

A photograph of two divers in the water. One diver is in the foreground, seen from the back, wearing a black wetsuit and a BCD. The other diver is further back, holding a long, brown, textured object (possibly a piece of seaweed or a sample) up to their face. The background shows a rocky coastline under a clear blue sky. The text 'ANNUAL REPORT 2021' is overlaid on the left side of the image.

ANNUAL REPORT 2021

INTRODUCTION

Australia is a marine nation with over 87% of the population living within 50 km of the coast, and our oceans play an important role ecologically, socially and economically. Our marine environment is critically important for the cultural practices of Indigenous communities and as the world's third largest marine jurisdiction, it is home to many marine species that occur nowhere else in the world. Our marine regions provide valuable services through the provision of food, energy, transportation, tourism, conservation and recreation, and by 2025, just 3 years away, our marine industries are projected to contribute around \$100 billion each year to Australia's overall economy.

However, further demands and pressures on coasts and oceans are expected with increasing coastal populations, food security needs and emerging industries, such as renewable energies and offshore marine production systems. Managing these multiple uses to ensure sustainable ecosystems, industries and social and economic benefits for communities is a major challenge globally.

The Centre for Marine Socioecology (CMS), is a unique collaboration between the University of Tasmania (UTAS) and the Commonwealth Scientific and Industrial Research Organisation (CSIRO), with support

from the Australian Antarctic Division (AAD). It was established in 2014 to provide, develop and integrate the interdisciplinary research and teaching capacity required to underpin sustainable management of Australia's coastal zone and ocean in a rapidly changing world. It brings together an extraordinary diversity of disciplinary expertise, and considers multiple knowledge systems, in active collaborations, to directly address both the theoretical and applied aspects of marine socioecological systems.

We are extremely pleased to see in this annual report that despite the great challenges of the last two years presented for the whole world, the Centre has continued to grow international recognition for the challenging research being conducted and communicated in innovative ways, and for the training of students in interdisciplinary sciences. We look forward to its continued success into the future.

Professor Anthony Koutoulis

Deputy Vice-Chancellor (Research)
University of Tasmania

Dr Dan Metcalfe

Director, CSIRO Oceans and Atmosphere

We acknowledge and pay respect to the traditional owners and custodians of sea country all around Australia, in particular *lutruwita* (Tasmania), and recognise their collective wisdom and knowledge of our oceans and coasts.



L-R: Gretta Pecl and Beth Fulton

WORDS FROM CMS DIRECTOR AND DEPUTY DIRECTOR

The Centre for Marine Socioecology continues to go from strength to strength in both research and post graduate training.

In this report we are pleased to showcase a selection of our research and other activities from 2021.

We would like to acknowledge that for many in our community it has been another very daunting and challenging year. The CMS community is very multicultural, with more than 30 nationalities, and so many of our affiliated researchers and students have found it particularly hard being away from family. Some of our students have returned to their home countries and have continued their studies remotely.

Wholehearted thanks to all our students, researchers, collaborators and stakeholders, for their ongoing efforts in the Centre of Marine Socioecology during another exceptionally challenging year. Not only has your generosity and enthusiasm enriched our collective efforts, but the contributions and outcomes are being realized across a broad spectrum of activity, relevant at local, regional and global scales.

We continue to be proud of the Centre's outputs and outcomes and are very pleased to see the Centre's rapidly developing international reputation. Even more importantly, we were delighted by the outcomes of the external formal review of CMS that highlighted our many successes and acknowledged our people-centric approach and inclusive culture.

We look forward to continuing this work with you in 2022.

Professor Gretta Pecl (IMAS)

Director

Dr Beth Fulton (CSIRO)

Deputy Director

BACKGROUND

The Centre for Marine Socioecology brings together disciplinary expertise in physics, law, economics, biology, sociology, psychology, human health, art, media, philosophy and governance from the following University of Tasmania colleges, schools and institutes: the Institute for Marine and Antarctic Studies (IMAS), the College of Arts, Law and Education, the College of Health and Medicine, the Tasmanian School of Business and Economics, the School of Technology, Environments and Design; and from the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Australian Antarctic Division (AAD). We are also fortunate to have valuable participation from other leading Australian and International institutes.

CMS embraces the extensive knowledge of the traditional owners of Australia, working collaboratively with Indigenous scientists, Elders and knowledge holders to collectively enhance our understanding of our oceans and coasts.

VISION A WORLD-LEADING CENTRE TO SUPPORT INFORMED AND SUSTAINABLE MANAGEMENT OF MULTIPLE-USES IN MARINE AND COASTAL SYSTEMS

MISSION TO PROVIDE EXCELLENCE IN RESEARCH AND RESEARCH TRAINING THAT UNDERPINS THE SUSTAINABLE DEVELOPMENT OF THE MARINE DOMAIN FOR ALL USERS AND BUILDS THE NECESSARY CAPACITY TO PROVIDE SKILLS AND SOLUTIONS FOR INDUSTRY, GOVERNMENT AND THE COMMUNITY

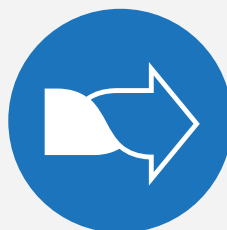
RESEARCH THEMES



**Coastal
& Marine
Governance**



**Sustainable
Futures &
Planetary Health**



**Environmental
Change &
Adaptation**



**Knowledge
Production**



**Science
Engagement
& Impact**

CHALLENGES

RESEARCH APPROACH

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2021 HIGHLIGHTS



Awards

Cayne Layton received the Tasmania STEM Young Researcher of the Year 2021 in the Tasmanian STEM Excellence Awards for his innovative work in seaweed restoration.

Kirsty Nash received the L'Oréal-UNESCO Australia & NZ For Women in Science fellowship. The Fellowships are awarded each year to five eminent women scientists with exceptional careers, to recognise, encourage and support the advancement of women's science and scientists.

Photo credit: L'Oréal-UNESCO



K. Radway Allen Award 2021

Recognises outstanding contribution to fish or fisheries science



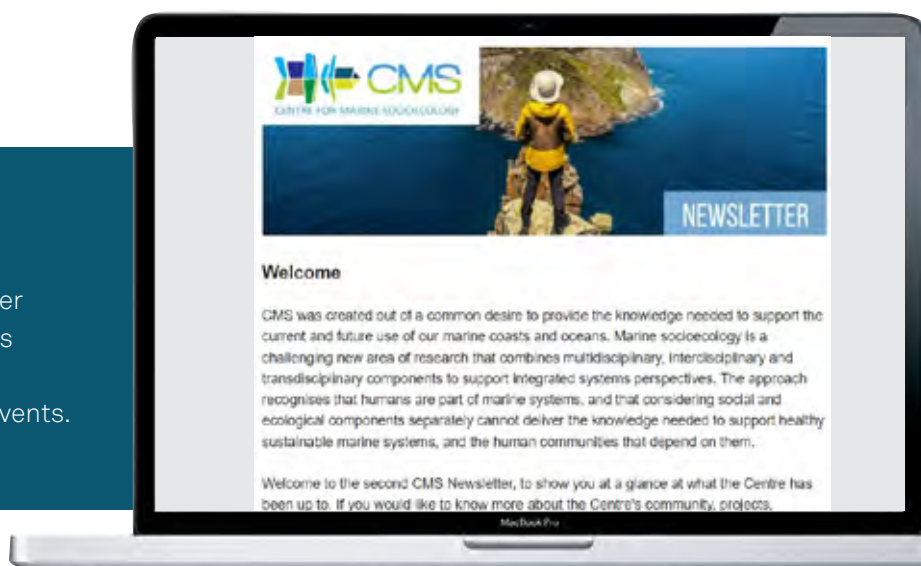
Prof Gretta Pecl



Gretta Pecl was the recipient of the 2021 K. Radway Allen Award, the highest honour awarded by the Australian Society for Fish Biology, recognising Gretta's contribution in fish and fisheries sciences and leadership.

CMS Newsletter

CMS launched a quarterly newsletter to a broader community, the “friends of CMS”, where we share the latest publications, news and upcoming events.



Julian Harrington from TSIC presenting at the Human wellbeing in a conflicted world panel at the Ocean Visions Summit, Hobart/nipaluna campus.

Ocean Visions Summit 2021

CMS hosted the Ocean Visions Summit in Hobart/nipaluna with two expert panels ‘Facilitating human wellbeing of marine communities in a conflicted world’ and ‘Ocean Solutions: What is needed for success in Tasmania?’

The Ocean Visions Summit 2021 was a huge success worldwide, with more than 2300 registered attendees from almost 80 countries gathering to work on ocean solutions. The Summit was held virtually in the Scripps Institution of Oceanography, USA and linked to co-organized satellite virtual campuses in Hobart, Australia, Cape Town, South Africa, Mindelo, Cabo Verde, and Kiel, Germany.

CMS Formal review

This year, CSIRO and UTAS engaged Peter Cochrane in a formal review of CMS research, training and engagement activities. Peter’s career spans plant ecology research, environment and natural resource policy advice, the oil and gas industry, and nature conservation policy and programs. He retired in 2013 after fourteen years as Director of National Parks with the Australian Government, and currently chairs the Sydney Institute of Marine Science, the Blue Mountains World Heritage Institute, and Australia’s Tropical Herbarium. He is a Councillor and Vice President of the International Union for Conservation of Nature (IUCN) and a member of the Marine National Facility National Benefit Assessment Committee. He chaired the NESP Marine Biodiversity Hub Steering Committee from 2015-2021, and is an Adjunct Professor in the School of Biological, Earth and Environmental Sciences, Faculty of Science UNSW.

Reflecting on the review of CMS Peter said, ‘I was very impressed with what I learned about the Centre from its partners, members and associates. CMS generates world-leading cross- and trans-disciplinary research in coastal and marine environments. It has inspiring and innovative leadership and researchers, at the cutting edge of their fields, and has an enviable culture of respect, collaboration, encouragement and support for diversity - of people, perspectives and disciplines.’

CMS is very grateful to Peter for his thoughtful and thorough evaluation of our activities, his valuable insights, and the opportunities highlighted by the review- thank you! The review provided by Peter will be available for dissemination shortly.



2021 SNAPSHOT

105

CONFERENCES &
PRESENTATIONS

97

PAPERS

4

BOOKS &
CHAPTERS

35



STUDENTS

21

REPORTS & OTHER
PUBLICATIONS

23



FUNDING & GRANTS

1



VISITOR

15



CMS EVENTS

55

PUBLIC OUTREACH
EVENTS/ACTIVITIES

9



GRADUATIONS

96



RESEARCHERS

19

AWARDS &
PRIZES

SUMMARY OF SCIENTIFIC OUTPUTS

CMS strongly values our direct connections with local stakeholders and the applied impacts of our research. However, we also have strong academic impact at the global scale. Our staff and students have collectively published with hundreds of international co-authors, with citation metrics more than **triple** the world average for similar publications.

Field-Weighted Citation Impact takes into account the differences in research behaviour across disciplines, revealing how the number of citations received compares with the average number of citations received by all other similar publications indexed in the Scopus database (a value of 1 indicates world average). All the metrics were calculated based on 88 papers which were available in Scopus (using SciVal software).

Overall research performance for 2021¹

Scholarly Output

88 67% Open Access

Citation Count

371

Authors

577

Citations per Publication

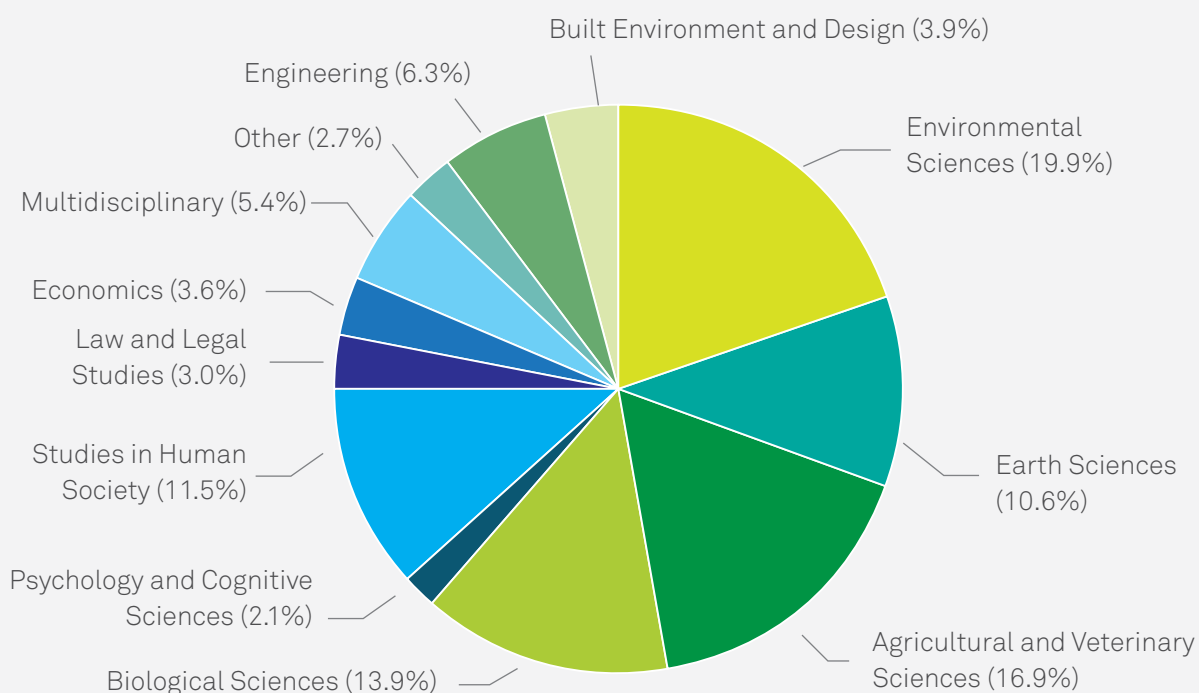
4.2

Field-Weighted Citation Impact

3.09

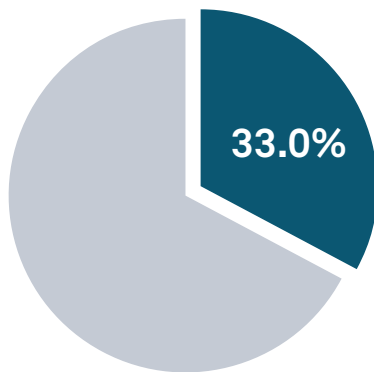
¹Entity: CMS Publications 2021
Year range: 2016-2022
Data source: Scopus, up to 16 Mar 2022

Publications by subject area



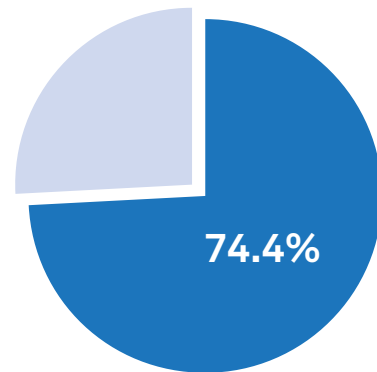
Outputs in Top Citation Percentiles

CMS Publications in top 10% most cited worldwide (field-weighted).
For comparison UTAS 16.5%, Australia 16.6%



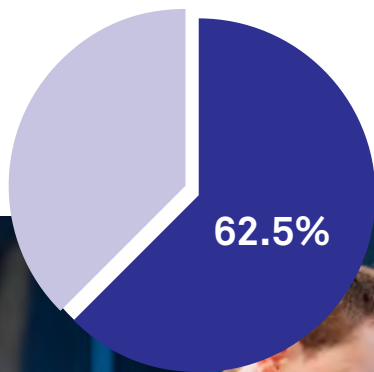
Publications in Top Journal Percentiles

CMS Publications in top 10% journals by CiteScore Percentile.
For comparison UTAS 41.0%, Australia 38.5%



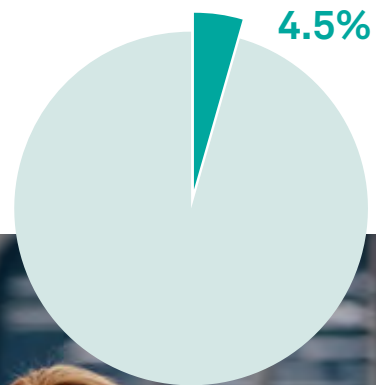
International Collaborations

CMS publications co-authored with institutions in other countries/regions.
For comparison UTAS 54.4%, Australia 55.9%



Academic-Corporate collaboration

Publications with both academic and corporate affiliations.
For comparison UTAS 3.2%, Australia 3.2%



Cayne Layton in the lab showing students seaweed he collected from nearby reefs.

