



earthwatch
AUSTRALIA

2020-21 IMPACT REPORT



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We respectfully acknowledge Aboriginal people as Australia's First Peoples and the local Traditional Owners as the original custodians of the land and water on which we rely and operate, and we pay our respects to Elders, past, present and future. We acknowledge the continued cultural, social and spiritual connections that Aboriginal people have with the land and waters and recognise and value that Traditional Custodians have cared for and protected these lands and waters for thousands of generations. We recognise and value the essential and continuing contribution of Aboriginal people to the region.

From The CEO



2020 and 2021 represent a tumultuous time for society and the environment. The pandemic has upended our ways of working and living, and extreme weather events bring us daily reminders that we are already living with the consequences of a warming planet. Meanwhile, the headlines continue to state what scientists have said time and time again; that our vulnerable plants and animals are vanishing under our watch.

Yet, I am energized, and I encourage us all to hope.

Every day at Earthwatch I am humbled to see the collective impact of the work undertaken by citizen scientists and teachers, Indigenous Rangers and researchers, businesses and young people, to tackle the environmental challenges we face. Our mission has never been more important, and the Earthwatch team are dedicated to supporting people, empowering us to take action that will save the natural world, through work, life and play.

Even through COVID disruption, teachers and taxonomists on Bush Blitz species discovery expeditions observed the healthy population of endangered Northern Quoll on an island without cane toads – a direct consequence of the feral animal management that the Anindilyakwa Aboriginal Land & Sea Rangers undertake.

Teenagers on a Student Challenge expedition, members of the public, and office workers have all collected carbon storage data on wetlands expeditions in Queensland that directly contribute to Australia's Greenhouse Gas Accounts, helping fulfill Australia's international reporting obligations for our emissions under the Kyoto Protocol. Business executives dived and snorkelled alongside world-renowned coral reef experts on expeditions that are developing effective interventions to restore the reef.

There is good news for the environment, and as always, it is the purpose of Earthwatch to ensure that work happens through cross sector collaboration, citizen science, education and long-term change. The UN Secretary General called for all sectors of society to mobilise for a Decade of Action 2020-2030.

This report is a snapshot of the impact the organization you love and support has had during the first two years of this decade.

Fiona Sutton Wilson, Chief Executive Officer



Photo: David Webb



The Bush Blitz Groote Eylandt Team with Anindilyakwa Aboriginal Land & Sea Rangers, collecting species data in the Northern Territory. Photo: David Webb.

From The Chair



The impact Earthwatch Institute enjoys today is testament to the leadership the organisation has enjoyed for a decade. Cassandra Nichols, CEO since 2016, and prior to that an energetic leader within the team since 2011, has shown her dedication to the organisation and the environment. Cassandra brings a strategic mind and commercial mindset to an organisation that fundamentally bridges the gap between science and the community, all to create the change we need for a nature positive future.

Cassandra has steered Earthwatch through hard times to find sustainable ways of conducting our business – empowering people to save the natural world, through work, life and play. It is further proof of her dedication to Earthwatch that she has worked with the board to prioritise succession planning and a stable transition for the organisation, in her mentoring of our new CEO, Fiona Sutton Wilson.



We are fortunate in the people that make up Earthwatch Australia, from staff and participants, to donors and directors. It serves to reinforce our conviction that it is people who ultimately decide how quickly we transition to a sustainable society that values and stewards our biosphere.

I want to take this opportunity on behalf of myself and my fellow board directors, to thank Cassandra Nichols for her leadership and dedication to Earthwatch Australia over many years and wish her well in her future endeavours.

