed in the Australian Water Outlook. So that's both through the website, which there is a

link to there. So, that's the online visualisation tool. And then you can actually also look at Australian Water Data Service, which presents similar information.
It includes the key outputs that are inputs into the Australian Water Outlook as well, if that's something that might be helpful for you in terms of mapping or understanding a little bit more about some of the sensitivities.

And again, the NCI gives an opportunity to capture the specific data. So, we use NCI to host the Australian Water Outlook data on the National Scientific Data Repository. So, there is a link there to, and some support for how you might be able to access NCI, but really that's where a lot of our sort of mature users go potentially to access that data.

I'll move on now to the Bureau of Meteorology's Water Information Dashboard. So, this dashboard, again, this is the landing page. Some of those tabs at the top may have looked familiar for those of you that were based in Melbourne during the millennium drought. We used to have a little Melbourne box that would give us the regular storage volumes during that period. But I guess you go to this landing page, it gives you the sort of national picture, and you can drill down to be able to compare water levels and volumes for about 300 publicly owned lakes, reservoirs and we weirs across different states and territories, so it gives you a national picture. And again, you can drill down to find out as much as you want. This image on the landing page gives you the Australian context, may not be that helpful. So, you can drill down into the next level of detail, which is state, capital city, and you can look by drainage division or major water supply systems and individual storages. You can also compare how storage volume has changed over time. So, you compare it to the previous year, month, week and day, and often the comparison in terms of the position that we're in currently and in the previous year, gives a little bit of an insight as to where you might be positioned relative to previous years.

So, the Bureau does convert this data that it receives from each state and territory. They send us their water storage information to the Bureau under the Water Act, which I mentioned previously, and we translate that in and process and publish that information so that it is accessible, in a format for comparison across those different regions, which is what the dashboard supports.

We also provide regular updated and accessible information relating to water markets information too. So, if you toggle down to that next tab, it gives you a little bit of insight around water markets as well, which I'll just show in a moment.

So, often of interest is where we might be at within the Murray-Darling Basin. So, you can see variation and declining trends in water storage. And again, you can use that as a bit of an insight into where we might be positioned relative to previous periods, but also can start to think about how that might compare to other information that may be useful to understand a little bit more about where the risk sits.

Again, you can look at storage volumes themselves. So, if you drill into a little bit more detail within the Murray-Darling Basin, you can actually get a list of storages. And again, look at that comparative data relative to previous periods in time.
And the representation is good in terms of comparison to be able to look at this over time. And this is just a screenshot from the Water Information Dashboard relating to water markets. So you can see there it overlays trade in both groundwater and surface water with pricing in water markets. I mean of note I guess in that 2019 to 2020 period where there was less trade than perhaps in other years surrounding, water market price was relatively high.

So, how can you use this information? Well, I guess in your nature related sensitive location assessments, what might be helpful to note, I guess, is really how the Bureau uses this information. So, we draw on this information to present our outlook, so on the Bureau's webpage and we also have a YouTube channel. The Bureau's On Range Forecast draws heavily on, in particular, the information presented on the Australian Water Outlook, where you can see where we're kind of at in terms of soil moisture and what that might look like in the forecast for the months ahead. We also use it in terms of presenting a weekly report, so it gives us some insights and intel, but we also by subscription share that. So it brings together the water storage information alongside where we might be placed in terms of soil moisture and provide some commentary and narrative around what's at note in terms of the water and climate for the week ahead.

Usage in public academia, our consultants use it, irrigation industry and government departments do also regularly reach out to us to access the information that's

available through both of these tools.

It's also worthwhile noting that we do have under our water information responsibilities a range of other tools. So, for example, the Murray-Darling Basin Water Information Portal, which there is an image of on the right-hand side there. That's just a, I guess, similar tool, it's very focused of course to the Murray-Darling Basin, but it does allow you to see information presented perhaps slightly differently. So, it's got schematics of river systems and you can drill down into some of those specific basins and specific storages again within the Murray-Darling Basin.

