



Science Rocks
Career Expo 2020
ONLINE
STUDY GUIDE



fisheries science and sustainability
marine ecology
science communication

Great Southern Science Council Pro Files series – connecting science professionals and our community

Kylie Outhwaite and Tahryn Thompson

job title
organisation

Community Education Officers, Fisheries – job share in Albany, WA
Government of Western Australia, Department Primary Industries and Regional Development, Sustainability and Biosecurity

www.dpird.wa.gov.au www.fish.wa.gov.au

where and contacts

Albany-based, work Esperance to Walpole, WA; www.fish.wa.gov.au; ph 08 9845 7400

Pro File video interview

Watch the Pro File video
Kylie Outhwaite & Tahryn Thompson - Fisheries Community Educators in your school and town to learn more about these STEM professionals, why they chose to work in this field and their pathways, their typical work day, favourite part of the job, common myths about their field, and more.



Tahryn Thompson (L) and Kylie Outhwaite (R) DPIRD community outreach, sharing marron fishing information at Walpole Markets.



On-site community engagement to raise awareness of the Shark Drumline Trial with community in Gracetown.



Fishing for Sustainability; delivering a fun, engaging activity to students at Esperance Primary School, focused on fishing rules and species identification.

EXTENSION MATERIAL – science professionals answered these questions to extend your interest and study in their topic area

<p>FREQUENTLY ASKED QUESTIONS in this topic/job</p>	<p>FAQ 1 What is the oldest fish that ever lived?</p>	<p>In WA, the oldest fish we have ever aged was a Deepsea Black Cardinalfish, arguably a very ugly fish! It was caught in 700m of water off Albany’s coast, was 743mm long, and was 95 years old! Prior to this, the oldest fish <u>research scientists</u> had aged was an 84 year old, 600mm long Bight Redfish caught in 600 metres of water off Two Peoples Bay! More broadly, studies show that the Orange Roughy can live more than 200 years, and the Greenland Sleeper Shark can exceed 400 years old!</p>
	<p>FAQ 2 [presenting a specimen, photo or description] Do you know what this fish is?</p>	<p>When we are out on site, we always have people approaching us to identify a fish they caught! Sometimes they explain the fish’s features and sometimes they show us a photo. Our favourite response is to work through the identification with them on the <u>Recfishwest App</u> from https://recfishwest.org.au/ and the <u>App Store</u> and <u>Google Play</u>. The Recfishwest App is a one-stop-shop for latest fishing rules in WA and includes built-in fish identification function. Simply choose the fish’s body shape, tail shape and colour, and the App will generate a list of likely species, and most of the time we can help identify fish in this process.</p>
	<p>FAQ 3 What are we learning about sharks with recent research efforts?</p>	<p>The WA Government has implemented a shark mitigation strategy to help beachgoers enjoy the ocean with confidence, while learning about sharks and the hazards they present. For the most up to date information about what is in place for shark research, monitoring and safety, go to the SharkSmart website www.sharksmart.com.au or download the SharkSmart WA App from the <u>App Store</u> and <u>Google Play</u>.</p>
<p>YOUR TURN</p>	<p>What question could you ask them?</p>	

<p>LEARN MORE</p>	<p>Tahryn and Kylie recommend this <i>newsletter</i> about current fisheries research and management:</p>	<p>You can sign up to receive our <i>Catch</i> e-newsletter! Delivered straight to your email inbox, <i>Catch</i> features short articles on interesting and current fisheries research, updates on management and rule changes, information on seasonal closures and more. And check out our FaceBook page @fisherieswa http://www.fish.wa.gov.au/Fishing-and-Aquaculture/Recreational-Fishing/Catch-E-Newsletter/Pages/default.aspx</p>
	<p>Kylie and Tahryn say this website features excellent resources about this topic:</p>	<p><u>Marine Waters</u> is our wonderful online resource, developed by the DPIRD Fisheries Education Program. This dynamic website is loaded with resources for teachers, students and parents, all focused on the Western Australian marine and coastal environment. https://marinewaters.fish.wa.gov.au/</p>
<p>DO MORE</p>	<p>A citizen science or interactive project that community can be involved in to learn more about this topic</p>	<p>Send Us Your Skeletons This citizen science program contributes directly to the long term monitoring of WA fish stocks. Recreational fishers donate their fish frames (=head and skeleton left after the fish is filleted), which DPIRD scientists examine to assess the health of that fish species stock. Currently in the Albany area, DPIRD needs to examine more herring frames to better understand our regional herring fishery – send us your herring frames today! http://www.fish.wa.gov.au/Fishing-and-Aquaculture/Recreational-Fishing/Send-Us-Your-Skeletons/Pages/default.aspx</p> <p><u>Redmap</u> (Range Extension Database & Mapping project) invites the Australian community to spot, log and map marine species that are uncommon in Australia, or along particular parts of our coast. Spot. Log. Map. https://www.redmap.org.au/</p>