PUBLICATIONS

Image credit: UTAS image library

PAPERS

1. **Alexander KA, Fleming A, Bax N, Garcia C, Jansen J, Maxwell KH, Melbourne-Thomas J, Mustonen T, Pecl GT, Shaw J, Syme G & Ogier E** 2021. Equity of our future oceans: practices and outcomes in marine science research. *Reviews in Fish Biology and Fisheries*, vol. 0123456789, <https://doi.org/10.1007/s11160-021-09661-z>.

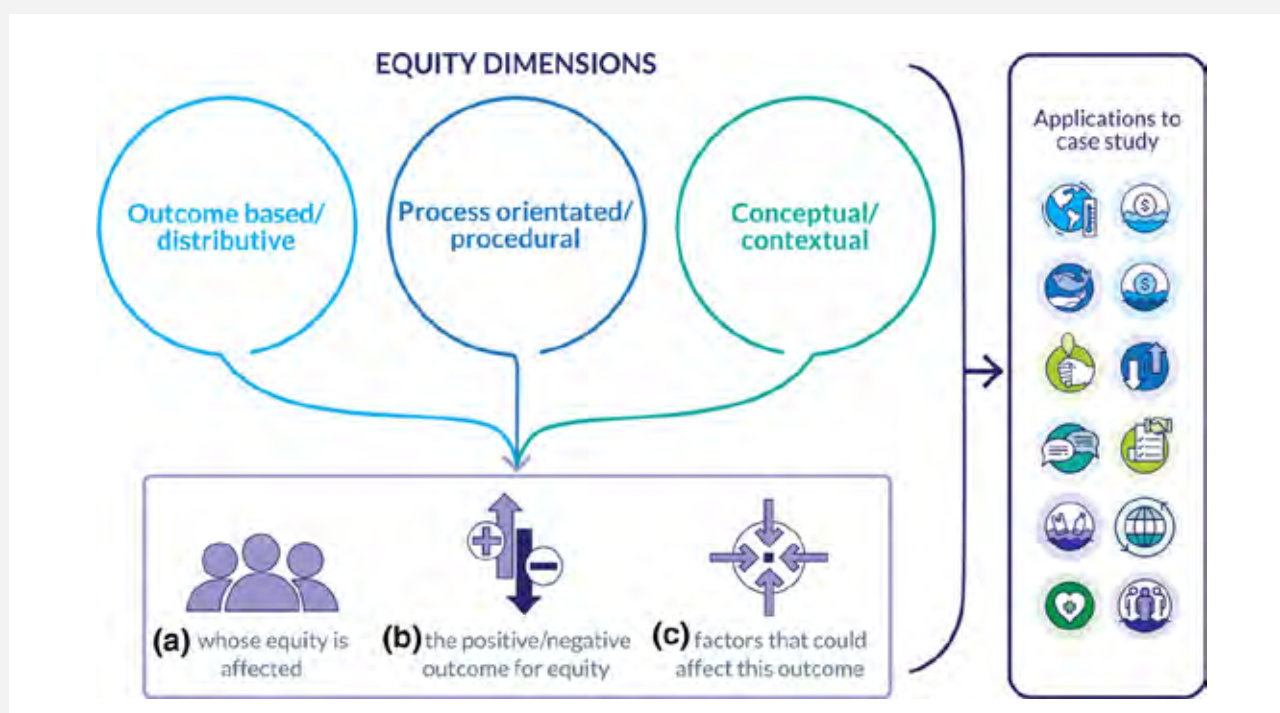


Figure 1 in Alexander et al. 2021 showing the analytical framework of the study, *Reviews in Fish Biology & Fisheries*.

2. **Bax N, Novaglio C, Maxwell KH, Meyers K, McCann J, Jennings S, Frusher S, Fulton EA, Nurse-Bray M, Fischer M, Anderson K, Layton C, Emad R, Alexander KA, Rousseau Y, Lunn Z & Carter CG** 2021. Ocean resource use: building the coastal blue economy, *Reviews in Fish Biology and Fisheries*, <https://link.springer.com/article/10.1007/s11160-021-09636-0>.

3. Belgrano A, **Novaglio C**, Svedäng H, Villasante S, Melián CJ, Blenckner T, Bergström U, Bryhn A, Bergström L, Bartolino V, Sköld M, Tomczak M, Wikström SA, Hansen AS, Linke S, Emmerson R, Morf A, & Tönnesson K 2021. Mapping and Evaluating Marine Protected Areas and Ecosystem Services: A Transdisciplinary Delphi Forecasting Process Framework. *Frontiers in Ecology and Evolution*, 9, <https://doi.org/10.3389/fevo.2021.652492>.
4. Bergstrom DM, Wienecke BC, van den Hoff J, Hughes L, Lindenmayer DB, Ainsworth TD, Baker CM, Bland L, Bowman DMJS, Brooks ST, Canadell JG, **Constable AJ**, Dafforn KA, Depledge MH, Dickson CR, Duke NC, Helmstedt KJ, Holz A, Johnson CR, Mcgeoch MA, **Melbourne-Thomas J**, Morgain R, Nicholson E, Prober SM, Raymond B, Ritchie EG, Robinson SA, Ruthrof KX, Setterfield SA, Sgrò CM, **Stark JS**, Travers T, **Trebilco R**, **Ward DFL**, Wardle GM, Williams KJ, Zylstra PJ & Shaw JD 2021. Combating ecosystem collapse from the tropics to the Antarctic. *Global Change Biology*, <https://onlinelibrary.wiley.com/doi/10.1111/gcb.15539>.
5. Blount C, **Komyakova V**, Barnes L, Smith ML, Zhang D, Reeds K, McPhee D, Taylor MD, Macbeth W, & Needham E 2021. Using ecological evidence to refine approaches to deploying offshore artificial reefs for recreational fisheries. *Bulletin of Marine Science*, 97(4), 665–698, <https://doi.org/10.5343/bms.2020.0059>.
6. Blythe J, Baird J, Bennett N, Dale G, **Nash KL**, Pickering G, & Wabnitz CCC 2021. Fostering ocean empathy through future scenarios. *People and Nature*, 3(6), 1284–1296, <https://doi.org/10.1002/pan3.10253>.
7. Brasier MJ, Barnes D, **Bax N**, Brandt A, Christianson AB, **Constable AJ**, Downey R, Figuerola B, Griffiths H, Gutt J, Lockhart S, Morley SA, Post AL, van de Putte A, Saeedi H, **Stark JS**, Sumner M, & Waller CL 2021. Responses of Southern Ocean Seafloor Habitats and Communities to Global and Local Drivers of Change. *Frontiers in Marine Science*, 8, <https://doi.org/10.3389/fmars.2021.622721>
8. **Britton F**, Thébaud O, Macher C, Gardner C, & **Little LR** 2021. Flexibility of joint production in mixed fisheries and implications for management. *ICES Journal of Marine Science*, 78(5), 1599–1613, <https://doi.org/10.1093/icesjms/fsab057>.

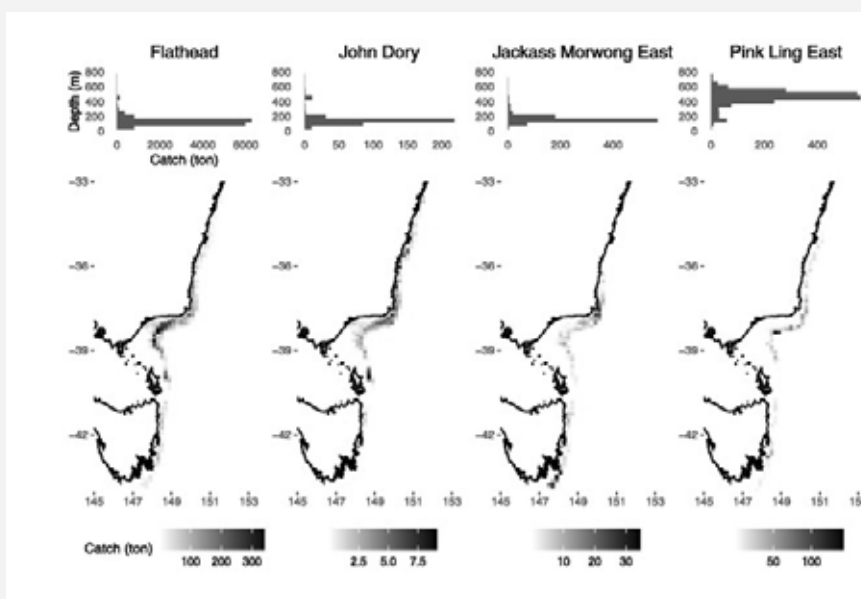
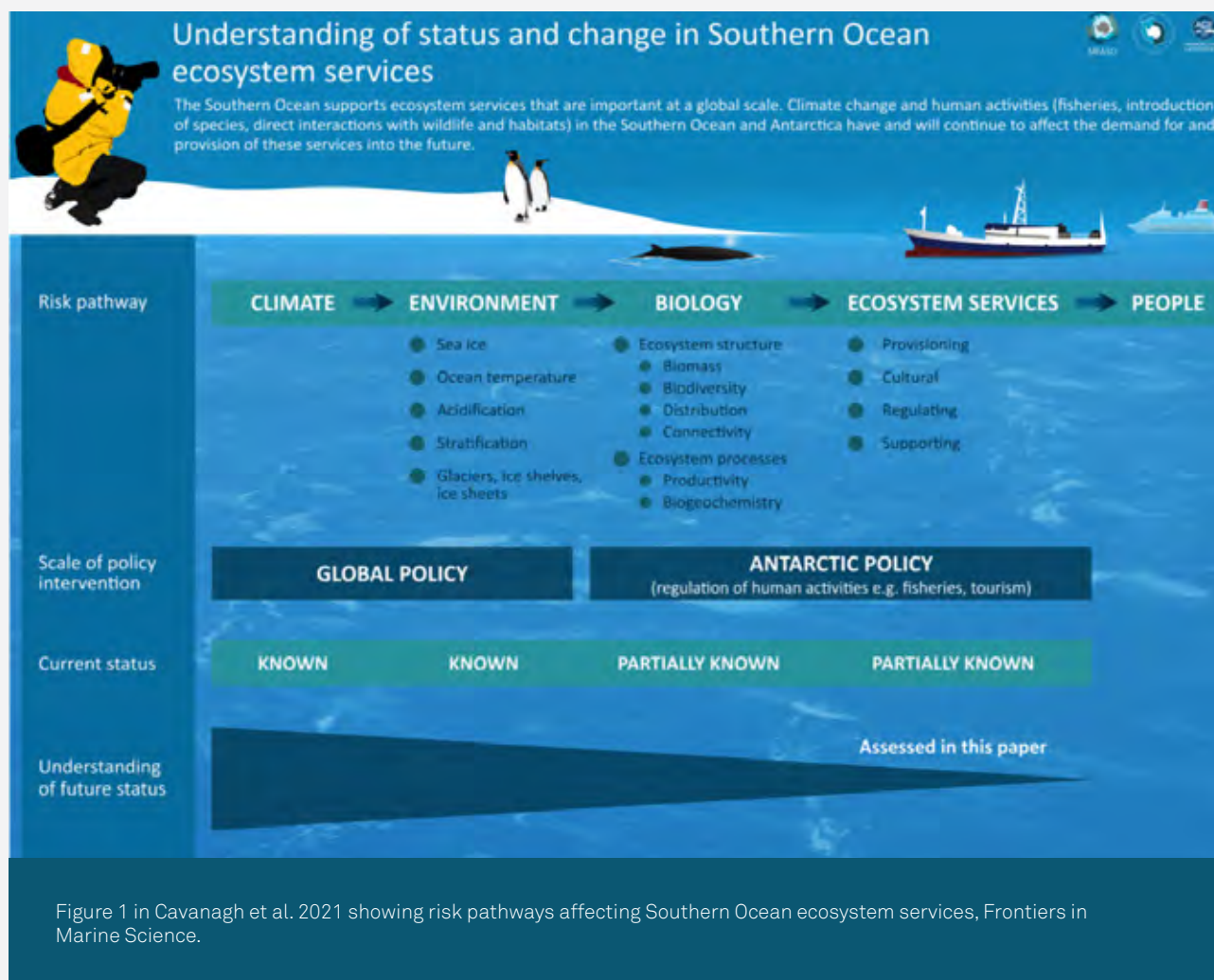


Figure 2 in Britton et al. 2021, showing the location and depth of the landed catch of the fish stocks involved in the study, *ICES Journal of Marine Science*.

9. Busilacchi S, Butler JRA, **van Putten I**, Cosijn M, Posu J, Fitriana R & Slamet A 2021. Why does illegal wildlife trade persist in spite of legal alternatives in transboundary regions ? *Human Dimensions of Wildlife*, <https://doi.org/10.1080/10871209.2021.1876963>.

10. Cavanagh RD, **Melbourne-Thomas J**, Grant SM, Barnes DKA, Hughes KA, Halfter S, Meredith MP, Murphy EJ, **Trebilco R**, & Hill SL 2021. Future Risk for Southern Ocean Ecosystem Services Under Climate Change. *Frontiers in Marine Science*, 7, <https://doi.org/10.3389/fmars.2020.615214>.



11. Cavanagh RD, Trathan PN, Hill SL, **Melbourne-Thomas J**, Meredith MP, Hollyman P, Krafft BA, MC Muelbert M, Murphy EJ, Sommerkorn M, Turner J, & Grant SM 2021. Utilising IPCC assessments to support the ecosystem approach to fisheries management within a warming Southern Ocean. *Marine Policy*, 131, 104589, <https://doi.org/10.1016/j.marpol.2021.104589>.
12. Chambers JM, Wyborn C, Ryan ME, Reid RS, Riechers M, Serban A, Bennett NJ, **Cvitanovic C**, Fernández-Giménez ME, Galvin KA, Goldstein BE, Klenk NL, Tengö M, Brennan R, Cockburn JJ, Hill R, Munera C, Nel JL, Österblom H, Bednarek AT, Bennett EM, Brandeis A, Charli-Joseph L, Chatterton P, Curran K, Dumrongrojwatthana P, Durán AP, Fada SJ, Gerber JD, Green JMH, Guerrero AM, Haller T, Horcea-Milcu AI, Leimona B, Montana J, Rondeau R, Spierenburg M, Steyaert P, Zaehring JG, Gruby R, Hutton J & Pickering T 2021. Six modes of co-production for sustainability. *Nature Sustainability*, <https://www.nature.com/articles/s41893-021-00755-x>.
13. **Condie SA & Condie CM** 2021. Stochastic events can explain sustained clustering and polarisation of opinions in social networks. *Scientific Reports*, 11(1): 1–10, <https://doi.org/10.1038/s41598-020-80353-7>.

14. **Condie SA**, Anthony KRN, Babcock RC, Baird ME, Beeden R, Fletcher CS, Gorton R, Harrison D, **Hobday AJ**, **Plagányi ÉE** & Westcott DA 2021. Large-scale interventions may delay decline of the Great Barrier Reef. *Royal Society Open Science*, 8(201296), <https://doi.org/10.1098/rsos.201296>.
15. **Cottrell RS**, Metian M, Froehlich HE, **Blanchard JL**, Jacobsen NS, McIntyre PB, **Nash KL** & Williams DR 2021. Opinion: Time to rethink trophic levels in aquaculture policy. *Reviews in Aquaculture*, <https://onlinelibrary.wiley.com/doi/10.1111/raq.12535>.
16. **Cullen-Knox C**, **Fleming A**, **Lester L** & **Ogier E** 2021. Perceiving Environmental Science, Risk and Industry Regulation in the Mediatized Vicious Cycles of the Tasmanian Salmon Aquaculture Industry. *Social Epistemology*, 35(5), 441–460, <https://doi.org/10.1080/02691728.2021.1913661>.
17. **Cvitanovic C**, **Mackay M**, **Kelly R**, Wilson SK, Waples K, **Nash KL**, **van Putten EI**, Field S, Botterill-James T, Austin BJ, Beckley LE, **Boschetti F**, Depczynski M, Dobbs RJ, Evans RD, Feng M, Goater RK, Halford AR, Kendrick A, ... Mathews D 2021. Thirty critical research needs for managing an ecologically and culturally unique remote marine environment: The Kimberley region of Western Australia. *Ocean & Coastal Management*, 212, 105771, <https://doi.org/10.1016/j.ocecoaman.2021.105771>
18. **Cvitanovic C**, **Mackay M**, **Shellock RJ**, **van Putten EI**, **Karcher DB**, & Dickey-Collas M 2021. Understanding and evidencing a broader range of ‘successes’ that can occur at the interface of marine science and policy. *Marine Policy*, 134, 104802, <https://doi.org/10.1016/j.marpol.2021.104802>.
19. **Cvitanovic C**, **Shellock RJ**, **Mackay M**, **van Putten EI**, **Karcher DB**, Dickey-Collas M & Ballesteros M 2021. Strategies for building and managing ‘trust’ to enable knowledge exchange at the interface of environmental science and policy. *Environmental Science and Policy*, 123, 179–189. <https://doi.org/10.1016/j.envsci.2021.05.020>



Figure 1 in Cvitanovic et al. 2021 showing the fourteen strategies identified for building trust at the interface of environmental science and policy, *Environmental Science and Policy*.