Other tools, we've got a wide range of tools, so GDE Atlas in terms of thinking about environmentally significant sensitive locations is another sort of static tool that is used and is required to be used under the EPBC Act for consideration by proponents.

As I mentioned, we've also got some new responsibilities coming to the Bureau related to water market reforms. So, we'll be able to access water markets data and decisions that are much, that are transparent, that will come into effect imminently.

And I think from our perspective, I'll leave it there, but happy to take questions at the end. Thanks.

Daniel SHEEDY 27:34

Thanks so much, Liz, and thanks for stepping in. Out of order. Water is one of the issues that comes up quite a lot when we're engaging with Australian businesses and corporates about their climate and nature transition. So, it's great that you've taken us for a tour under the hood of those tools. If you've got any questions for the BoM or Liz, please put them in the Q&A function now. I encourage you to do that.
And I think we're going to attempt to go back to Cassie at EIA for her presentation. Thank you.

CM

Cassandra MALLEY 28:01

Yeah, thanks. All right, we'll give this a take two and hopefully it works this time. Is everyone able to see the screen this time? Yeah, fantastic. I got a thumbs up. So just hopefully everyone remembers my beginning spiel, but I'll jump straight into the tools. So, back to Environment Information Viewer, so quickly, it's a national to

regional scale interactive browser-based map viewer that enables you to see where different environmental assets, such as protected areas are located in relation to various geographic features to help inform more high-level investigations.

So, what you can do in this tool is identify areas of environmental significance and understand where activities may overlap with sensitive areas. This supports information for decision-making, planning, investing, and project development.
It also provides spatial insights that can help you screen for potential nature-related risk dependencies and opportunities, as well as understand the environmental context of your business footprint. So, you can search for and select environmental data layers, add your own data, and generate maps. It is important to note that this tool does mainly focus on the terrestrial environment.

So, hopefully everyone can still see my screen, but we'll move on to PMST. So PMST is a local scale web-based platform that enables you to check whether your footprint area or the areas nearby contain protected matters under the EPBC Act.
So, the information from PMST helps you identify whether protected matters are likely to be present, understand potential impact pathways, and assess whether a referral for proposed actions or impact avoidance measures might be required. So, you can use PMST to define your area of interest, explore protected matters in the area, print maps, and generate a report to support your disclosure.

So, I'll just jump out of the PowerPoint, fingers crossed this all works well, and hopefully everyone will now see the Environment Information Viewer tool. So, if you jump straight into the interface, on the left sidebar, there's a series of buttons. This will be the main function of the tool as well as the legend in the bottom right and a ‘Support’ tab in the top right.

So, what might be of interest to you to do is to add your footprint, so I've already preloaded, but this is where you can add your own data or you could even draw it on the map. And this will appear then in your layers tab. So, I'll just zoom into the location that I've chosen. So, this is just a random location for the purpose of this presentation. One of the things I might be interested in is part of that ecologically sensitive locations are protected areas. So, I might want to look at what protected areas are nearby my footprint area. And so I've turned on our National Reserve

System and marine parks as well as the Ramsar Wetlands data set.

Just a note about this tool, you can see that I have these 2 layers selected, but if you don't have the group layer and see these all different groups of data sets, it won't be visible on your map.

Now, you can see that there's quite a number of different protected areas around. And if you want to know what they actually are, one, you could open the legend to differentiate the different types. But you could also click on the map, and it'll produce a little pop-up for you. So, this pop-up will give you its name, some of the additional information, and also link you to other pages on this feature.

It also might have multiple features in the same site. So, if you hit the next button, it'll also tell you that it's not just the Ramsar Wetland, it's also a terrestrial protected area. You then might be also interested in, say, looking at the habitat condition of your site. So, in this case, and it's important to note that this habitat condition layer is referring to a pre-1750 baseline. So, it's looking at the vegetation that was there pre-1750 against what's there now. So, you can see that we are in a modified environment. But there is quite a strong mix of habitat condition from the dark green, which means intact, to the dark purple, which means removed.

You also might be interested in expanding your footprint. And so, I've used the draw tool in order to say this is a property that might be available for purchase, and I want to understand how it might change my risk profile or my impacts to nature if I decided to go ahead and expand my footprint.