Mathew Nelson, Chair

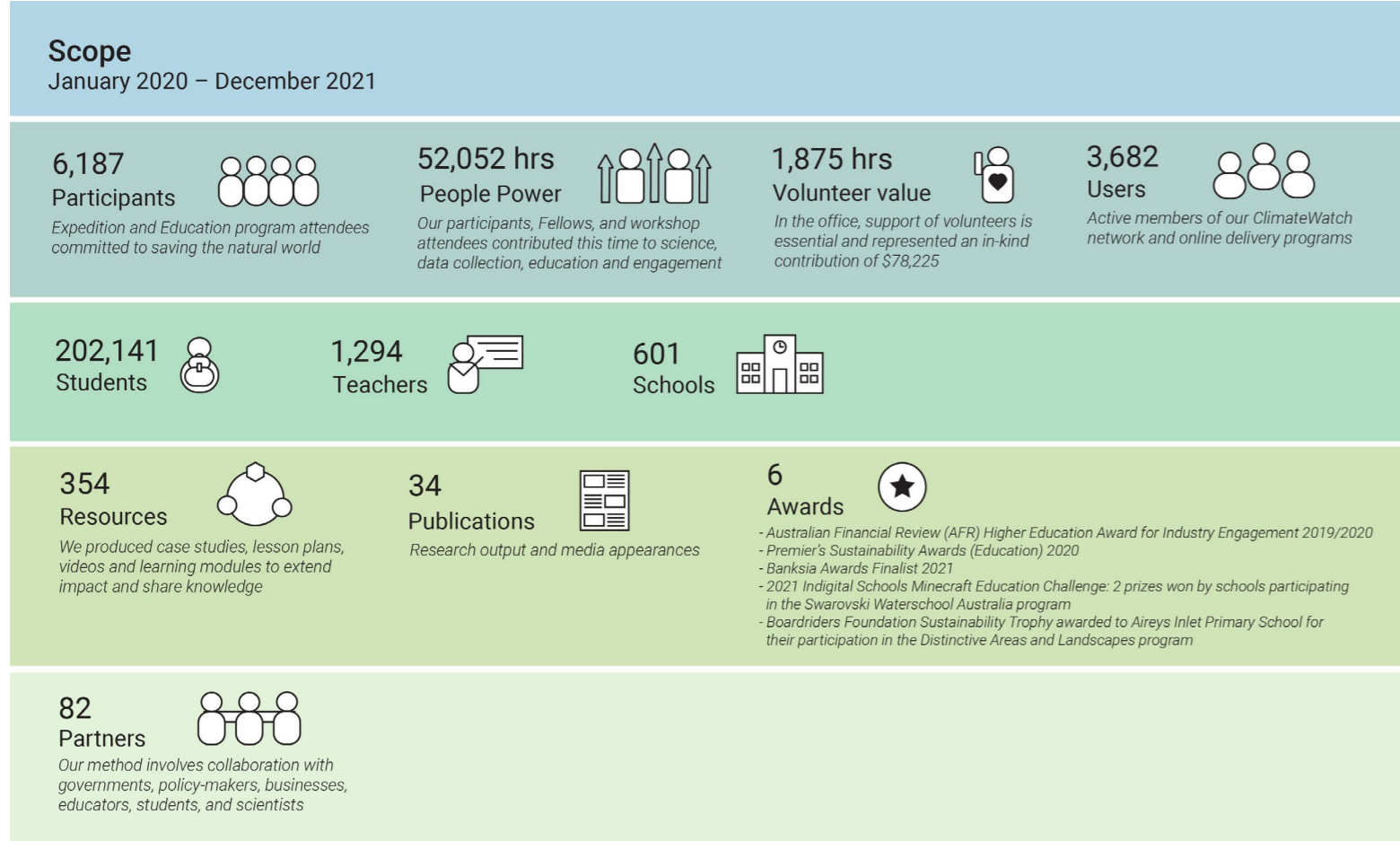


Community Day at a Bush Blitz expedition in Fowlers Bay, 2021.

Impact at a Glance

Earthwatch is a global environmental charity founded in 1971. We take action to address global change through a time-tested model of citizen science and education that inspires behaviour change, and positive action for nature. By engaging all sectors of society with researchers in the field, and educators in outdoor classrooms, we have helped to safeguard critical habitats, conserve biodiversity, and promote the sustainable use of natural resources.

The work of Earthwatch involves connecting citizen scientists with leading researchers, in order to increase data collection and provide hands-on conservation and education experiences which create knowledgeable and enthusiastic environmental stewards within our society. Over the past two years, we have worked to deliver significant environmental research and education programs across Australia amidst a global pandemic. In a snapshot:



The George Alexander Foundation's Student Challenge expedition team, with Professor Norm Duke and Earthwatch Wetlands scientist Jock Mackenzie, collecting mangrove health data in Queensland's wetlands in 2021.