20. Cvitanovic C, Wyborn C, Glenn E, Kelly R, Louder E, van Putten EI & Bednarek A 2021. Ten Considerations for Research Funders Seeking to Enhance Knowledge Exchange and the Impact of Marine Science on Policy and Practice. *Frontiers in Marine Science*, 8, August, <https://doi.org/10.3389/fmars.2021.704495>.
21. Edwards P, Fleming A & Kelly R 2021. Responsible research and innovation and social licence to operate: aligning concepts for advancing marine innovation and development governance. *Current Opinion in Environmental Sustainability*, 49: 12–17, <https://doi.org/10.1016/j.cosust.2020.11.003>.
22. Farmery A, Alexander K, Anderson K, Blanchard J, Carter C, Evans K, Fischer M, Fleming A, Frusher S, Fulton EA, Haas B, MacLeod C, Murray L, Nash K, Pecl G, Rousseau Y, Trebilco R, van Putten I, Mauli S, Dutra L, Greeno D, Kaltavara J, Watson R & Nowak B 2021. Food for all: designing sustainable and secure future seafood systems. *Reviews in Fish Biology and Fisheries*, <https://doi.org/10.1007/s11160-021-09663-x>.



Graphical abstract 'Food for all' in Farmery et al. 2021, *Reviews in Fish Biology & Fisheries*.

23. Fischer M, Maxwell K, Nuunoq, Pedersen H, Greeno D, Jingwas N, Graham Blair J, Hugu S, Mustonen T, Murtomäki E & Mustonen K 2021. Empowering her guardians to nurture our Ocean's future. *Reviews in Fish Biology and Fisheries*, <https://doi.org/10.1007/s11160-021-09679-3>.



Figure 3 in Fischer et al. 2021 depicting the Indigenous Worldviews of a Sustainable Future, *Reviews in Fish Biology and Fisheries*. Art credit: Dean Greeno

Altmetric calculates a score based on the online attention an article receives. Fischer et al 2021 is in the top 3% percentile of all tracked articles of a similar age in all journals and ranked first in the *Journal of Fish Biology & Fisheries*.

24. Fogarty HE, Cvitanovic C, Hobday AJ & Pecl GT 2021. Stakeholder perceptions on actions for marine fisheries adaptation to climate change. *Marine and Freshwater Research*, <https://doi.org/10.1071/MF21055>.
25. Franco-Meléndez M, Tam J, van Putten I, & Cubillos LA 2021. Integrating human and ecological dimensions: The importance of stakeholders' perceptions and participation on the performance of fisheries co-management in Chile. *PLOS ONE*, 16(8), e0254727, <https://doi.org/10.1371/journal.pone.0254727>
26. Froehlich HE, Gentry RR, Lester SE, Cottrell RS, Fay G, Branch TA, Gephart JA, White ER & Baum JK 2021. Securing a sustainable future for US seafood in the wake of a global crisis. *Marine Policy*, 124, July 2020, 104328, <https://doi.org/10.1016/j.marpol.2020.104328>.

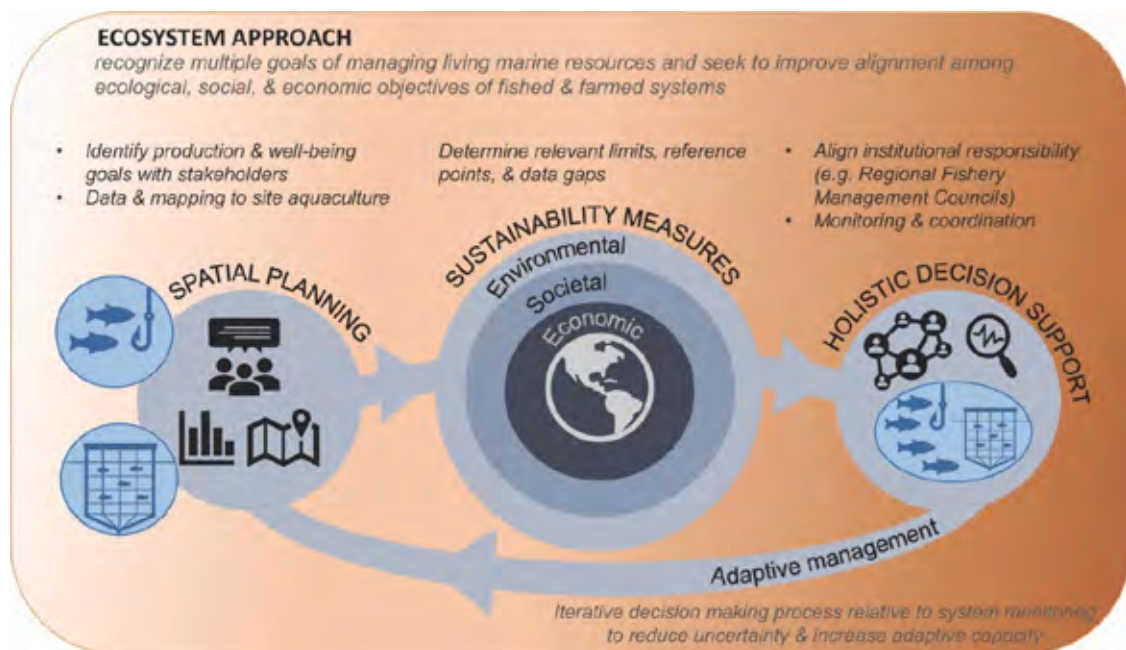


Figure 2 in Froehlich et al 2021 showing their ecosystem-based approach to integrate aquaculture and fisheries management, *Marine Policy*.

27. Frohlich MF, Smith TF, Fidelman P, Baldwin C, Jacobson C & Carter RW (Bill) 2021. Legal barriers to adaptive coastal management at a coastal erosion hotspot in Florianopolis, Brazil. *Marine Policy*, 127, February, 104436, <https://doi.org/10.1016/j.marpol.2021.104436>.
28. Fudge M, Alexander K, Ogier E, Leith P, & Haward M 2021. A critique of the participation norm in marine governance: Bringing legitimacy into the frame. *Environmental Science & Policy*, 126, 31–38, <https://doi.org/10.1016/j.envsci.2021.09.015>.
29. Fudge M, Ogier E & Alexander KA 2021. Emerging functions of the wellbeing concept in regional development scholarship: A review. *Environmental Science and Policy*, 115, November 2020, 143–150, <https://doi.org/10.1016/j.envsci.2020.10.005>.
30. Fulton EA 2021. Opportunities to improve ecosystem-based fisheries management by recognizing and overcoming path dependency and cognitive bias. *Fish and Fisheries*, 22(2):428–448, <https://doi.org/10.1111/faf.12537>.

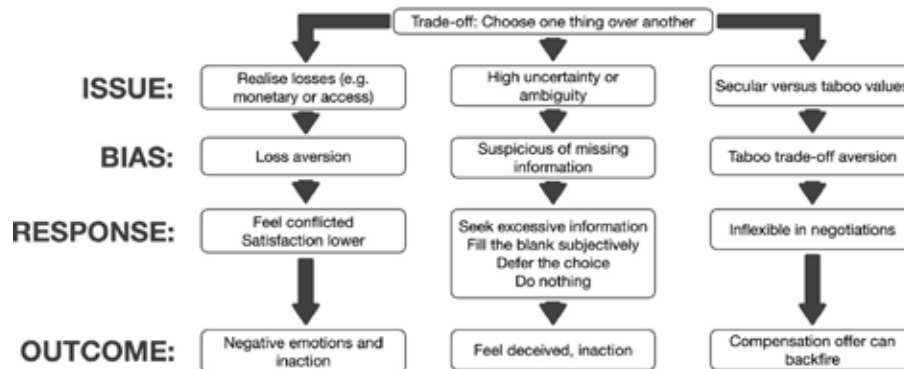


Figure 2 in Fulton 2021 showing examples of how trade-offs can trigger cognitive responses that restrain change, Fish & Fisheries.

31. Gervais CR, Champion C & Pecl GT 2021. Species on the move around the Australian coastline: a continental scale review of climate driven species redistribution in marine systems. *Global Change Biology*, <https://onlinelibrary.wiley.com/doi/full/10.1111/gcb.15634>.

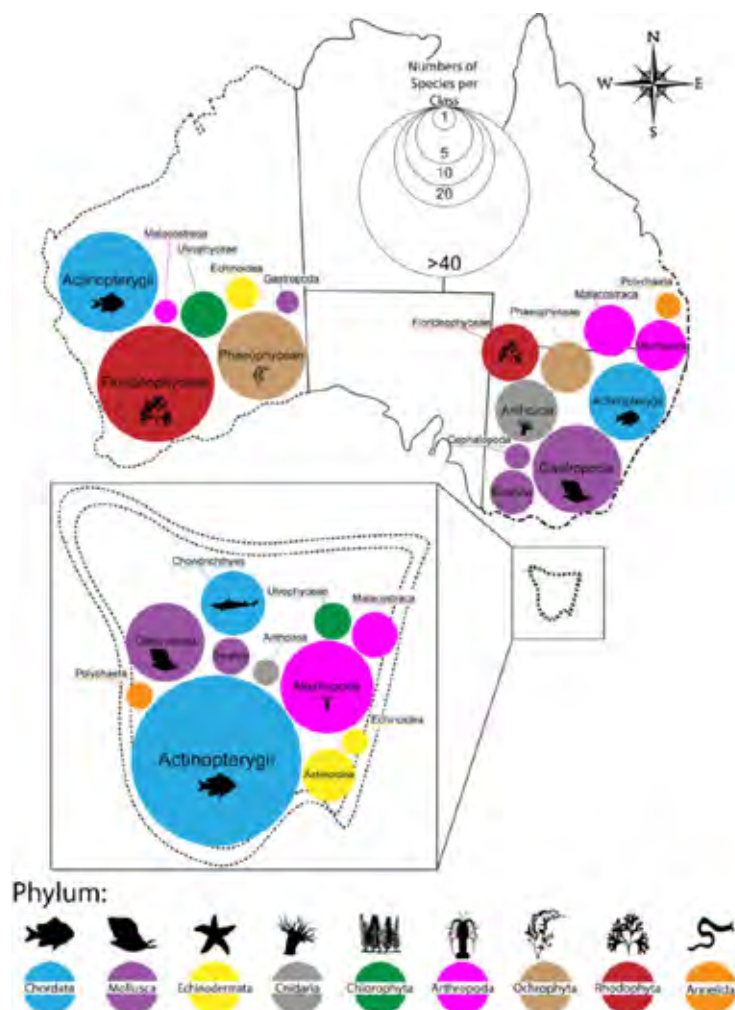
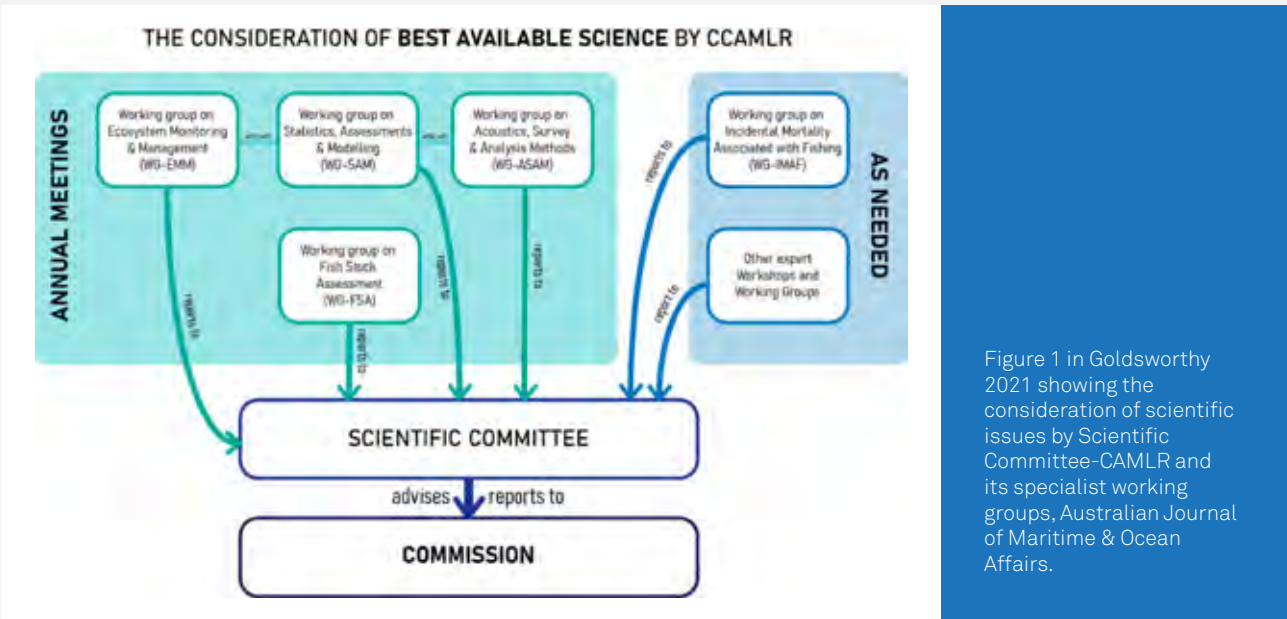


Figure 3 in Gervais et al. 2021 showing the species representation and location of observed range shifting species across Australia, *Global Change Biology*.

32. Goldsworthy L & Brennan E 2021. Climate change in the Southern Ocean: Is the Commission for the Conservation of Antarctic Marine Living Resources doing enough? *Marine Policy*, 130, February, 104549, <https://doi.org/10.1016/j.marpol.2021.104549>.
33. Goldsworthy LD 2021. 'Best available science' approach to management decisions by the Commission for the Conservation of Antarctic Living Resources: consistent or selective? *Australian Journal of Maritime & Ocean Affairs*, 1–23, <https://doi.org/10.1080/18366503.2021.1980264>.



34. Grover IM, Tancock MS, **Tinch DR** & **Hatton MacDonald D** 2021. Investigating public preferences for the management of native and invasive species in the context of kelp restoration. *Marine Policy*, 132, June, 104680, <https://doi.org/10.1016/j.marpol.2021.104680>.

	OPTION A	OPTION B	CURRENT SITUATION
Predator control Long Spined Sea Urchins	Subsidise Sea Urchin Farms	Reintroduce Rock Lobsters	Do nothing
Protected / reserved area of potential Rock Lobster habitat	No change to Marine Reserves	15% increase in Marine Reserve area	No change to Marine Reserves
Provision of new kelp habitat	No new habitat	Artificial kelp beds	No new habitat
Additional Household Tax yearly for 5 years	\$30	\$130	\$0

Option A

Option B

Current Situation

Figure 2 in Grover et al. 2021 showing an example of a choice set included in the survey, Marine Policy.

35. Haas B, Mackay M, Novaglio C, Fullbrook L, Murunga M, Sbrocchi C, McDonald J, McCormack PC, Alexander K, Fudge M, Goldsworthy L, Boschetti F, Dutton I, Dutra LXC, McGee J, Rousseau Y, Spain E, Stephenson RL, Vince J, Wilcox C & Haward M 2021. The future of ocean governance. *Reviews in Fish Biology and Fisheries*, 0123456789, <https://doi.org/10.1007/s11160-020-09631-x>.
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Stakeholder influence and relationships inform engagement strategies in marine conservation

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PhD student Sierra Ison received the IMAS 2021 Best Student Publications award for this publication.