So, what you might be interested in is looking at biodiversity values, so areas that have high biodiversity importance. This biodiversity values layer was developed to support the achieving 30 by 30 target, where we are looking at trying to protect 30% of Australia's landmass by 2030 but it covers things like species diversity, threatened species, endemic species connectivity and conditions. So, quite a good mix of information. So, you can see that this proposed site sits between that 70 to 79 and 80 to 89 percent. So, we're in that top 30 percent of biodiversity values. So, this will influence your interactions with nature and what you might, whether you want to consider expanding to this site.

You also might be interested in, say, if we go back to the Protected Areas, just having a map of this image. So, you can do that through our print tool. So if you just pop in the title and hit print, and there are a few other features you can do, you'll get a map that includes that title, the legend for any of the data layers you have turned on, and a scale bar.

There's also a swipe tool that I won't take you through today, but this will show you, this will allow you to compare different data sets or different sites.

So, jumping into the Protected Matter Search Tool, it again has a series of the functions on the left, but there's also a number of buttons on the right, including things like our base maps or sharing and measuring.

But in here, what you can do is upload or draw your boundary. And again, I've already pre-done that. So, when you zoom into your site, you can now see I have my current footprint and my potential expansion area. And what you might be interested in doing is generating a report to specifically identify the matters in that footprint.

But you might also be interested in not just looking at the direct footprint, but the area around it. So, you can buffer it for up to 50 kilometres but I'm just doing it by 2. So when you hit explore, it will generate this pop up and this will take you through all the different matters in your site. So, if we go to the threatened species, you can see it expands to a broader list and will tell you all the different species, what type of class they are, their status, that can be found in that footprint area and that two-kilometre buffer.

You can also view those distributions on a map, so that gives you a bit of a better frame of how dispersed is a species and how much of that species area is in your footprint. You can also click on it and it'll have some more information, including linking you to the species profile and threats database. This will have information about what threatens this species, what actions could help recover this species, and other information on its EPBC Act status.

If I just go back, it will also show you some information about that downstream and upstream impacts. So, in this case, our site is about 10 to 20 kilometres away from a

Ramsar site. And so, we will really need to consider the downstream impacts that my business activities would have on that Ramsar site.

You can also export this as an Excel report or as a PDF. So, the Excel would look like this and have all the tabs along the bottom. And this will allow you to filter and sort this information quite easily. Or you can export it as a PDF with the same information.

Lastly, if you are interested in, say, we, you can compare it to obviously what then occurs in this area. So again, if we explore this one, it might show you other features that aren't currently in your footprint. So, in this case, there are some threatened ecological communities that you will need to consider as part of your disclosure and how it may influence your business's interface with nature if you were to expand to this site.

You can also, if you say, wanted to get a whole picture of your entire business's footprint and its potential protected matters that exist in your footprint, can also select the multi-select tool and then click on all of your footprint areas. This can be anywhere across Australia and hit explore and that will generate a report for everything that occurs in both of my sites or any of your footprint areas.

So those are the key features I wanted to take you through about these two tools. If you do also need support in the PMST, there is a help guide as well as an about tab where you can find some more information on it.

So, I will leave it there. And hope that helps you better understand how you can use this information for your disclosures.

Daniel SHEEDY 37:57

Thanks so much, Cassie, and thanks for your ability to pivot there and be flexible.

CM **Cassandra MALLEY** 38:02

That's OK.

Daniel SHEEDY 38:21

Again, if you've got any questions for Cassie or EIA, please put them in the Q&A function. We are aware some people have some technical issues seeing Cassie's slides, so just to give you assurance that we are recording this webinar and those slides will be available afterwards. That can be remedied sometimes by just leaving the webinar and coming back in. I think there's been some advice given to people in the Q&A and the chat.

Thanks again, Cassie. Yeah, PMST is becoming such an important, integral tool, not just for the EPBC side of things, but also the emerging Nature Repair Market as well, as I mentioned in the context setting. Without further ado, I'll hand over to Tanya now from Australian Climate Service. Thanks.