Aligning with Global Efforts

Sustainable Development Goals

At Earthwatch, we envision a future where we work together to live within our means and in balance with nature. We align our strategic priorities to the UN Sustainable Development Goals (SDGs), guiding us in project development decisions and a common language for shared goals with our partners.

Together with our partners, Earthwatch delivers projects that feed directly into SDG 4 (quality education); SDG 12 (responsible consumption and production); SDG 13 (climate action); SDG 14 (life below water); SDG 15 (life on land); and SDG 17 (partnerships for the goals).



Reef 2050 Long-Term Sustainability Plan Goals

Our work in the Great Barrier Reef aligns with the Australian Department of Agriculture, Water and Environment's Reef 2050 Long-Term Sustainability Plan. Our scientific expeditions, "Protecting the Reef's Coastal Frontier" and "Recovery of the Great Barrier Reef" feed directly into key objectives and goals:

Objectives

- Wetland condition is improved
- No loss of the extent of natural wetlands
- Coral reef habitats maintain good condition and resilience
- Local Traditional Owner land and sea management organisations are equipped to operate at the appropriate scale
- Traditional Owners caring for country

Goals

- Key habitats are being actively rehabilitated or restored
- Comprehensive monitoring, evaluation and reporting supports informed and agile management responses
- The capacity of Reef communities, Traditional Owners and industries to adapt to a changing climate is increased
- Traditional Owners are supported to continue to manage sea Country
- Species and habitats are supported to adapt to a changing climate
- Science and knowledge are advanced, easily accessible and able to be used in decisions



TeachLive Fellows on a Bush Blitz expedition in Groote Eylandt, 2021. Photo: David Webb.

Our Programs

Collaboration and effective partnerships between managers, partners and stakeholders are maintained and enhanced through our programs.

At the core is experiential learning, whereby members of the general public, communities, educators, students and industry join with scientists to gather data which will generate environmental insights, inform future policy and motivate long-term behaviour change.

The complex challenges we face require collaboration, cooperation and mutual understanding if we are to find solutions. Earthwatch brings these groups together to facilitate this process by engaging people in research to provide evidence-based solutions that educate and inspire action to halt environmental decline.

Blue Carbon: Counteracting Climate Change

HSBC employees and clients assisted leading wetland researchers from Deakin University's Blue Carbon Lab to quantify blue carbon stocks across Australia and New Zealand.



Bush Blitz

Building Australia's capacity to understand the importance of biodiversity and how to protect it, by increasing the collection and sharing of scientific data using a collaborative approach. Since the program began, 1,789 new species have been discovered. 2020-21 trips went to Groote Eyelandt, Stony Head and Fowlers Bay. 16 teachers were selected to attend as research assistants, and communicate their experience "live" to their students. In addition, a marine expedition 'Investigating the Indian Oceans Territory Voyage' connected 10 schools with over 350 students learning from CSIRO scientists via our TeachLive Adventure Portal.



ClimateWatch

ClimateWatch is our continental-scale phenology research program, a national network of citizen scientists and an app. ClimateWatchers submit data to track the phenological changes of plants and animals to help inform national climate change and adaptation strategies, an impossible task without training, educating and engaging with people across the Australia to form a dedicated network of citizen scientists. In 2020, we invested in the technology to improve its useability and launched an in-app trails feature with the Victorian Government's Volunteering Innovation Fund, which allows users to explore a suite of dedicated trails all across Australia. In 2021, we launched a partnership with Telstra Foundation.



Bunurong Land Council, Indigital, Parks Victoria



Project Manta Ningaloo Reef

This expedition focused on food webs that support iconic mega fauna of Coral Bay and studying organism interactions to better understand the threats facing this ecosystem.



Murdoch University

Protecting Wetlands for the Future

This initiative focusses on the restoration and conservation of coastal ecosystems by providing knowledge and resources needed to monitor the condition and health of wetlands and protect these unique ecosystems.



Atherton SHS, Australian Citizen Science Association, Boyne Island EEC, Cool Australia, Gidarjil Development Corporation, Holloways Beach Environmental Education Centre (EEC), Kuranda SC, Mackay Christian College, North Keppel Island EEC, Pimpama SC, Redlynch SC, Trinity College Gladstone, Yeppoon SHS, Yirrganydji Land & Sea Rangers.