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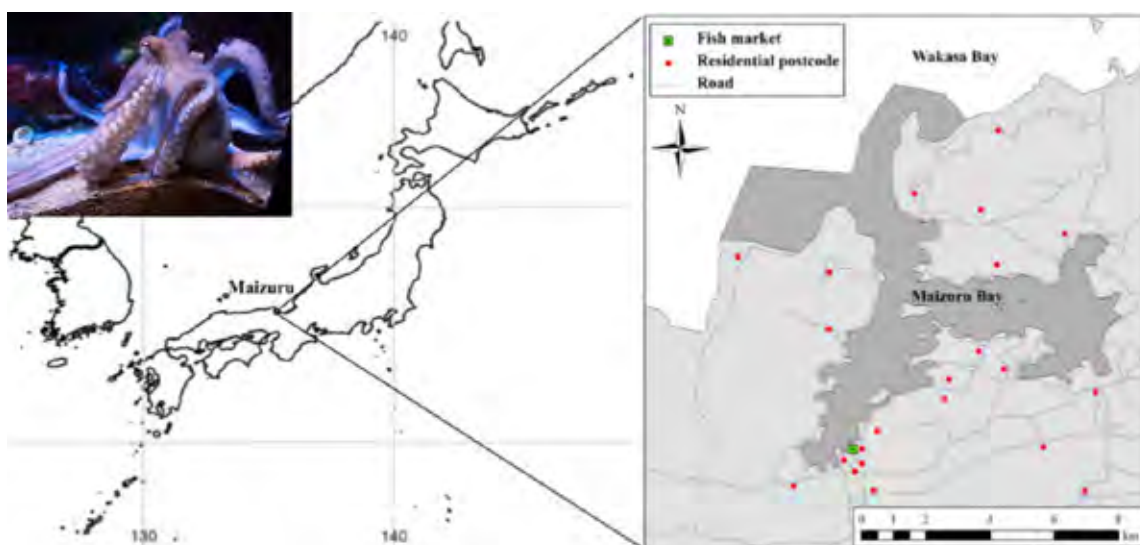


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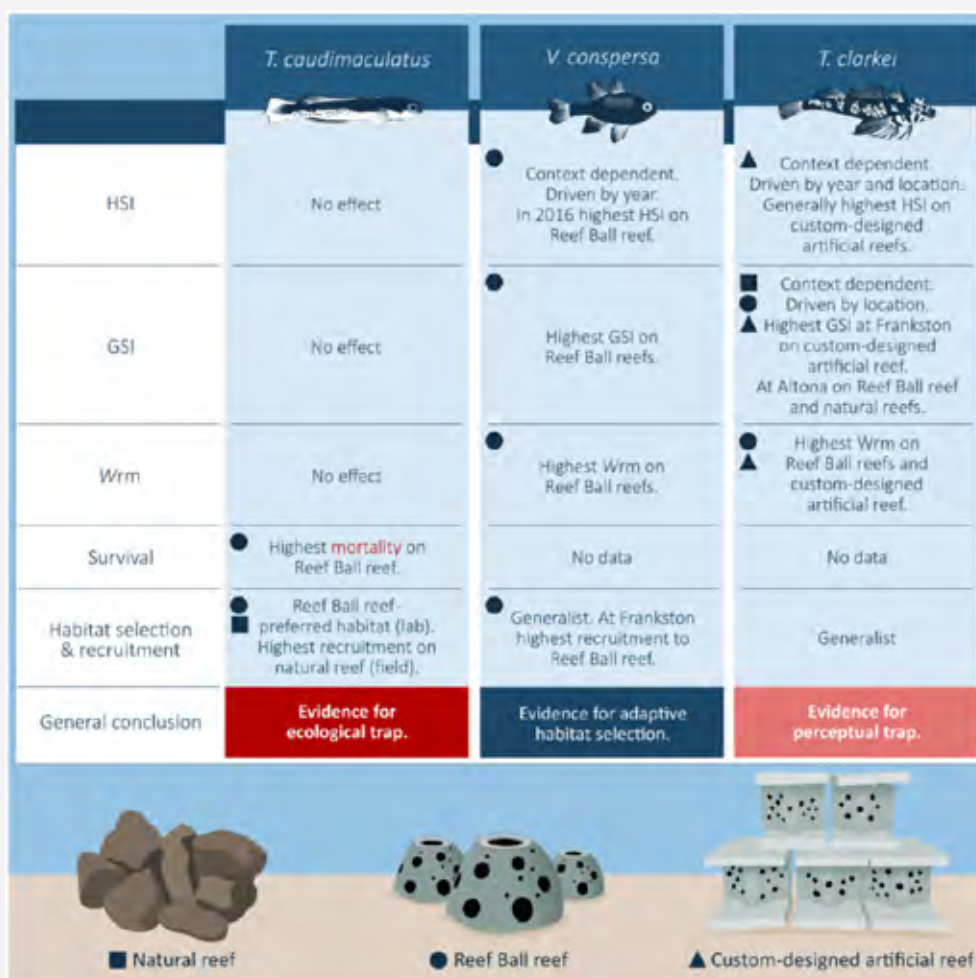


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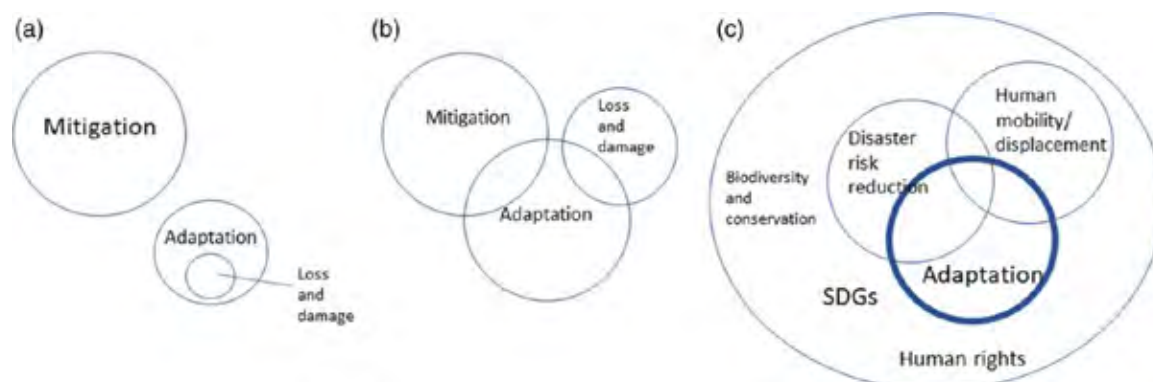


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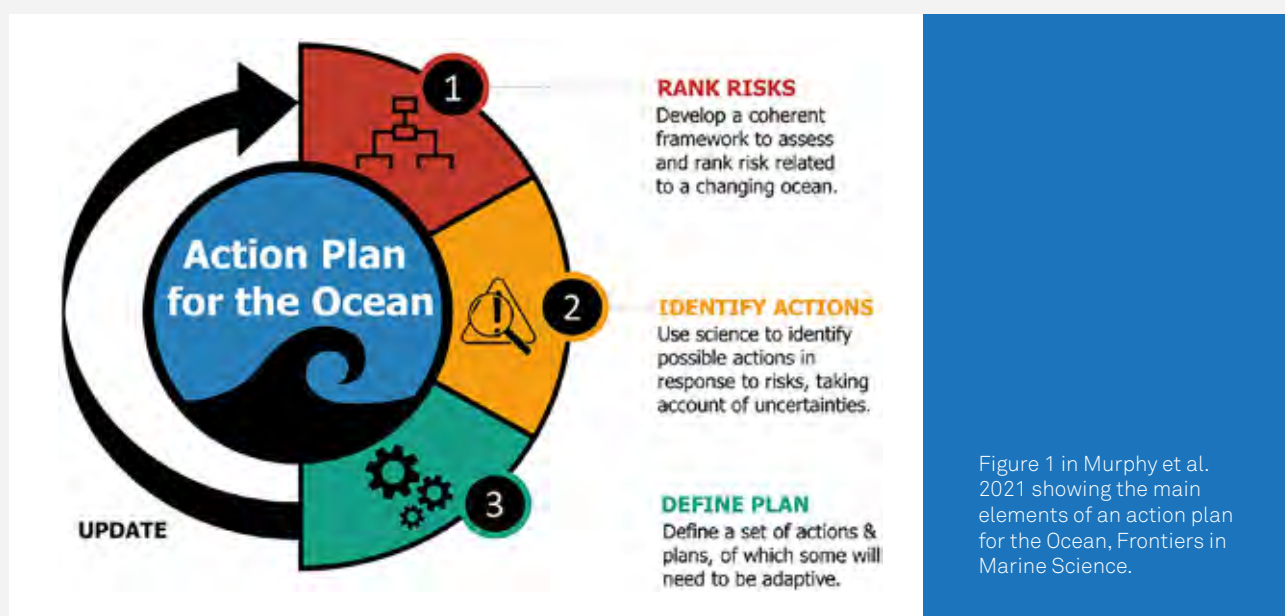


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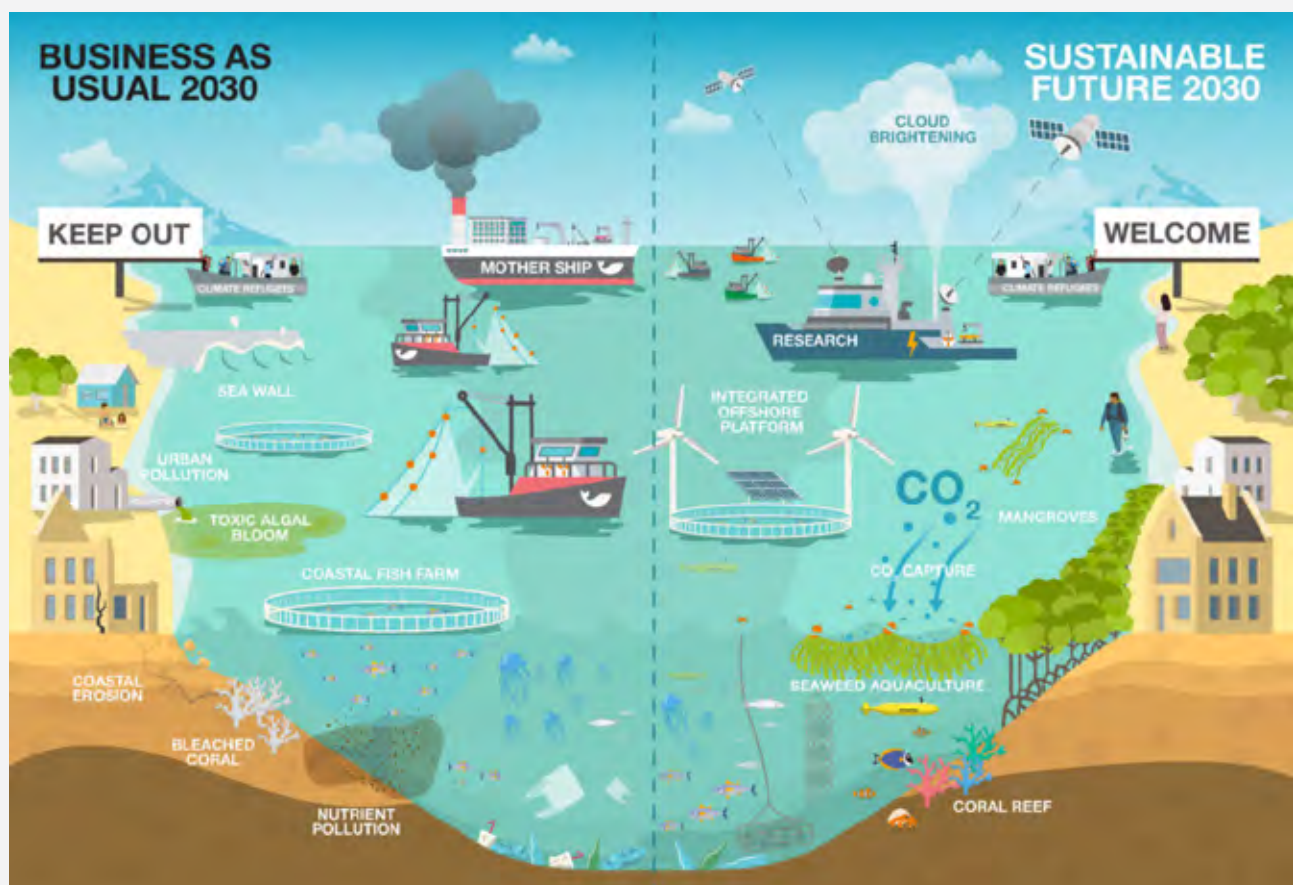


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5. **Fulton B, Evans K, Fidelman P, Hobday A & Pecl G** contributed to 'Future Earth Australia 2021. Sustainable oceans and coasts national strategy 2021-2030'. Australian Academy of Science, Canberra, <https://www.futureearth.org.au/publications/sustainable-oceans-and-coasts-strategy>
6. **Green M**, Craw P, **Hardesty BD**, Deagle B, **Wilcox C**. Using eDNA to reconstruct logbook information and improve estimates of by-catch. Paper submitted to the IOTC Working Party for Ecosystems and By-catch. IOTC-2021-WPEB17(AS)-INF09
7. **Hardesty BD, Wilcox C**, Ford J & **Mackay M**. Crimes at sea: when we frame illegal fishers as human and drug smugglers, everyone loses. The Conversation, 20 January 2021, <https://theconversation.com/crimes-at-sea-when-we-frame-illegal-fishers-as-human-and-drug-smugglers-everyone-loses-152231>
8. **Kelly R**, Singh PA, Cedras R, Dinoi A, Giddens J, Giron-Nava A, Mason C, Ortunio Crespo G, & **Puskic PS**. A new generation of ocean leaders. The Conversation, 27 April 2021, <https://theconversation.com/a-new-generation-of-ocean-leaders-158321>
9. **Layton C** & Coleman M. Can selective breeding of 'super kelp' save our cold water reefs from hotter seas? The Conversation, 3 November 2021, https://theconversation.com/can-selective-breeding-of-super-kelp-save-our-cold-water-reefs-from-hotter-seas-170271?utm_source=twitter&utm_medium=bylinetwitterbutton
10. **Leane E & Marx K**. Claiming our role in Antarctica, The Mercury, NewsCorp Australia, Hobart, Tasmania, pp. 22-23, 1 July 2021
11. **Nash K**. Future Seas. Cosmos Magazine, 3 December 2021, <https://cosmosmagazine.com/earth/oceans/future-seas-ocean-socioecology/>
12. **Pecl G** contributed to the Forward section of the ZSL Report Time to integrate Global Climate Change and Biodiversity science-policy agendas, led by Prof Nathalie Pettorelli, https://issuu.com/zoologicalsocietyoflondon/docs/zsl_report_time_to_integrate
13. **Puskic P**. Polar Plastics, ESA bulleting special issue on Polar and Alpine environments, <https://www.ecolosc.org.au/news/polar-plastics/>
14. **Wilson E**, Masters thesis: An exploration into the drivers of sperm whale distribution on the Kerguelen Plateau, supervised by **Stuart Corney**, Paul Tixier and Roshni Subramaniam.

CONFERENCES & PUBLIC PRESENTATIONS

CONFERENCE CONVENING & SYMPOSIA

1. **Evans K & Pecl G**, Convenors: Our Future Ocean Symposium, Australian Marine Sciences Association Conference, June 2021.
2. **Evans K, Komyakova V, McDonald J**, Moderators: Ocean solutions: what is needed for success in Tasmania? Ocean Visions Summit, May 2021.
3. **Evans K**, Belgrano A, Selim S, vanderZwaag D. Co-chairs: IMBIZO 6 workshop 3: ocean governance and climate adaptation: comparing responses, charting future courses. October 2021.
4. **Fudge M, McDonald J & Pecl G**, Moderators: Human Wellbeing in a conflicted world, Ocean Visions Summit, May 2021.
5. **Fudge M**, Chair: Connecting healthy oceans to human wellbeing: Interweaving indigenous knowledge and ocean sciences to improve decision-making, stakeholder engagement and human wellbeing. Ocean Visions Summit, May 2021.

Connecting healthy oceans to human wellbeing: Interweaving indigenous knowledge and ocean sciences to improve decision-making, stakeholder engagement and human wellbeing



Heini Unwin
Cawthron Institute
Panelist



Nomvula Mpungose
University of Cape
Town
Chair



Maree Fudge
University of
Tasmania
Chair

[VIEW ECOP SESSION 3](#)[BROWSE PROGRAM](#)

6. **Fudge M**, Early Career Ocean Professional (ECOP) Panel Healthy Oceans - Healthy People May 2021.
7. **Komyakova V**, Chair: Green marine engineering: lessons from nature in the design of artificial infrastructure. Ocean Visions Summit, May 2021.