Tanya Schneider 38:46

Thanks, Dan. Good morning, everybody. Tanya Schneider from the Australian Climate Service. I'm a General Manager of Delivery with the ACS and excited to be with you today and to demonstrate the tools and capability that we have that can support your TNFD reporting.

I'll also pay my respects on joining from Turrbal and Jagera lands and pay my respects to the lands on which you're all joining today's session from and the Traditional Owners, past, present and emerging leaders.

A little bit about the Australian Climate Service. So, we've been tasked with providing or with improving information, data, intelligence and expert advice on climate risk in order to improve decision making for the country. Today we're going to talk about, I guess when we talk about climate risk, we mean the hazard, the vulnerability, exposure and response and these 4 components come together to inform climate risk. We've actually adopted the IPCC definition of climate risk. That's an international standard. In terms of our agency, we're a partnership made up of world-leading science and expertise from across the Bureau of Meteorology, CSIRO, the Australian Bureau of Statistics and Geo Science Australia.

The ACS provides a central source of climate hazard exposure, vulnerability and risk data, and all of these things can be used to directly support the nature-related

financial disclosures. We offer spatial national data sets on climate hazards. This includes things such as flood, heat, fire, drought. We look at what's exposed. So, what are the assets that exist within particular areas and also how is land used and also vulnerability. And these all get combined and integrated in order to look at the risk assessment for natural systems and also ecosystems.

We start at the national scale and are able to drill into more localised levels, and you'll see this in the demonstration. That national level can be used to inform initial prioritisation and really identify where the country is most at risk or has the greatest level of hazard, for example. And this is really complementary to state and local level data, which is generally more granular and more specific, and then best suited to in-location decision making.

ACS is a strong foundation for that location-based risk assessment and scenario analysis. Our data and information can be viewed under different climate scenarios and used to identify potential ecosystem stresses, also to consider the climate risk for sensitive locations and for the full TNFD reporting, it's really intended to be complementary to the more detailed biodiversity or asset level data.

In terms of the benefits, the ACS data and information that's provided through our website is really intended to give a central point of access to authoritative national data sets that are relevant for climate risk. And you'll find that this is in consistent and standardised geospatial formats. And you can also download the data sets for your own use of analysis and assessment.

The Data Explorer will be part of the demonstration, but just to give you a little bit of background on the tool itself. So in working with stakeholders and also the inquiries that we get through the website, it was really clear that stakeholders are interested not only in the insights and reports that we can provide, such as the National Climate Risk Assessment suite of reports but also in the underlying data. The Data Explorer addresses this need in part by providing an interactive map that, sorry, an interactive map that visualises a broad range of climate risk related data sets. The Data Explorer is structured into 5 modules that you can see here. So, there's the climate component, there's the hazard exposure, vulnerability and risk, and then there's also an LGA insights part of the tool. The Data Explorer was first released in September

last year, and over time, we will continue to enhance and add in functionality and also other data sets into the Data Explorer.

Early this year, we also refreshed some of the components. So, the climate and hazard modules were refreshed within the Data Explorer. And we also added data into our Data Catalogue, which I'll come on to next.

In terms of what's in the Data Catalogue, most of the data that's visualised within the Data Explorer are available in the Catalogue and that's for users to download and reuse. In terms of what's in the Catalogue, we currently have 48 datasets and that comprises 16 climate and hazard scientific datasets with across with more than 50 indices available for those climate and hazard specific or scientific datasets. And we've also got exposure and vulnerability layers as well as some of our newly created climate risk indicators such as the Australian Climate Social Vulnerability Index that I'll talk to you later. In terms of the data formats, we provide that through a web service, image services, and also raw downloadable data. And the intention for the ACS is to provide a federated data model. And so we'll have some of the data sets are directly accessible, directly held by the ACS, and others are providing an entry point to datasets that are held on Geoscience Australia's Data Atlas, for example, or also CSIRO's Data Access Portal.