Recovery of the Great Barrier Reef

Mitsubishi Corporation and the Australian Institute of Marine Science work to fill knowledge gaps that will help reef managers to make evidence-based decisions about active interventions that will support the Great Barrier Reef's recovery, and the recovery of reefs around the world.



James Cook University

Tackling Marine Debris

Amcor supported the publication of "An Insight to Plastic Waste Reduction Efforts", which is a synthesis of experience and knowledge from existing plastic waste reduction projects globally and a snapshot of the current level of understanding and appetite for a plastic offset market.



Aquamarine Australia

Green Collar

Understanding Queensland's Blue Carbon Resource

Wetlands are critical to carbon sequestration in Australia. Through the power of citizen science, this program successfully raised the awareness and value of Queensland's Blue Carbon stocks. The results of the program helped develop a technical report highlighting the power of citizen science data in mangrove habitats, provided critical information to the development of the blue carbon market and will have enduring impact on the development of the Emissions Reduction Fund, National Greenhouse Gas Accounts, and Australian Government policy.



Bruce Belcher's Daintree River Cruises, Cairns and Far North Environment Centre (CAFNEC), Daintree River Cruise Centre, Jabalbina Aboriginal Corporation, Mackay Christian College, Mackay Regional Council, Pioneer Landcare, Reef Catchments Natural Resource Management (NRM), Sarina State High School, Yuwi Aboriginal Corporation

Wetlands not Wastelands

Earthwatch provided training to 20 CLCAC Indigenous Land and Environment Rangers and 30 community volunteers to help deliver a first-of-its-kind marine pollution and wetland management program in the Lower Gulf of Carpentaria.



Carpentaria Land Council Aboriginal Corporation, Plastic Collective

Distinctive Areas and Landscapes

The Victorian Distinctive Areas and Landscapes capital grants program aims to engage schools and the community in protection of environmentally and culturally significant spaces. This program focusses on local environmental stakeholders and learning opportunities in four distinct areas: Bass Coast, Bellarine Peninsula, Macedon Ranges and Surf Coast.



Barwon Water, Bass Coast Landcare, Bellarine Catchment Network, Boardriders Foundation, Great Ocean Roads Parks Authority, Phillip Island Nature Parks, Resource Smart, South Gippsland Water, Southern Ocean Environmental Link, Westernport Water

Student Challenge

Government and Indigenous secondary school students are given scholarships to live and work in-field alongside leading scientists conducting environmental conservation research. 2020-21 trips included: Project Manta on the Ningaloo Reef in Western Australia, Ecosystems of the Murray River and Mallee in South Australia, and Protecting the Reef's Coastal Frontier in Queensland.



Swarovski Waterschool

In 2020, we announced the Earthwatch Australia and Swarovski Waterschool education partnership. Following a successful pilot program in 2021, Earthwatch Australia will deliver the 2022-2024 Swarovski Waterschool Australia program. Pupils from 15 schools in New South Wales will teach their peers and wider communities about the importance of conserving and protecting water by creating educational workshops that aim to explain and solve the unique water challenges faced in Australia. Two participating Swarovski Waterschool Australia schools, Coreen School and Lugarno Public School, received prizes in the 2021 Indigital Schools Minecraft Education Challenge. Students built a present-day representation of their local Country, alongside another representation of the same area sometime in the future, and the changes that might occur if we heal and care for Country.



Georges River Environmental Education Centre

Indigital

Kids Teaching Kids (KTK)

Promoting positive wellbeing and building resilience in young people through the KTK peer teaching pedagogy. KTK Week and the Annual KTK conference are milestone events.



Amaroo Environmental Education Centre, City of Stonnington, Cooina Primary School, Ecolink, Environment Education Victoria, Henbury School, Lower Murray Water, Mount Waverley Primary School, Parks Victoria, Sunshine Coast Council, Upper Goulburn Landcare, Urrbrae Agricultural High School, Warringa Park School, Yarra Valley Water.