Theme 2:

Green marine engineering: lessons from nature in the design of artificial infrastructure



Ido Sella
ECONcrete Tech LTD
Panelist



Valeriya Komyakova
Institute of Marine &
Antarctic Studies & Center
for Marine Socioecology
Chair

8. **Melbourne-Thomas J** (convenor) & **Lea M-A** (chair) session: A Changing Southern Ocean Interdisciplinary Research for Responding to Antarctic Change, Australian Marine Sciences Association Conference, June 2021.
9. **Micheli F** & **Pecl G**, Moderators and Hosts: Healthy Ocean – Healthy People session. Ocean Visions Summit, May 2021.

SESSION 3A: Healthy Ocean – Healthy People

KEYNOTES and Q&A

Dimensions of Healthy Ocean & People



Susanne Sokolow
Stanford University
Planetary Health



Shakuntala Thilsted
WorldFish
Role of Aquatic Foods



Lara Fleming
University of Exeter
Ocean & Human Health



Drew Horvath
Cornell University
Marine Diseases



Amy Wright
Florida A&M Univ.
Natural Products



Kris Primocio
International Surf
Therapy Organization
*Mental Health and
Well-being*



Kirsty Nash
University of Tasmania
*Roadmaps for Healthy
Ocean & People*



Fiorenza Micheli
Stanford University



Gretta Pecl
University of Tasmania

PANEL

Pathways and Partnerships for Action



Flower Msuya
University of Dar
es Salaam



Adam Miller
Planet Indonesia



Terrance Forrester
University of the
West Indies



Betsy Peabody
Puget Sound
Restoration Fund



Marek Fudge
University of
Tasmania



Huterea Barclay-Kerr
Te Toki Voyaging
Trust

May 19, 2:30 PM - 5:15 PM PDT

[VIEW SESSION](#)
[BROWSE PROGRAM](#)

10. **Wilcox C**, Convenor: Understanding, Measuring and Addressing Illegal Fishing, World Fisheries Congress, September 2021.
11. Zivian A, Satterthwaite E, **Evans K**. Co-chairs: A Global Ecosystem for Ocean Solutions, Ocean Visions Summit, May 2021.

PLENARIES AND KEYNOTES

1. **Exel M**, Innovative approaches for sustainable seafood production: why do things differently? World Fisheries Congress, 20-24 September 2021, Virtual, <https://vimeo.com/645868122/e033a7c543>
2. **Evans K**, Multidisciplinary and multi-stakeholder collaborations for designing and delivering ocean solutions. The Fifth Xiamen Symposium on Marine Environmental Sciences, January 2021.
3. **Fulton B**, Managing for status does not deliver structure, World Fisheries Congress, 20-24 September 2021, Virtual, <https://vimeo.com/645862387/b3015cd7d0>
4. **Fulton B**, Fisheries Society of the British Isles Annual Meeting, July 2021.
5. **Fulton B**, Active Integrated Matter 21, June 2021.
6. **Fulton B**, Ocean Visions Summit: Ocean Solutions in Tasmania Event, May 2021.
7. **Green M**, Keynote- Trends in stock structure analyses for sharks and rays. World Fisheries Congress September 2021.
8. **Melbourne-Thomas J**, Impacts of climate change on marine ecosystems. Parks Australia Science Forum, 2-9 November 2021.
9. **Nash KL**, Keynote: Oceans & Society: roadmaps to a healthy future. Ocean Visions Summit May 2021.
10. **Nowak B**. Fish, parasites and feeding the world. Agriculture and Food Security Conference Abu Dhabi 24 November 2021, virtual.
11. **van Putten I**, Barz F & **Mackay M**. Keynote discussion about fishers heterogeneity. ICES Annual Science Conference, September 2021.



Martin Exel presenting at the World Fisheries Conference.

INVITED SPEAKERS

1. **Bax N**, Theme lead: Blue carbon - Sub-Antarctic Connectivity and Climate Change Symposium, October 2021, Wilton Park, UK.
2. **Evans K**, The United Nations Decade of Ocean Science for Sustainable Development (2021-2030). Inaugural AUS-US Ocean Exploration workshop, December 2021.
3. **Evans K**, Panellist: Fisheries monitoring in support of sustainable fisheries, World Fisheries Congress, September 2021.
4. **Evans K**, Inspiring NSW Lightning Lunch STEM networking event on the Sustainable Development Goals, July 2021.
5. **Evans K**, Panellist: Melbourne University Sustainable Society Institute Our Future Ocean webinar, June 2021.
6. **Evans K**, Panellist: Ocean Visions Talk series: Ocean Solutions, April 2021.
7. **Evans K**, Panellist: United Nations – Nippon Foundation 2021 online series: Experiences in strengthening the science-policy interface, April 2021.
8. **Hardesty D**, Plastic waste reduction in Viet Nam: Identification of suitable methodologies and metrics for monitoring national targets, January 2021.
9. **Hardesty D**, Australian-Indonesia Plastics Innovation Symposium, March 2021

Theme 3:
Integrating political sciences and ocean governance to support marine circular economy



Marcus Howard Institute
for Marine and
Antarctic Studies
Panelist



Paulo Lima Veiga
Minister of Maritime
Economy of Cape Verde
Panelist



**Laura Gómez
Navarro**
Utrecht University
Chair

VIEW ECOP SESSION 4

BROWSE PROGRAM

10. **Howard M**, Panellist: Integrating political sciences and ocean governance to support marine circular economy. Ocean Visions Summit, May 2021.
11. Johannes G, **Exel M**, **Ogier E**, Dutton I, Verges A, panellists: Ocean Solutions: What is needed for success in Tasmania? Ocean Visions Summit, May 2021.

12. **McCormack P**, Expert presentation about drafting submissions to promote marine and terrestrial conservation, for the Student Environment and Animal Law Society (SEALS), Hobart, 20 March 2021.
13. **Melbourne-Thomas J**, Engagement, diversity and interdisciplinarity to tackle future challenges. Royal Society of Tasmania Invited Presentation. 7 March 20.
14. **Mynott S**, Using ecosystem models to support emergency response planning. First Nations Fisheries Council Marine Knowledge Sharing Forum, May 2021.
15. **Nash K**, Creating a vision to guide development of a sustainable ocean future: the Future Seas 2030 initiative. Webinar organised by the United Nations Department for Economic and Social Affairs on the Community of Ocean Action on Sustainable Blue Economy, 14 July 2021.
16. **Pecl G**, Panellist at the roundtable discussion session on “Marine environment and marine ecology protection, marine sustainable development”, at the China-Japan High-level Experts Symposium on Marine Environment, 2 July 2021, online. Attended by 10,000 people.
17. **Wilcox C**, Australian Conservation Society, Sydney Australia.
18. **Wilcox C**, World Fisheries Congress, Adelaide, Australia.
19. **Wilcox C**, Indo-Pacific Maritime Security Exchange, Virtual.
20. **Wilcox C**, Combatting illegal, unreported and unregulated fishing and especially through the application of the Port State Measures Agreement in the IORA region. IORA Secretariat, Virtual.
21. **Wilcox C**, APEC Oceans and Fisheries Working Group, Virtual.
22. **Wilcox C**, Seafood and Fisheries Emerging Technologies, WWF and EDF, Virtual.

GENERAL PRESENTATIONS

1. **Boothroyd A**, Building comprehensive, adequate and representative MPA networks: a case study from the Southern Ocean, International Congress for Conservation Biology, 15 December 2021.
2. **Constable A**, ‘Water story on Lunartime’. Meeting of the Waters’ conference.
3. **Evans K**, Grewe P, Foster S, Gosselin T, Gunasekera R, Fitchett M, Holdsworth J, Lam T, Lansdell M, Lutcavage M, Rounsard F, Ruchimat T, Sarau S, Michman M, Connectivity of tuna and billfish species targeted by the Australian Eastern Tuna and Billfish Fishery with the broader Western Pacific Ocean, World Fisheries Congress, September 2021.
4. **Evans K** & Davies T, Overview of the Global Ocean Observing System, the Biology and Ecosystems Panel and the Panel’s Essential Ocean Variables, World Seabird Congress, October 2021.
5. **Evans K** & **Kelly R**, Connected to the oceans: supporting ocean literacy and public engagement. Australian Marine Sciences Association Conference, June 2021.
6. **Fudge M**, Critique of participation norm in marine governance, MARE People and the Sea Conference, June 2021.
7. **Fulton EA**, Fulton DJ, **Melbourne-Thomas J**, A Picture is Worth a Thousand Words, World Fisheries Congress, September 2021.
8. **Fulton EA**, Bustamante R, Bravo F, Dambacher J, **Evans K**, Dunstan P, Woolley S, How system approaches can highlight non-linearities associated with cumulative effects, AMSA 2021, May 2021.

9. **Fulton EA**, Showcasing some multispecies assessment options, APFIC meeting, March 2021.
10. **Green M**, Using environmental DNA to reconstruct catch composition for fisheries vessels. World Fisheries Congress, September 2021.
11. **Greeno D**, Lutruwita Traditional Practice, Maritime Archaeology, Climate effect and how they are connected, Climate Change and Maritime Heritage-Interdisciplinary perspectives Conference, April 2021.
12. Govind PJ, Lim M, **McCormack PC**, Climate refugia and futures approaches to law: protecting nature in a changing world, Global Dialogue on Biodiversity Law and Governance, 7 July 2021.
13. Hingley R, Nielsen H, **Marx K**, Nolasco R, The Accessibility of Antarctic Cultural Heritage: Challenges and Opportunities, SCAR SC-HASS Conference, 19 November 2021.
14. **Jayakody DY**, 'An Approach to Assessing Place Attachment Towards Improving Place-Based Biological Conservation and Environmental Planning Efforts' at the Hawai'i Conservation Conference, 28 July 2021.
15. **Jayakody DY**, 'Spatial Assessment of Place Attachment to Improve Place-Based Conservation and Environmental Planning' at the Ecological Society of Australia Conference, 23 November 2021.
16. **Jayakody DY**, 'Spatial Assessment of Place Attachment to Improve Place-Based Conservation and Environmental Planning' at the International Congress for Conservation Biology, 15 December 2021.



Key Findings

- Special place points had a similar distribution to Aesthetic, Recreational, Intrinsic and Spiritual values.
- Special places and the mentioned associated values were placed primarily within Reserves (>50% of total points per value).
- Proximity to the coastline and presence of bush tracks predicted the presence of these values and special places.

PhD student Dimuthu Jayakody presentation at the 2021 International Congress for Conservation Biology.

17. **Karcher DB, Cvitanovic C**, Colvin R, **van Putten I**, Reed M. Connecting science with policy and practice – Learning from failure and success, 14th International Coral Reef Symposium Virtual, Bremen, 18-23 July 2021.
18. **Karcher DB, Cvitanovic C**, Colvin R, **van Putten I**, Reed M. The meaning of success at the science-policy interface and how to achieve it, ICYMARE 2021 Virtual, 21-24 September 2021.
19. Kong TM, **Melbourne-Thomas J**, Jordan R, Cosijin M, Schuyler Q, Butler J, Kim MK, **Mynott S**, Harkness P, Knowledge brokering in transdisciplinary research to manage wicked problems. International Transdisciplinarity Conference, September, 2021.

20. **Leane E**, Lavery C, Nash M, **Alexander K**, **Hunt L**, **Marx K**, **Zhang M**, Cultural Perceptions of Antarctica During Covid19, SCAR SC-HASS Conference, 19 November 2021.
21. **Marx K**, Connecting at a distance: can you 'get' Antarctica without going there?, SCAR SC-HASS Conference, 18 November 2021
22. **McCormack PC**, Successful climate adaptation or an invasive species fail? Legal responses for conserving species on the move, Global Dialogue on Biodiversity Law and Governance, 7 July 2021.
23. **McCormack PC**, Nature conservation and the conservation of 'nature', ENREL 'Green Bag' Forum, December 2021.
24. **Mynott S**, Open ocean dialogues – how to reach your audience. Virtual Early Career Ocean Professionals Day (vECOP), June 2021.
25. **Pecl G**, Reflections on a decade of climate change communication and engagement using a wide range of approaches with different marine stakeholder groups. World Fisheries Congress
26. **Rakotoarisoa P**, **Haward M**, **Ogier E**, **Fleming A** & **Fudge M**. Poststructuralist approach to understand the Blue Economy ontology - origins, trajectory, and implications. 2021 MARE People and the Sea Conference: Limits to Blue Growth?, 29 June 2021.



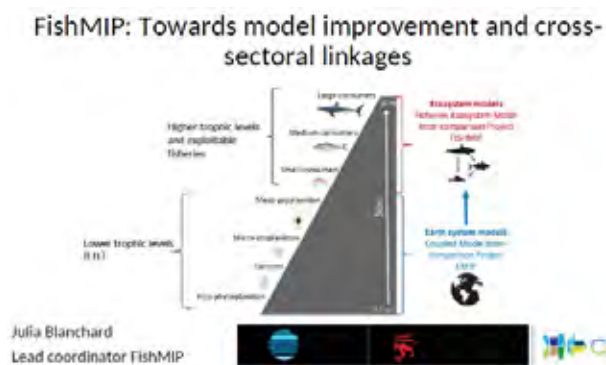
27. **Wright B**, **Komyakova V**, Sorte CJB, Tingley MW & **Pecl GT**, Reciprocal learning opportunities between climate-driven species redistribution and invasion ecology, 2021 Ecological Society of Australia (ESA) Conference, 22 November 2021.



SCIENTIFIC PRESENTATIONS AND WORKSHOPS

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1. **Alexander K**, Tasmania's Marine Atlas project, IMAS Grant Series Seminars, 27 April 2021.
2. **Blanchard J**, FishMIP workshops, January, May, August, November 2021.



3. **Constable A & Melbourne-Thomas J**, co-chairs of the Marine Ecosystem Assessment for the Southern Ocean (MEASO) program. Presenting as part of an event on “Antarctic marine ecosystems under pressure: protection needs action locally and globally” at COP26, 6 November 2021.
4. **Fischer M**, State of the Environment Australia 2021 report “Meet the Indigenous authors webinar”, 25 February 2021.
5. **Fulton EA**, Futures & Foresighting: Defining Scenarios for Fisheries Future Projections, Advice to NOAA on scenario methods for climate change, December 2021.
6. **Fulton EA**, Cumulative effects, Advice to OES-Environmental on assessment methods, December 2021.
7. **Fulton EA, van Putten I, Dutra LXC, Melbourne-Thomas J, Ogier E**, Thomas L, **Hobday A** Cross jurisdictional adaptation, IMBIZO 6 workshop 3: ocean governance and climate adaptation: comparing responses, charting future courses. October 2021.
8. **Fulton EA**, Ecosystem Modelling: Highlights, Applications & Gaps, UBC Fisheries 501, January 2021, https://www.youtube.com/watch?v=yY8VDzlOhQc&list=PLNXX5r9LA9jmHsfBM_jN0rtzybKvqnpXy&index=2

9. Gehlen M, Tommasi D, **Melbourne-Thomas J**, Lighting the 'grey zone': how can we integrate human dimensions in decadal-scale prediction systems?, IMBIZO 6 workshop 2, October 2021.
10. **Hunt L**, Framing Antarctica: Representing the icy continent in Australian online news media, UTAS Media School Seminar Series, Hobart, 29 September 2021.
11. **Kelly R**, Virtual Early Career Ocean Professional (V.ECOP) Day - chair of IMAS student networking event (2 June 2021).
12. **Kelly R**, Marine citizen science - connecting people to the ocean, ACSAs Citizen Science Lunchtime Seminar, 14 October 2021.
13. **Green M**, Using eDNA to reconstruct Fisheries Landings. FSP Environomics symposium, November 2021.
14. **Lucas C, Pecl G**, Mocatta G & Jones C, Problem Solver workshop. It takes a spark EDU Conference, Hobart, 26 May 2021.
15. **McCormack PC**, Legal methodologies and qualitative coding in law, University of Adelaide PhD Seminar, 13 December 2021.
16. **McGee J, McCormack PC**, Legal methodologies, UTAS Doctoral Candidate Training Series, 17 Nov 2021.
17. **Melbourne-Thomas J**, panelist at From Antarctica to Outer Space: Exploring gender equity at the extremes, UTAS National Science Week, 16 August 2021.
18. **Mynott S, Melbourne-Thomas J**, Ban N, Co-designing strategic tools to support climate-sensitive management, BES Climate Change Ecology Special Interest Group Workshop: Protected areas under climate change: challenges and opportunities, January 2021.
19. **Mynott S, Melbourne-Thomas J**, Ban N, How knowledge brokering can help meet shared goals in marine environmental management?, ASLO Aquatic Sciences Meeting, June 2021.
20. **Nash K**, Creating a vision to guide development of a sustainable ocean future: the Future Seas 2030 initiative. Invited speaker at the Webinar on the Community of Action on the Sustainable Blue Economy, organised by the United Nations Department for Economic and Social Affairs, 14 July 2021.
21. **Nash KL**, Virtual Early Career Ocean Professional (V.ECOP) Day - panel member at UTAS event.
22. **Pecl G**, seminar Climate-driven species re-distribution in marine coastal systems. Funk Lecture Series on Biogeography, International Biogeography Society, 31 March 2021.
23. **Pecl G**, online seminar Climate-driven species re-distribution in marine coastal systems. University of Victoria, Canada, 20 March 2021.
24. **van Putten I**, seminar Co-existence of legal and illegal supply chains for marine fisheries. Vulnerability to Viability Global Partnership Thematic Webinar Series, 26 March 2021.
25. **van Putten I**, international online workshop on conflict and marine resources, ZMT in Bremen and Bangladesh University students.