<p>INNOVATE One, Two, Three...solved!</p>	<p>One Big Problem we are trying to understand in this topic area Two innovative ways we are already trying to solve the problem THREE ideas for the problem solving wishlist that anyone could help develop</p>	<p>1 The Send Us Your Skeletons program plays a crucial role in accurately monitoring fish stock health, and researchers urgently need more Australian herring frames from the Albany region. The challenge is to get <i>enough</i> frames for an adequate sample size to infer fishery health and stock status. We are currently addressing this problem with a few education, promotion, and incentives, such as</p> <p>2.1 Education - delivering a fun school activity called <i>Fish of Ages</i> to demonstrate how and why scientists age fish and use this information to monitor fish stocks. The session piques interest, and encourages students and families to participate by donating herring frames from their next fishing adventure!</p> <p>2.2 Information - social media updates on Facebook, signage and talks at boat ramps, and posters and pamphlets with information about the program, why the herring frames are needed, and how people can help.</p> <p>2.3 Incentives - We offer quarterly prizes! Every time someone donates some herring, their name goes into the draw for some great prizes – tackle, vouchers, rods...just to name a few.</p> <p>3 Despite these efforts, we are still not receiving enough herring donations. We welcome suggestions to encourage more fishers to donate herring frames – can you help develop more ideas, or increase effectiveness of one above?</p>
<p>YOUR TURN</p>	<p>Using your new insights for this topic and its issues, please add another idea for the Problem Solving Wishlist. Then think of a research question to test possible solutions. <i>eg Idea: offer a modest cash or credit “bounty” for every legal herring frame (like a drink bottle deposit); questions, how many do we get currently, and how many do we need? Is funding available to pay? What could a “credit” be used for? Fishing licence discount, local tackle retail, sustainable retail seafood?</i></p>	

<p># CURRICULUM LINKS #</p>	<p># Examining factors that affect population sizes such as seasonal changes, destruction of habitats, introduced species #</p> <p>How does the Send Us Your Skeletons citizen science initiative help Taryn and Kylie and other researchers understand the factors that affect fish populations?</p> <p>What other measurements would need to be made for this study to be effective?</p> <p>What ocean and coastal monitoring programs are underway around Albany? You can start your research here https://www.albany.wa.gov.au/documents/580/chrmap-monitoring-plan</p>
<p>FAMOUS MARINE ECOLOGISTS</p>	<p>Do some research to find two famous marine ecologists or marine biologists:</p> <p>1 famous marine ecologist or biologist name</p> <p>2 famous marine ecologist or biologist name</p> <p>What are they famous for? How has their work changed how we view the oceans?</p>
<p>KNOWLEDGE + IMAGINATION What would it be like?</p>	<p>Consider our planet without oceans. Write a short description of a day in the life of somebody who lives on a planet without oceans.</p>
<p>OUR PATCH MARINE ECOLOGY IN THE GREAT SOUTHERN</p>	<p>1 List and briefly describe three threats to marine life in the Southern Ocean off Western Australian coast. Compare your list to one other ocean location; are threats similar to those in other places?</p> <p>2 For each threat, describe two actions we could take reduce and manage those threats. Based on your answers, do you think that we will have healthy oceans in 100 years time?</p> <p>Ideas about proposed marine protected areas for Western Australia’s south coast may be researched here https://www.dbca.wa.gov.au/plan-for-our-parks/south-coast-marine-park</p>