So, the intention of the Data Catalogue and the Explorer is to be that single entry point and access for all climate risk related information. I'll just touch on the National Climate Risk Assessment. For those not familiar, we'll give a bit of a sense of the reports that are available and specifically as they relate to the natural system.
So we have the overview, which is a synthesised, sort of easily consumable view of the National Assessment. Then we also have the main report, which provides in full, it's sort of 280 odd pages worth of detail. The methodology that we used for the National Assessment identified 8 key systems that support Australian society and are at risk from climate change. And one of those systems, one of the 8 systems, is the natural environment. And both of those reports that I just mentioned explore the impacts of climate change across the natural system, as well as the other seven systems. This is supported by the Future Climate and Hazards Report, which is a national view of Australia's climate and priority hazards and how these are likely to change over the rest of the century under different global warming scenarios.

What I've got here is an example of the system level dashboard that's available within our website. And this is specifically the natural environment system and so could help you with your TNFD reporting and considering, I guess, the broader impacts and what things might be influencing the risk into those sensitive locations.

Climate risks are determined by the interaction of risk elements, including the hazard exposure and vulnerabilities, as I've mentioned. This summary is, I guess, a view of the natural environment system, and it's considering risk in this way that provides information or insights intended to inform adaptation decisions, but also mitigation actions.

Moving on, there are additional reports that are specific to the natural environment available as part of the suite of National Climate Risk Assessment reports. So, there's a natural ecosystem report for freshwater, marine and also terrestrial. And that's sort of synthesised into a single technical report that brings together the insights from those 3 detailed reports.

I have also got on the screen there the Aboriginal and Torres Strait Islander People System report. They are obviously immensely impacted by the changing climate and in particular changes to the natural environment and therefore it was included as one of the 8 systems in the risk assessment methodology. All of these reports are available through the acs.gov.au website.

Now let's jump into the tools themselves and we'll start off with the Data Explorer. So, what I've got here is our sort of homepage and from the top right there you can navigate really easily into the Data Explorer.

The Data Explorer visualises climate risk related data sets through an interactive map. And as I mentioned, it's broken into 5 different modules. The other components there, there's also a link to the data catalogue where you can download the data, and there's also a link, I guess a tile, that takes you into information about the data sources that you see within the Data Explorer.

Going in, we'll start with the climate viewer. And so, within the climate viewer, you're able to see down on the left-hand side, the different climate variables and the layers

are the different indices in relation to the selected climate variable. So, what you can see here is for temperature. And as you can see, there's the map of Australia and you can easily zoom in into the location that's of specific relevance to your analysis. You can flick through the different climate variables. So, as you can see on the left, we've got the temperature, the participation, precipitation, etc. And as you can see, as the variable changes, so do those indices and the layers that are provided. This is just flicking into the ocean temperature and then lastly into the sea level rise.

If you would like information on the variables themselves, then there's that button towards the bottom left, and that gives you a description of the variables, what observations we used to create them, and there's also information on how do you find and use other prediction data, and also importantly, the limitations of the datasets and how they should be used.

Moving into explaining, I guess, just that layer part or the indices themselves, you can navigate across the different indices within each of the climate variables. And if you're looking for further information on the climate variable itself, then you can select that information button. And that takes you into the climate variable specific information. As you can see here that we've looked at temperature.

You might have noticed in the bottom left there, we've got the global warming levels, and they can be accessed for each of the climate variables. And just to explain the global warming levels that have been used within our analysis, so to assess changes in climate, the national assessment provided for views of the 3 different global warming scenarios. There was 1.5 degrees, 2 degrees and 3 degrees. The climate projections for Australia were based on global warming levels and they described the range of weather changes that Australia may experience. under these scenarios. These scenarios have been used as they're most likely to be reached by the mid-term 2050 and the long-term 2090 time horizons according to the latest international climate science. We've used the time horizons, which is centred on a 20-year date range, to capture the natural climate variability.

So, going back into the Data Explorer, you can select the global warming level that you would like to use. And there's also an option to compare different global warming levels for a specific climate variable. So, within this particular view, we're

looking at the average daily temperature indices of the temperature climate variable. And you can see the projections across the 4 different global warming levels. Moving into the hazard viewer, similar information and functionality that we've got across the 7 different hazards available across the different global warming levels.