26. **Willis K**, online 'The effectiveness of waste management interventions through a behaviour change theory lens', One Integrated Marine Debris Observing System for a Clean Ocean - an official satellite activity of the 3rd UN Ocean Decade Laboratory "A Clean Ocean", 17 - 19 November 2021.
27. **Vince J**, 'Marine Plastic Pollution in Australia and Policy Solutions' Improving the effectiveness of environmental policy in Australia --- using regulation, markets and science to achieve sustainability goals, Australian Political Studies Association Workshop, University of Queensland, Brisbane, 29-30 November 2021.
28. Wernberg T, Rogers A, Verges A, **Bennett S**, Coleman M & Bunney S, 'Forest of gold: Uncovering the value of Australia's Great Southern Reef'. Online discussion panel as part of the Seaweed Forest Festival, 7 May 2021.



Great Southern Reef:
The kelp forest connecting
17 million Australians

ONLINE EVENT
Friday May 7th 2021
12pm AEST

Zoom Link:
<https://utas.zoom.us/j/82955811972>

Submit questions by tagging
#GreatSouthernReef

Prof. Thomas Wernberg
UTAS Oceans Institute & School of Biological Sciences, The University of Western Australia.

Dr. Abbie Rogers
UTAS Oceans Institute, Centre for Environmental Economics & Policy, The University of Western Australia.

Assoc. Prof. Adriana Verges
School of Biological, Earth & Environmental Sciences, University of New South Wales.

Dr. Scott Bennett
Institute of Marine and Antarctic Studies (IMAS), University of Tasmania.

Dr. Melinda Coleman
Principal Research Scientist, Department of Primary Industries.

Stephen Bunney
Commercial Abalone Diver, New South Wales.

Forests of gold:
Uncovering the value of
Australia's Great Southern Reef

www.greatsouthernreef.com

UNSW
IMAS
Department of Primary Industries
Seaweed Forest Festival

The webinar was targeted at state management agencies, policy makers and stakeholders of the Great Southern Reef from around Australia to raise awareness of the importance and interconnectedness of the reef. The webinar had 129 online viewers

STUDENT CONFIRMATION/COMPLETION SEMINARS

1. PhD student Lynlee Chikudza "Assessing social sustainability of Integrated multi-trophic Aquaculture in Tasmania"
2. PhD student Sheku Sei confirmation seminar: "Climate adaptation policy assessment and investment planning for marine protected areas in West Africa"
3. PhD student Angus Henderson: "Whales and krill of the south-west Atlantic"
4. Masters Research project presentation Brigitte Wright, "Extending knowledge limits: reciprocal opportunities for ecological advancement from species introductions and climate-drive range shifts", 29 April 2021.
5. Masters research project presentation Eloise Wilson, "Exploration of the drivers of observed changes in spatial distribution of sperm whales on the Kerguelen Plateau over time", 26 April 2021.
6. Honours research project presentation Patrick Hudson "Haul-out behaviour shifts in seals of south-eastern Tasmania, an opportunity for machine learning", 26 April 2021.



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*Above: Dr Cayne Layton receiving the Tasmania STEM Young Research of the Year 2021 award.
Below: Dr Madeleine Green, finalist for the Tasmanian of the Year 2021.*

1. **Adams V**, Tasmanian 2021 Young Tall Poppy Science Awards.
2. **Alexander K**, CMS Communications challenge award – theme prize winner, \$500.
3. **Blanchard J**, ARC Future Fellowship 2021, “Bridging the land–sea divide to ensure food security under climate change”, \$1,058,000.
4. **Fogarty H**, 2021 IMAS Most Inspiring PhD Award.
5. **Fulton EA**, 2021 Highly Cited Researcher (Clarivate Analytics).
6. **Green M** was a finalist for the Tasmanian of the Year 2021.
7. **Hobday AJ**, 2021 Highly Cited Researcher (Clarivate Analytics).
8. **Ison S**, 2021 IMAS Best Student Publications award for her publication ‘Stakeholder influence and relationships inform engagement strategies in marine conservation’, in the journal *Ecosystems and People*.
9. **Komyakova V**, Teaching Merit Certificate in recognition of your teaching practice at the University of Tasmania.
10. **Komyakova V** was awarded a Citation for excellence in the provision of feedback-based, student-centred, highly engaging learning of broadly applicable skills to a diverse group of Master students by the University of Tasmania.
11. **Lucas C**, CMS Communications challenge award – theme prize winner, \$500.
12. **Layton C**, Tasmanian STEM Excellence Awards – Tasmania STEM Young Research of the Year 2021.
13. **Nash K**, CMS Communications challenge award – theme prize winner, \$500.



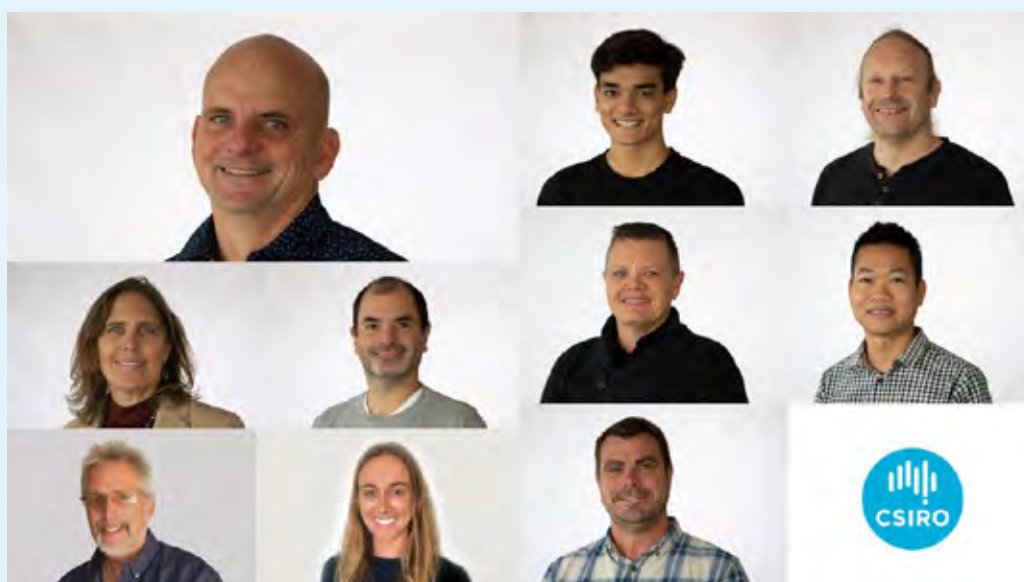


Video by PhD student Peter Puskic on marine pollution, <https://marinesocioecology.org/cms-communication-challenge/>



PhD student Katie Marx 3-minute thesis presentation 'Antarctica: Out of Sight, Front of Mind', <https://vimeo.com/599320477>.

14. **Nash K**, 2021 L'Oréal-UNESCO Australia and New Zealand For Women in Science Fellowship, \$25,000.
15. **Puskic P**, 1st prize CMS Communications challenge for Marine Pollution short video, \$3,000.
16. **Marx K**, second place at the 2021 3-minute thesis presentations, \$1,000.
17. **Simon M**, McDougall Scholarship UTAS School of Law.
18. **Pecl G**, 2021 K. Radway Allen Award .
19. **Pecl G**, Distinguished Women Scholars Lecturer, University of Victoria, Canada, 2021.
20. **Wilcox C**, Hardesty D and the marine monitoring and surveillance team from CSIRO were awarded the 2021 Ocean Innovation Award. This award recognises the individual, company or group that has this year publicly introduced innovative measures for reducing stress on the oceans, such as business operations that are not undertaken at the expense of the marine environment or promising new technologies that benefit ocean health. Chris and his team won the award for the development of two devices to tackle illegal fishing activities using radar and a system that detects poaching and fishing with explosives in the marine environment.





FUNDING & SCHOLARSHIPS

1. **Adams V, Ogier E, Chuah S-H, Stoeckl N, Pecl G**, Langlois T, Navarro M, Jarvis D, Mahony T. NESP Scoping Study research needs for a national approach to socio-economic values of the marine environment. NESP, \$60,000.

2. **Alexander K**. Tasmania's Marine Atlas (2021-2023) – FRDC, \$499,646.

3. **Audzijonyte A**, Krueck N, Richards S, Andersen KH. Universal properties and application of species size distributions. ARC Discovery grant for 2022, \$456,000.

4. **Green M**, Grant M. Re-writing the sawfish story: Inspiring community driven conservation of sawfishes in Papua New Guinea. Save Our Seas, \$10,000 USD.

5. **Johnson MS**. American Australian Association Graduate Education Scholar (2021).

6. **Lea M-A**, Wotherspoon S. Defining winning strategies in a changing Southern Ocean (2021-2023). ARC Discovery grant.

7. **Leane E**, Philpott C, Samartzis P, Williams S, Walch M, Nielsen N, William Fox, Yasuda S. Creative Antarctica: Australian Artists and Writers in the Far South. ARC Discovery grant for 2022, \$314,000.

8. **McDonald J, McGee J**, Brent K. Governing solar radiation management research, development and deployment (2021-2023). ARC Discovery grant.

9. Morrison T, **Pecl G**, Hughes T. Novel governance for marine ecosystems in rapid transition. ARC Discovery grant for 2022, \$401,000.

10. **Mynott S**, Lovindeer R. Interpreting oil spill impacts: integrating First Nations knowledge with aquatic science for the benefit of coastal communities. ASLO Global Outreach Grant.

11. **Mynott S**, Ban N, Lovindeer R, Allen S. Strategic planning for oil spills – working across disciplines to explore and test contaminants scenarios. MEOPAR Response Core Training Fund.

12. **Nash K**. Grant from ICES_ACS to present at the World Fisheries Congress WFC2021.

13. Neves F, Borges R, **Mynott S**, Weise N. Maretório: making space to communicate about science, conservation and climate change. Research Intervention Action Plan supported by a British Council Researcher Links Climate Challenge Workshop Grant.



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14. **Pecl G & Wolfe B.** National Assessment of Climate-Driven Species Redistribution using Citizen Science Data. NESP, \$47,178.
15. **Pecl G.** Redmap website upgrades and report card. Department of Primary Industries NSW, \$78,844.
16. **Puskic P.** National Science Week Seed Grant 2021, \$2,000.

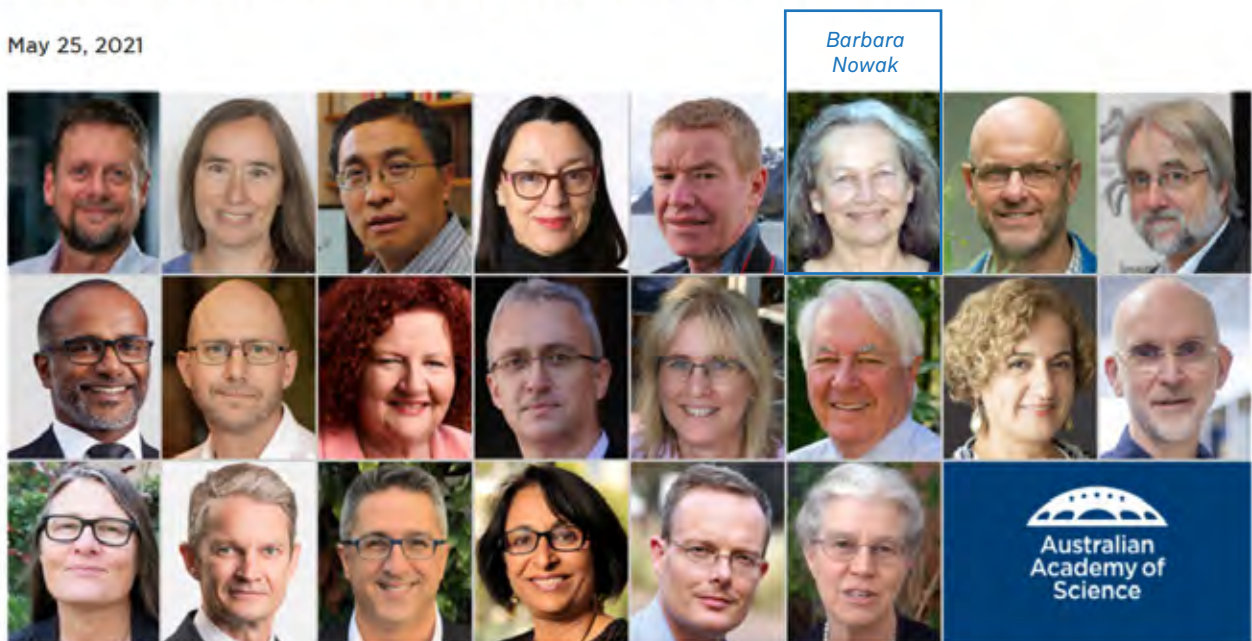
17. **Puskic P.** Holsworth Wildlife Research Endowment, \$5,000.
18. **Puskic P.** Australian Society for Parasitology Travel Award, \$4,150.
19. Verges A, **Bennett S**, Rogers A, Wernberg T, Filbee-Dexter K, Burton M, Milligan B, Gacutan J. Quantifying the ecosystem services of the Great Southern Reef. NESP, \$50,000.
20. **Vince J, Haward M, Fulton E, Stephenson R.** Governing during an ocean climate crisis: Building integrative capacity. ARC Discovery grant for 2022, \$464,726.
21. **Willis K.** Postdoctoral Fulbright Fellowship, May 2021.
22. **Wilcox C.** Development and Implementation of a Transparent, Repeatable, and Cost-Effective Methodology for Estimating IUU Fishing in the Indian Ocean. Principal Investigator. Department of Foreign Affairs and Trade. \$660,000.
23. **Wilcox C.** Understanding use patterns and compliance risk through advanced statistical modelling and new surveillance technologies. Principal Investigator. Great Barrier Reef Marine Park Authority. \$1,110,000.

OTHER OUTPUTS & ACHIEVEMENTS

Barbara Nowak was elected by the Australian Academy of Science as one of the 2021 nation's most distinguished scientists. Fellows of the Academy are among the 22 nation's most distinguished scientists and elected by their peers for ground-breaking research and contributions that have clear impact. 25 May 2021. <https://www.science.org.au/news-and-events/news-and-media-releases/twenty-two-australians-recognised-among-nations-distinguished-scientists>.

Twenty-two Australians recognised among our nation's most distinguished scientists

May 25, 2021



The new Fellows of 2021

Sean Tracey was nominated and accepted as an International Game Fishing Association (IGFA) representative. This honour with IGFA Representatives being among the most dedicated supporters of the organization and their leadership has proven essential to shaping the IGFA's reputation as the world's most prestigious international angling and conservation organization. IGFA Representatives act as ambassadors of IGFA and liaisons between the angling interests in their areas around the world and IGFA Headquarters in the United States.

IGFA Representatives support the many goals and programs of the IGFA, with emphasis on expanding the organization's international reach and promoting the conservation and education goals of the IGFA.