Case Study

Blue Carbon – Counteracting Climate Change



In 2019, Earthwatch first reported on our partnership with HSBC and Deakin University's Blue Carbon Lab to study, value and raise awareness of coastal wetlands. In the following years, HSBC employees and HSBC clients and industry stakeholders assisted leading wetland researchers to help gather data that directly contributed to our shared understanding of climate change, carbon stores, climate change adaptation and mitigation strategies (SDG Goal 13.1). The project has now concluded with significant outcomes for science, the environment, and behaviour change.

We are proud to announce that with financial support of \$703,190 AUD from HSBC, this program delivered 25 events via the Earthwatch "Scientist for a Day" model. Corporate staff were connected to science and nature, and transformed into citizen scientists who collected critical data to inform wetland management and climate change mitigation policies.

The educational and scientific success of the HSBC Scientist for a Day program was recognised through the 2019 Australian Financial Review Higher Education award for Industry engagement, went on to receive the 2020 Premiers Sustainability Awards Education category, and was a Finalist for the 2021 Banksia Award. The program was also showcased externally in several conferences, newspapers, website blogs, on social media (#BlueCarbonArmy) and in a TV news report.

By recruiting corporate staff as citizen scientists, the program up-skilled more than 350 employees from 23 corporations (including HSBC, Qantas Future Planet, Australia Post, QBE, EY, KMPG, ANZ, Allens, Geelong Ports, HESTA and more) on natural capital and ecosystem services, whilst maximising field sampling. HSBC citizen scientists surveyed over 300 vegetation plots and collected more than 1000 soil samples from coastal wetlands in Sydney, Melbourne and Auckland. Data is being used to prepare research publications and knowledge for government and policy-makers that will advance our understanding of Blue Carbon ecosystem, long-term strategies and national adaptation plans for action on climate.

Scientific Impact	
341	Vegetation plots surveyed
1,125	Soil samples analysed
323	Employees participated
150	Microbe samples from soil
480	Teabags buried/recovered to measure decomposition rates
7	Research projects fulfilled



Case Study

Swarovski Waterschool Australia

Earthwatch is the delivery partner of the Swarovski Waterschool Australia program, making Australia the eighth country to join the global water education effort. The 2021 pilot program aimed to empower and educate young people about the importance of water and the environment, focusing on the unique water challenges faced in Australia.

Australia's waterways are under threat, and rapid change is required to restore health and ensure adequate fresh water supply to rural and urban populations.

The Swarovski Waterschool Australia pilot program engaged schools to identify local water challenges, call their peers to action, and come together to implement action projects in their own school and community to protect and restore local water systems. The program included: Environmental virtual world building in Minecraft, Indigenous education, the use of our Kids Teaching Kids peer-teaching pedagogy to create water education workshops, and participation in the 2021 Virtual Kids Teaching Kids Conference.

The program engaged two Schools for Specific Purposes (SSP), which provide specialist and intensive support in a dedicated setting for students with moderate to high learning and support needs. With enquiry-based learning models and hands-on technology, SSP students were able to safely come together during a challenging pandemic-affected year to build virtual worlds, and work towards achieving Department of Education mandated Reconciliation Action Plans.

Following a successful pilot program in 2021, Earthwatch Australia will deliver the 2022-2024 Swarovski Waterschool Australia program. Throughout this 3-year project, we will continue to empower young Australians to become global Water Ambassadors, and encourage them to use their voices to inspire change and collective environmental action.

Beyond direct educational benefits, the program will continue to contribute to the wider impact and goals of the NSW Department of Education, local water authorities, government bodies and environmental organisations across New South Wales.



The Swarovski Waterschool program was a transformational experience that enabled students to lead and teach content on water quality in our local area. 'Kids Teaching Kids' developed students critical and creative thinking skills .. and has empowered our students to 'make a difference' in our world.

*Leonie Dufty, Teacher Librarian & ICT Coordinator,
Lugarno Public School, Lugarno, NSW*

Educational Impact	
107	Students directly engaged
1,459	Students indirectly engaged
12	Participating schools
24	Teachers trained
2,000	Community members engaged digitally
16,768	Combined reach of program



Photo: Jed Dobre (End Media House)

Board Members and Scientific Advisory Committee



Photo: David Webb

Board Members

Mathew Nelson (Chair)

Aaron Organ

Andrew Thomson

Belinda Kischel

Emily Gerrard

Nuvan Aranwela

Peter Cochrane

Prof Ian Woodrow

Shamal Dass

Scientific Advisory Committee

Prof Ian Woodrow (Chair)