Moving on to the exposure viewer, we have data layers that are available for you that allow you to look at what's exposed across the nation. Within the natural environment layers, we have protected areas and also land use information. Other layers that are in there, such as social and built environment, may also be of use to you when you're doing a sensitive location assessment. So, you can see things like population grid or social economic indices at the SA2 level.

Onto the vulnerability and risk viewer, we have three separate indices that are available through that viewer. And then lastly, the LGA insights.

Moving on to data sources. Leading up to the risk assessment, as I said, we noted that there was a high demand for access to the data. The visualisation through the Data Explorer goes a long way to doing that, but then we've also provided the data sources that are actually kind of the power behind the visualisations that you've seen, so you can provide feedback through this mechanism within the tool, which we always like to hear both, you know, what works and what's useful for you, but also things that you would like to see added into the Data Explorer and also the Catalogue.

And I'll just give you a bit of a sense of what's there in terms of the information. And lastly, I'll move into the Data Catalogue. So in the Data Catalogue, we have a raft of different data sets available, and you have the ability to search the Catalogue as well. And we're looking in particular at temperature in this example, and you can see the temperature related data sets that are available within the Catalogue. This gives you a sense of the information that's provided there. There is quite a depth of information and really importantly, the metadata that goes along with it to make sure that it is authoritative and you know exactly where it's being sourced from.

Here we've got an example of the climate social vulnerability index that we were looking at within the vulnerability and risk viewer earlier. And you can also, from, I

guess, the Data Catalogue, you can also get the link into the visualisation of the data sets.

Here's an example of where we've reached out into the CSIRO data holdings, and we're connecting in for the Bioclimatic Ecosystem Resilience Index.

That was a bit of a whirlwind tour, but hopefully that was useful for you and gave you a sense of what's available within the Australian Climate Service publicly available and accessible website. Thanks, Dan.

Daniel SHEEDY 55:39
Thanks so much, Tanya, and thanks for racing through that. Apologies, it's a bit crunched for time now.

TS

Tanya Schneider 55:43
That's OK.

Daniel SHEEDY 55: 43
We still have a few minutes, so I'll skip over my sort of reflections on the 3 presentations and head straight to Q&A. I think we're going to get all of us on screen. Cassie, the first question is for you. Does the EIV allow for comparing the habitat condition? For the surrounding radius, like what you demonstrated in the Protected Matters Tool.

CM

Cassandra MALLEY 56:06
Yeah, good question. So that's not a current function in EIV, but it is something we can take as feedback to explore for future versions. But you could draw a radius using our draw tool around your boundary in order, you won't get a specific score, but you could at least compare the patterns of condition from your footprint area to the surrounding area and create that to any distance using the measure tool in order to figure out how big you want that radius.

Daniel SHEEDY 56:38
Excellent. Great. Thank you. Liz, a few attendees have shared that they are using global tools, including the WWF's Water Risk Filter and the World Resources

Institute's Aqueduct tool. How does the Bureau's tools align with international tools? Oh, you're just on mute, Liz.

Elizabeth Johnston 57:05

How about now? Better, great. I think a lot of the international tools do actually draw on the Bureau data. So, the Bureau provides a lot of its data to the World Meteorological Organisation, and a lot of those international tools will draw on data sets through there. So, I think we can say that it aligns well. That data is also used for things like reports on global state of the water resources, so at that international level. So, in terms of water data that's produced and shown by the tools, I think it's consistent in terms of the information.