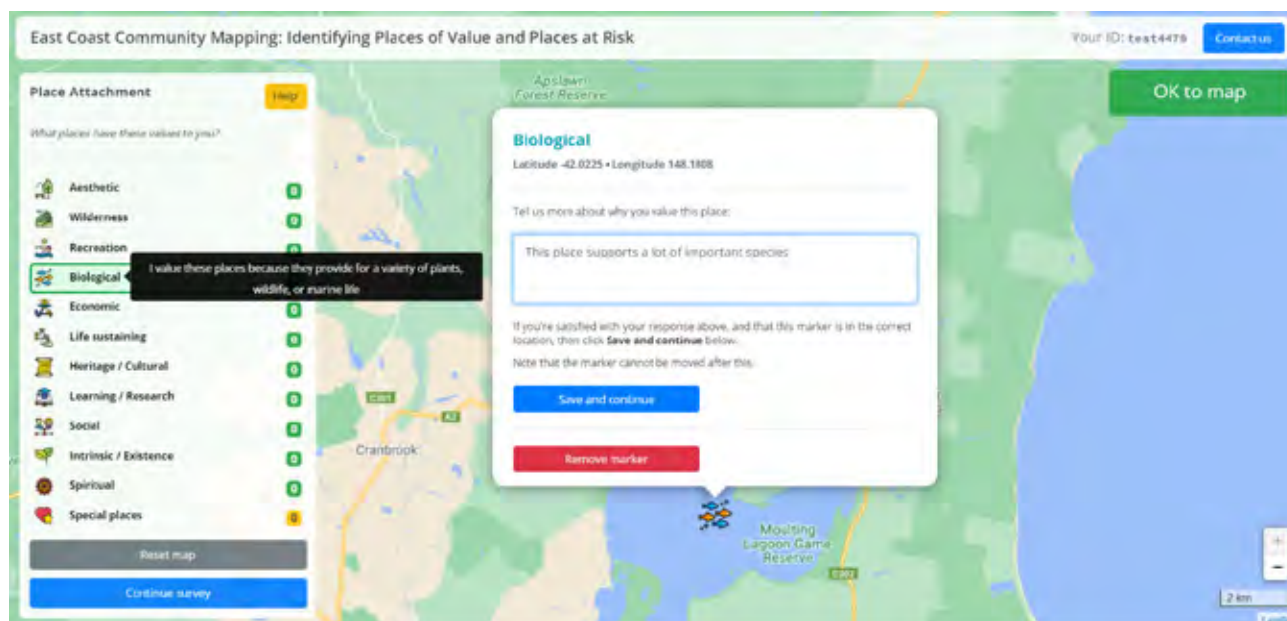


Pictured: Sean Tracey

ACADEMIC PROMOTIONS

- Valeriya Komyakova was promoted to level B.
- Anna Farmery was promoted to senior lecturer.
- Kirsty Nash, Emily Ogier, Beth Strain and Jennifer Lavers were promoted to level C.
- Vanessa Adams was promoted to level D (Associate Professor).
- Catriona MacLeod, Mary-Anne Lea and Julia Blanchard were promoted to level E (Professors), and Ingrid van Putten was appointed as an adjunct Professor at IMAS and CMS.






LANDSCAPE VALUES MAPPING PLATFORM (LVMP)

The Landscape Values Mapping Platform (LVMP) was developed in April 2021 as a tool to collect spatially explicit social data by PhD students **Malcolm Johnson** and **Dimuthu Jayakody**. The LVMP is a Public Participatory GIS (PPGIS) surveying tool that can collect map-based data alongside quantitative questionnaires. The tool was successfully used by Dimuthu and Malcolm to collect data for both their respective projects, which included mapping place attachment, landscape values and climate risk perspectives of Break O'Day, Glamorgan Spring Bay and Huonville residents' and collecting data on local climate change attitudes and environmental behaviours.

Following this success, work has begun on making the LVMP available to other researchers as an open-source tool. This includes improving design and user-friendliness and developing a system to allow researchers to easily design and set up their own surveys. The LVMP was developed to be highly flexible and adaptable to research needs, as such it can be utilized by scientists and decision makers alike to inform on human dimensions of marine spatial planning, natural resource management, conservation management and land-use planning.

COMMITTEES, WORKING GROUPS, PANELS & NETWORKS

-  **Bax N**, Challenger 150, UN Decade action, South Atlantic Working Group member.
-  **Bax N**, Deep Ocean Stewardship Initiative (DOSI) member.
-  **Bax N**, Deep Ocean Early-Career Researchers (DOERs) professional development program member.
-  **Bax N**, leading a Sub-Antarctic Blue Carbon and Natural Archives Network - to increase our understanding of blue carbon in the past, present and future (in response to climate change).
-  **Bennett S**, Lead for Australasia in Global Ecosystem services Assessment for Kelp forests (GEAK) working group.
-  **Evans K & Pecl G**, Global Ecosystem for Ocean Solutions (GEOS) working group (endorsed as a UN Ocean Decade Programme).
-  **Fulton EA** editorial board Conservation Letters, Fish & Fisheries, Ecology & Society, Socio-Environmental Systems Modeling (SESMO).
-  **Fulton EA** scientific advisory board for the EU funded Humboldt tipping point project.
-  **Fulton EA** scientific advisory board for the EU funded COMFORT research program.
-  **Fulton EA & Pecl G**, invited to join the Network of Interdisciplinary and Transdisciplinary Research Organisations – Oceania, <https://nitro-oceania.net/>
-  **Green ME** National eDNA Guidelines for Best Practice Working Group.
-  **Hardesty D**, CSIRO Pollution Portfolio Leader, Marine Resources and Industries.
-  **Hardesty D**, Advisory Panel, Sustainable Seas Trust.
-  **Hardesty D**, International Scientific Advisory Board (ISAB), SeaCleaners
-  **Hardesty D**, Homeward Bound Leadership Team.
-  **Hardesty D**, ASEAN Plastic Pollution Metrics Working Group co-chair
-  **Hardesty D**, Frontiers in Marine Science Editorial Board
-  **Kelly R** Early Career Ocean Professional (ECOP) WG of the UN Ocean Decade.
-  **McCormack PC**, review editor Frontiers in Climate, Law & Policy, editorial board Journal of International Wildlife Law & Policy and global associate Centre for Environmental Law.
-  **McCormack PC**, co-director Environment, Natural Resources and Energy Law Institute (The University of Adelaide).
-  **McCormack PC**, board member National Environmental Law Association.
-  **Melbourne-Thomas J**, National Committee for Antarctic Research (Australian Academy of Science).
-  **Melbourne-Thomas J**, Tasmanian Rhodes Scholar Selection Committee.
-  **Melbourne-Thomas J**, appointed to Team Leader, Marine Socioecological Systems, CSIRO

- ▶ **Nash K & Blanchard J** invited to be part of NCEAS working group - Food footprint and environmental justice.
- ▶ **Nash K & Pecl G**, aKIDemic Life Board.
- ▶ **Pecl G**, editorial board npj Ocean Sustainability, Reviews in Fish Biology and Fisheries, Ecography and Frontiers Ocean Solutions.
- ▶ **Pecl G**, Advisory Board CORDIO East Africa.
- ▶ **Pecl G**, Advisory Board for “Enhancing adaptive capacity assessment in fisheries decision making: Identifying barriers and ways to overcome them.” For US Fisheries, funded by Lenfest.
- ▶ **Pecl G**, NCEAS SNAPP Climate Resilient Fisheries working group.
- ▶ **Pecl G**, working group Fisheries Strategies for Changing Oceans and Resilient Ecosystems by 2030 (endorsed as a UN Ocean Decade Action).
- ▶ **Pecl G**, served on the committee to formally review IMBeR, Integrated Marine Biosphere Research, a large global research project which focuses on ocean sustainability in the context of global change and is a program of The Scientific Committee on Oceanic Research (SCOR).
- ▶ **Pecl G & Tracey S**, Ambassadors for Business Events Tasmania.
- ▶ **Puskic P, Reimer T, Marx K, MacLeod C, Lea M-A, Lavers J, Corney S, Rakotoarisoa P, Zhang M, Larachite M**, IMAS IDEA committee.
- ▶ **Trebilco R**, Fischer M, Evans K and Hobday A continued in their roles as authors of the marine chapter of the upcoming 2021 State of the Environment Report.
- ▶ **Trebilco R**, Scientific Advisory Committee member, ARDC EcoCommons project.
- ▶ **Trebilco R**, Scientific advisor: ARDC EcoAssets project.
- ▶ **Trebilco R** continued as Team Leader, Marine Ecosystem Modelling & Assessment, CSIRO.
- ▶ **van Putten EI**, editorial board Fish & Fisheries, Ecology and Society and MEPS. Scientific advisory board MEPS.
- ▶ **van Putten EI**, Scientific Steering Committee member for the Sustainable Seas National Science Challenge, New Zealand.
- ▶ **van Putten EI**, Research Advisory Board member for European Union project - Climate Change and Future Marine Ecosystem Services and Biodiversity (Future MARES).
- ▶ **van Putten EI**, External Advisory Board of the University of Hamburg Cluster of Excellence CLICCS.
- ▶ **van Putten EI**, Marine Stewardship Council-POSEIDON Expert Review Panel.
- ▶ **Vince J**, Member of the Scientific Panel for the Victorian Marine and Coastal Council.
- ▶ **Wilcox C**, Current Expert Advisory Panel Member, Minderoo Foundation Flourish Oceans Advisory Panel.
- ▶ **Wilcox C**, Team Leader, Marine Data Analytics, CSIRO.
- ▶ **Wilcox C**, Leader, Marine Monitoring and Surveillance Portfolio, CSIRO.
- ▶ **Wilcox C**, Adjunct Faculty, Quantitative Marine Sciences Program, University of Tasmania.
- ▶ **Wilcox C**, Current Adjunct Faculty, Department of Applied Mathematics and Statistics, University of California.
- ▶ **Wilcox C**, Board Member, TierraMar.
- ▶ **Wilcox C**. Director, Advanced Conservation Strategies.
- ▶ **Willis K**, Review Editor for Frontiers in Marine Science and Marine Pollution.

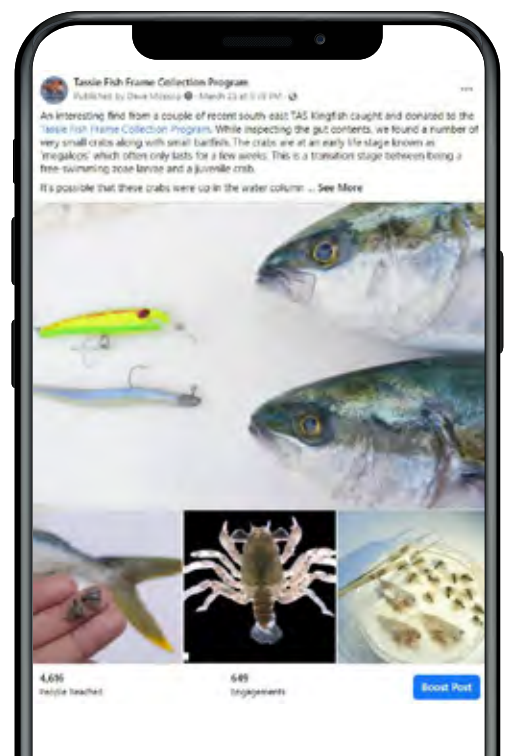
PUBLIC OUTREACH

Pictured right: Prof Catriona MacLeod presenting at the Clarence Climate Action Expo, Tasmania/lutruwita.



PUBLIC PRESENTATIONS

- **Maree Fudge** presented at the first UTAS Café Lab, held in Burnie, about marine and coastal environments. May 2021.
- **Beth Fulton** presented to “Beer Aquatic”, which are public interest topical science presentations at the Hobart waterfront, 25 November 2021.
- **Beth Fulton** talked climate change with students at Dominic College, 8 November 2021.
- **Beth Fulton** presented to the Southern and Eastern Scalefish and Shark Fishery Resource Assessment Group and the Great Australian Bight Resource Assessment Group (multi stakeholder groups involved in advising on the state and management of the fisheries) on climate adaptation and ecosystems, August and October 2021 (virtual).
- **Beth Fulton** presented an invited high-level talk on modelling to the UN Ocean Decade of Ocean Science Lab 2, hosted by the German Federal Ministry of Education and Research, September 2021 (virtual).
- **Beth Fulton** presented a summary of the Blue Economy to ‘Science for Seniors’ 16 August 2021 (virtual).
- **Beth Fulton** presented to the Australian Alumni Week in Brazil, hosted by the Australian Government, April 2021 (virtual).
- **Catriona MacLeod** presented at the Clarence Climate Action Expo, 18 September 2021.
- **David Mossop** helped establish and run the Tassie Fish Frame Collection Program which is a citizen science program. It involves members of the Tasmanian fishing community (including recreational fishers, commercial fishers, fisher processors and charter operators) donating the leftover carcasses (‘frames’) of select fish species for scientific research by IMAS. David has run the Tassie Fish Frame Collection Program [Facebook page](#) which provides science communication (videos and photo-based posts) to engage and educate the public on results of the program, in addition to face-to-face engagement with fishers at boat ramps and popular fishing locations.



- ▶ **Katie Marx** held a community outreach stall at the Royal Hobart Show in October 2021 in order to engage local residents in research about Hobart's role as an Antarctic gateway city.
- ▶ **Gretta Pecl** presented at the Women's Voices in Science, at Elizabeth Collage, a Science Week event, 10 August 2021.
- ▶ **Gretta Pecl** presented the episode "Squids and other suckers" at UCTV Alive for Kids, 11 August 2021, having an audience of 553 children.
- ▶ **Gretta Pecl, Mengzhu Zhang, Dimuthu Jayakody, Anne Boothroyd, and Stephy Libera** presented at the Huon Valley STEM Expo, attended by over 400 students, 19 August 2021.



Prof Gretta Pecl presenting at the Huon Valley STEM Expo, Tasmania/lutruwita.



Prof Gretta Pecl presenting at the Huonville High school, Tasmania/lutruwita.

- ▶ **Gretta Pecl** presented about Climate change and the IPCC process (and then baked bike-powered donuts!) at Climate Week, Huonville High, organised by Zayed Sustainability Team, 13 September 2021.
- ▶ **Gretta Pecl** presented the talk 'Inspiring Tasmanian Science to Inspire Young Scientists', at Science Teachers conference, Elizabeth Collage, 19 November 2021.



Dr Gabi Mocatta presenting about the Curious Climate School Edition, UTAS Open Day, Hobart/nipaluna.

- ▶ A CMS Curious Climate schools Q&A panel, facilitated by **Gretta Pecl**, was formed by **Andrew Constable**, Gabi Mocatta, Katherine Ollerhead, **Jess Melbourne-Thomas**, and **Malcolm Johnson** as part of the University of Tasmania Open Day.
- ▶ **Peter Puskic** and **Mary-Anne Lea** were involved in organising and presenting Marine Predators: From Islands to the Deep – an immersive underground marine science experience – Science week event, Hobart Town Hall.



BEAKER ST FESTIVAL

- Beth Fulton** discussed modelling and aquaculture at TMAG, 6 August 2021.
- Jess Melbourne-Thomas** and **Gretta Pecl** were part of the debate panel “You can’t handle the (scientific) truth!”, held at TMAG, 7 August 2021.

Three CMS members presented at three of the four Tassie Science Road Trips during the festival held between the 8th to the 14th August,

- Jess Melbourne-Thomas** presented about “how climate change is affecting Tasmanian and Antarctic species and environments”, at the RACV Hobart Hotel.
- Catriona MacLeod** talked about “coastal and marine development and resource use”, in Strahan. Prof MacLeod also joined the Gordon River Cruise to add to the scientific commentary about the Tasmania’s west coast and the Tasmanian UNESCO Wilderness World Heritage Area.
- Gretta Pecl** talked about “the effects of climate change on the inhabitants of Tasmania’s East Coast waters”, in Freycinet on the 13th of Aug. Gretta also joined the Wineglass Bay Cruise to continue the discussion about how and why Tasmanian marine species continue to change.

VIDEOS

Asta Audzijonyte was part of this video about How to assess recreational fishing in Lithuania, <https://youtu.be/9k4ruOoDJ7M>

Denise Hardesty, Sea to Source project in collaboration with Conservation Volunteers Australia, <https://vimeo.com/539949183/38067efc29>

MEDIA

Paper co-led by **Narissa Bax** and **Camilla Novaglio** in IMAS media news article: ‘Oceans for life: building a sustainable and equitable blue economy’, 10 March 2021. https://imas.utas.edu.au/news/news-items/oceans-for-life-building-a-sustainable-and-equitable-blue-economy?fbclid=IwAR29okuHBlix9udUMn5at2RAwawzFr5iKx8g_4o1Mhlg7G46Q_bO8E-n-M

Scott Bennett was interviewed by Dr Craig Proctor (ex CSIRO scientists, retired) in the podcast ‘vibes under the sea’ for Print Radio, <https://www.printradiotas.org.au/vibes-under-the-sea/episode-13-dr-scott-bennett-imas>

Swee-Hoon Chuah article on The Sydney morning Herald highlighted in article ‘UTAS Economics Professor Swee-Hoon Chuah says COVID vaccine not fail safe’, The Examiner, by Sue Bailey, 12 January 2021.

Swee-Hoon Chuah was interviewed by ABC Queensland and Radio Adelaide regarding the article ‘Even with a vaccine, we need to adjust to playing COVID-19 long game’, January 2021.