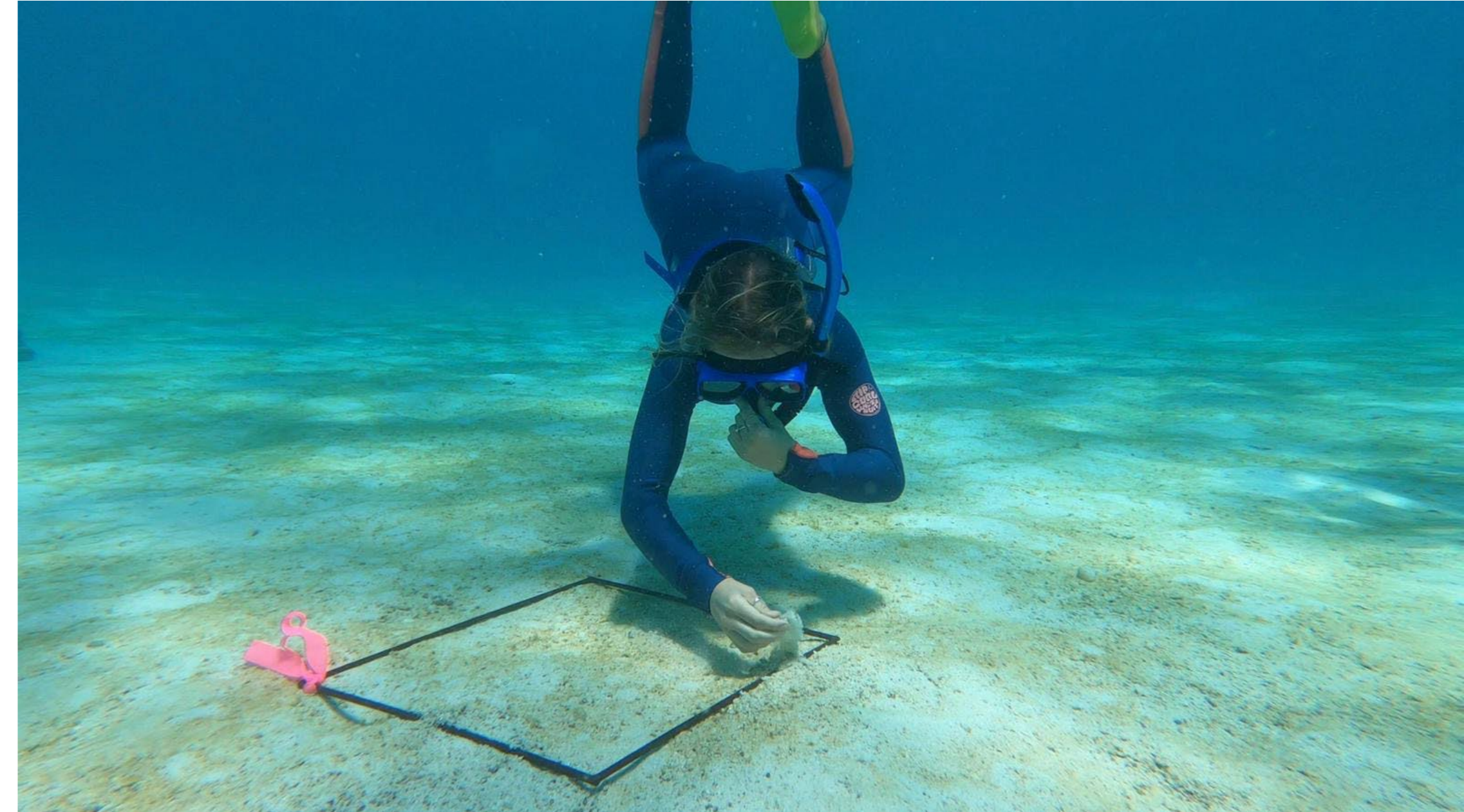
Prof David J Booth

Jim Walker

Assoc Prof Kelly Miller

Dr Tim O'Hara

Our thanks is extended to Rod Jackson for his service as a member of the Finance and Risk Committee.



Student dives at Ningaloo Reef during the Project Manta Student Challenge, 2021.



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