In terms of then the approach perhaps that's used internationally, I think it is just something that we've been thinking about a bit at the Bureau lately in terms of the presentation of national data sets. So, I think the way that we sort of conceptualised is that, you know, there's probably 2 ways in which you can present information from an information science point of view and both of those have trade-offs. So, I guess the 2 broad choices are that you can kind of merge information and so the Bureau sort of does that in a way in which I presented the Australian Water Outlook. When you look under the hood, it pulls information from a range of sources and then presents it in a new way through an integration tool, which is the Australian Water Outlook. It's largely useful for sort of static information and if you want that kind of uniformity in information. So, you know, our tools do probably lend themselves and have in the past lend themselves more to that. But then I guess the other piece is really that linking kind of the piece around what is conceptualised as kind of knowledge graphs or knowledge hubs and how do you look to pull information from a range of sources and then present that is something that we've been turning our minds to. And so, some of those other tools might actually be a little bit better at doing some of that and, you know, providing some of that more visual representation. And again, when you're thinking about trade-offs, what's it better for? There might be some more flexibility in those sorts of tools. There might be more scalability, there might be more opportunity to kind of go to that sort of point source, location specific information for a particular overreach or somewhere you're particularly interested in. So, I guess, you know, in summary for me, consistency is important. So, they're drawing on our data, so that's great, largely in terms of

representation, I think it really is, it may be seen as better practise to have, you know, some of those more, I guess, linking type platforms that do provide a little bit more value than perhaps maybe what we've kind of traditionally looked at, which is static data. So I guess it just depends what you're wanting to use it for in the assessments process and what information you're really keen to draw out.

I'd like to think alignment, that you may see some differences in the way in which we present that data based on potentially those couple of choices and which direction each of the tools at the international level have taken.

Daniel SHEEDY 1:00:25

Thanks, Liz. Yeah, integrity and consistency are really important when it comes to data, obviously. Cassie, back to you. I'm going to take hosting prerogative. We are at time, but we'll go for a few more minutes because we've got a few questions and I think people will get value out of hearing from the panel. So, Cassie, can landholders provide feedback if they if there are species missing from their species list or species include on the list which may be questionable on their piece of land?

Cassandra MALLEY 1:00:53

Yep, so yeah, there will be a contact in the About tab for the PMST tool or in the Support tab for EIV. And so, we are definitely more than happy to receive feedback from landholders on particularly those missing species. Happy for you to flag the questionable species as well, but I did want to note that some species will appear in your site even if they're not likely to occur there based on the conservative modelling approach that the department has taken to ensure that we've covered those species and their ranges under our requirements for the EPBC Act.

So, if you do see some species, you might just need to filter out a few of them that you know wouldn't occur. An example would be if you're in a completely landlocked location, but there is water somewhere nearby, it might just be that that species distribution just overlaps a little bit based on its modelling, even though there clearly can't be a fish in your property.

Daniel SHEEDY 1:01:59

Thanks, thanks, Cassie. Tanya, I think I've got one for you. I'm not sure if I'm phrasing

this right, but a suggestion would be great to be able to upload a polygon similar to what you can do with the EIA and the EIV tools.

Tanya Schneider 1:02:13
Yeah, enhancing the capability and the functionality that you see in the Data Explorer is something that we're looking at, and we'll be incorporating into future releases. So yeah, I've certainly been keeping an eye on what Cassie and Liz have presented to get ideas on what we should be doing next. And the Polygon one certainly jumped out at me as well. So, thanks for the suggestion.

Daniel SHEEDY 1:02:36
Great. Well, actually, I am going to potentially wrap it up now. Liz, we did have a WA, Southwest WA specific question from one of our valued stakeholders, but we'll do a follow up post webinar that we can reach out and get some contact information there. I'm just conscious we are on time and people have busy lives. So, I want to thank you all again for presenting.

Cassie, Liz and Tanya, thank you for joining us. We trust the presentations and demonstrations and discussion was good and increased attendees' awareness of the publicly available government data tools presented today. I think Paula made some feedback that went very fast. So just a reminder that we will be putting the webinar up on our website.

We value your feedback if you have a minute or so to spare. I know feedback forms are always a bit painful, and you forget about them because you rush off to your next meeting, but maybe while you're eating lunch today, please complete the survey via the QR code currently on the screen. If you would like further your learning about nature related assessments, we suggest that you visit the Assess page on our Nature Matters Guide via the QR code in the middle of the screen, and then...
Too many QR codes never enough. If you'd like to keep up to date with Nature Positive Matters updates, make sure you follow us on LinkedIn via the QR code on the right-hand side of your screen. Thank you all very much and have a great day.

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