Mibu Fischer and **Gretta Pecl** were interviewed in this 3CR Radio episode Blah blah blah? What’s at stake in global climate and biodiversity talks ‘about climate change and the Indigenous perspectives piece on the future of the ocean as part of the Future Seas project, 7 November 2021, <https://www.3cr.org.au/radioblue/episode-202111071130/blah-blah-blah-whats-stake-global-climate-and-biodiversity-talks>

Dean Greeno was interviewed on ABC Breakfast radio about Future seas project and the importance of empowering the voices and agency

of Indigenous Peoples: 'What role does Indigenous knowledge play in observing and reversing climate change?', 13 September 2021, <https://www.abc.net.au/radio/hobart/programs/breakfast/dean-greeno-climate-research/13538912>

Swee-Hoon Chuah work was featured in the article 'Even with a vaccine, we need to adjust to playing COVID-19 long game', The Sydney Morning Herald, 11 January 2021. <https://www.smh.com.au/national/even-with-a-vaccine-we-need-to-adjust-to-playing-covid-19-long-game-20210111-p56t91.html>

Paper co-authored by visiting PhD student Laura Kaikkonen and **Ingrid van Putten** was highlighted in the article 'Emotional associations, more than knowledge, determine how much people care about the deep sea', by Carolyn Beans in PNAS Journal Club, 6 July 2021. <http://blog.pnas.org/2021/07/emotional-associations-more-than-knowledge-determine-how-much-people-care-about-the-deep-sea/>

Rachel Kelly was featured in the article 'The challenge of leading interdisciplinary research projects' in the Nature Index News blog by Shipra Jain- 17 Aug 2021, <https://www.natureindex.com/news-blog/challenge-of-leading-interdisciplinary-research-projects>

Cayne Layton work was featured in 'The Wildlife Revolution', ABC Catalyst, <https://www.abc.net.au/catalyst/the-wildlife-revolution/13482358>

Cayne Layton was interviewed in ABC Radio and National Science Week - Ockam's Razor – about 'Giant kelp forests, climate change, and the Great Southern Reef'.

Cayne Layton was interviewed in the film 'Restoring Tasmania's disappearing underwater giants'. Channel 10 The Living Room, https://m.facebook.com/watch/?v=1174630729622070&_rdr

Cayne Layton work was featured in article 'Inside the battle to save Tasmania's giant kelp forests', by Miki Perkins, The Sydney Morning Herald, 9 May 2021, <https://www.smh.com.au/environment/climate-change/inside-the-battle-to-save-tasmania-s-giant-kelp-forests-20210506-p57pls.html>



Cayne Layton work was featured in article 'Tasmania's giant kelp forests starting to regrow just a year into rescue trial', ABC News, by Will Murray, 13 October 2021, <https://www.abc.net.au/news/2021-10-13/kelp-forests-off-tasmania-regrowing-a-year-since-project-began/100532756>

Chloe Lucas and Gabi Mocatta, Curious Climate Schools in UCTV Alive for kids, 3 November 2021.

Catriona MacLeod research was highlighted in the article 'Unlocking the super powers of seaweed', The Mercury, 11 July 2021.

Katie Marx was interviewed by Lucy Breaden on ABC drive radio around her PhD research into the connection between Hobart residents and Antarctica. 26 May 2021.

David Mossop was interviewed by John X on ABC morning radio about the Tassie Fish Frame Collection Program and how citizen scientist recreational fishers can get involved. 7 January 2022.

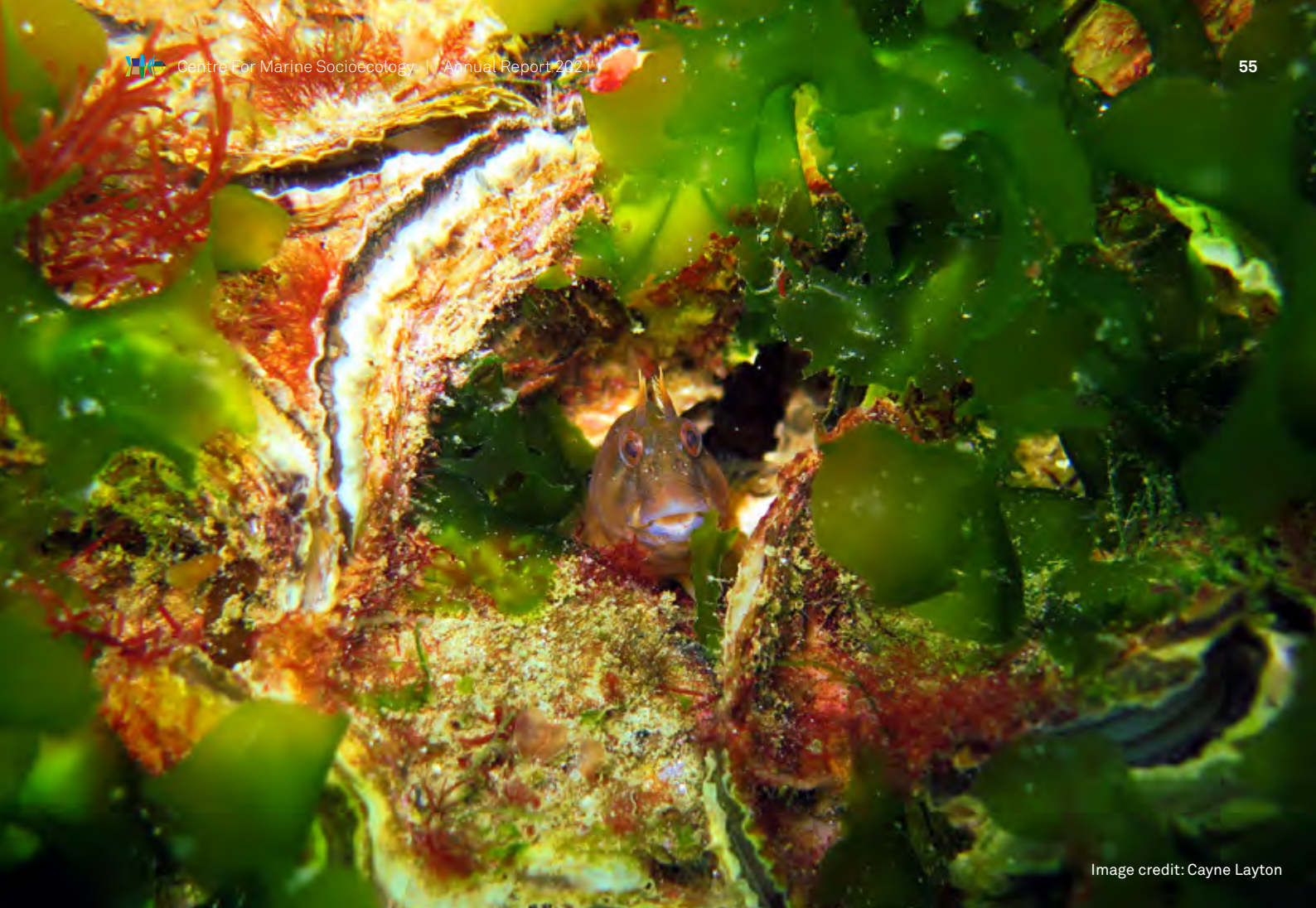


Image credit: Cayne Layton

Kirsty Nash participated in the two-part special edition podcast 'SEIZE the YAY presents L'Oréal Girls in Science 2021', presented by Sarah Davidson's Seize the Yay podcast.

Kirsty Nash was featured in article 'Women in science finally getting the recognition they deserve', The Sydney Morning Herald, by Jane Rocca, 21 November 2021, <https://www.smh.com.au/lifestyle/life-and-relationships/women-in-science-finally-getting-the-recognition-they-deserve-20211118-p59a0r.html>

Kirsty Nash was featured in article 'Fellowship to aid food source study (L'Oreal)', Sunday Tasmanian.

Kirsty Nash was interviewed in The Science Show at Radio National regarding her L'Oreal Award, 27 November 2021, <https://www.abc.net.au/radionational/programs/scienceshow/l%E2%80%99or%C3%A9al-and-unesco-for-women-in-science-award-for-research-into/13649098>

Kirsty Nash was featured in article 'Meet the trailblazing women who have been selected for L'Oréal and UNESCO's 'For Women in Science' fellowship', RUSSH Magazine, by Jasmine Pirovic, <https://www.russh.com/loreal-unesco-for-women-in-science-2021-fellows/>

Kirsty Nash was featured in article 'Meet The 5 Female STEM Stars Honoured By The 2021 L'Oreal-UNESCO Women in Science Awards', Marie Claire, by Rachel Sharp, <https://www.marieclaire.com.au/women-in-science-2021-winners>

Gretta Pecl was interviewed by Dr Craig Proctor (ex CSIRO scientists, retired) in the podcast 'vibes under the sea' for Print Radio, <https://www.printradiotas.org.au/2020-vibes-under-the-sea/episode-6>

Gretta Pecl was interviewed in Ultra106five radio on 'research species changing with warming oceans', related to a paper she co-authored, 12 May 2021, <https://ultra106five.com/research-species-changing-warming-oceans/>

Gretta Pecl was interviewed for a popular science book on ecological responses to climate change, *Hurricane Lizards and Plastic Squid: The Fraught and Fascinating Biology of Climate Change*, discussed in the article 'Can Squid Teach Us How to Survive Climate Change?', Monthly Portland, by Karly Quadros, 28 September 2021, <https://www.pdxmonthly.com/arts-and-culture/2021/09/author-thor-hanson-interview>

Peter Puskic, Mibu Fischer, Genevieve Phillips, Beth Fulton participated in the Diversity in STEMM gallery Tasmania, an initiative to celebrate the Science Week 2021 a gallery exhibition for women and underrepresented groups in STEMM to celebrate their important contribution to STEMM achievements in our island state, <https://www.diversitystemm.com/about>



Peter Puskic, Spotify Podcast – [Out for Australia, Out For You; The Podcast](#)

Queer life is usually synonymous with metropolitan, city areas, but that is just one dimension of being queer in Australia. In this episode we shine the light on regional Australia, what it is like being queer in rural areas in workplaces that aren't boardrooms and offices. In this episode we talk with Peter Puskic (he/him), a biologist, studying human impacts on animals and their habitats. Peter grew up in regional WA before moving to Melbourne where he studied zoology and archaeology.

Kelsey Richardson work was highlighted in article 'Fearless diver dedicates life to removing fish hooks from the mouths of wild sharks', 9 News, by Raffaella Ciccarelli, 30 May 2021.

Denise Hardesty, Podcast 'Turning the Tide on Plastic', The Natural Resources Podcast, <https://www.buzzsprout.com/907126/8466191>

CMS EVENTS

Ocean Visions 2021 Summit

CMS supported the Ocean Visions 2021 Summit held on the 18 – 21 of May. The summit involved five campuses around the world, including Hobart. Several CMS members presented in the in person event and online sessions during the Summit.

The four-day Ocean Visions Summit 2021 was a huge success with more than 2300 registered attendees from almost 80 countries gathering to work on ocean solutions.

Two in-person discussion panels were held in Hobart:

1. Human wellbeing of marine communities in a conflicted world.

OCEAN VISIONS SUMMIT
Towards a global ecosystem for ocean solutions
May 18-21, 2021

**EVENT: May 19, 8 PM - 10 PM PST
May 20, 1 PM - 3 PM AEDT**
Human Wellbeing in a Conflicted World

MODERATORS

- Graeme Ford, University of Tasmania
- Maree Fudge, University of Tasmania
- Jan McDonald, University of Tasmania

KEYNOTES & PANEL

- Julian Harrington, Tasmanian Seafood Industry Council: Mental health in the fishing industry
- Aidan Davidson, UTAS Geography, Planning and Spatial Sciences: Anxiety, agency and ambivalence and the cultural significance of oceans/coastal communities
- Faoline Moritt, UTAS Centre for Rural Health: Increasing our understanding of health and wellbeing derived from landscape connections
- Emily Hies, UTAS School of Natural Sciences

Free Registration - <https://www.oceanvisions.org/summit-2021>

2. Ocean Solutions: What is needed for success in Tasmania?

OCEAN VISIONS SUMMIT
Towards a global ecosystem for ocean solutions
May 18-21, 2021

**EVENT: May 20, 7 PM - 10 PM PST
May 21, 12 PM - 3 PM AEDT**
Ocean Solutions in Tasmania

KEYNOTE The Next Decade of the Australian Blue Economy

MODERATORS

- Jan McDonald, University of Tasmania
- Valeriy Komyskov, University of Tasmania
- Karen Evans, CSIRO

PANEL What is Needed for Success in Tasmania?

- Greg Johannes, Blue Economy Cooperative Research Centre
- Martin Exel, SeaSOS
- Emily Ogier, University of Tasmania
- Ian Dutton, Department of Primary Industries, Parks, Water and Environment
- Adriana Veigas, University of New South Wales

Free Registration - <https://www.oceanvisions.org/summit-2021>



Film screening 'After the Apology'

Film screening of 'After the Apology' with special Guests Rob Anders, Greg Lehman and Jo Cameron, organised by CMS student **Giarn Carroll**. The screening included a Q&A with Rob Anders and Greg Lehman and a lunch using traditional Aboriginal foods provided by palawa kipli. CMS provided funding for this event to help build awareness and create social change regarding the ongoing nature of the Stolen Generation.



Clockwise:

1. Skit by Corrine Condie involving different “stakeholders” of the marine environment,
2. Peter Puskic Playing a pitching song,
3. Angus Henderson presenting his pitch,
4. Presentation by Dimuthu Jayakody and Malcolm Johnson,
5. Scott Bennett making a ‘plea pitch’ to the Minister,
6. The Honourable Minister for CMS Ocean Stuff and Marine Affairs (Beth Fulton) and the Deputy Secretary for Blue Communications (Rachel Kelly) and other CMS members and students attending the event.

Pitch funding session

Several PhD students and ECRs pitched to the “Honourable Minister for CMS Ocean Stuff and Marine Affairs (Fulton) and the Deputy Secretary for Blue Communications (Kelly)” for small amount of funding to support some of their field work, training and small project ideas. There was a lot of creativity in the pitches, we had songs, skits, videos, impassioned pleas to the Minister and more!

Pitches funded:

- Angus Henderson, training course on data analysis
- Pricilla Rakotoarisoa, printer and better internet provider to be able to work from overseas (Madagascar)
- Corrine Condie, field work and interviews about perceptions of salmon aquaculture
- Catarina Serra-Goncalves, CMS Student writing retreat on the East Coast of Tasmania
- Dimuthu Jayakody & Malcolm Johnson, GIS App upgrade so enable their app to be adaptable and used by the broader scientific community
- Scott Bennett, support for film footage about Tasmanian Aboriginal's connection to sea country for the Great Southern Reef website



From left to right: Rachel Kelly, Madi Green, Peter Puskic, Cloe Cummings, Kathy Willis and Mary Mackay.

V.ECOP day

To highlight the launch of the UN Decade of Ocean Science for Sustainable Development (2021–2030), IMAS and CMS hosted an interactive event as part of global V.ECOP Day.

V.ECOP Day engaged a shared and diverse vision for the Ocean Decade, via presentations from key researchers and stakeholders, interactive Q&A panel sessions with local students, ECRs, & early-career marine stakeholders; and a networking event.

The panel was hosted by **Rachel Kelly** and **Peter Puskic**, and was formed by **Kirsty Nash**, **Madi Green**, **Mary Mackay**, **Kathy Willis**, **Cayne Layton**, **Cloe Cummings**, **Valeriya Komyakova** and **Karen Evans**.

International Day for Women and Girls in Science 2021

CMS hosted a Twitter event to acknowledge the amazing female researchers in CMS.



Curious Climate Schools edition

During Global Climate Change Week, **Chloe Lucas** led a 'Curious Climate Tasmania Schools Edition' engaging approximately 1,000 primary and secondary students across Tasmanian schools. The Curious Climate team also included CMS members **Rachel Kelly** and **Gretta Pecl**, and researchers from the University of Tasmania Gabi Mocatta, Kim Beasy, Charlotte Jones and Deniz Yildiz.

Students posed 273 burning climate change questions to the research team; 57 experts were engaged to answer them. Questions ranged from 'How do we know that climate change is real?' to 'What are the links between the increasing number, frequency and intensity of natural disasters and climate change?' to 'Can you explain the concept of 'climate change' in a really simple way that students could then use to talk to other people in the community about it?'

The experts included scientists from Geography and Spatial Sciences, CMS, Biological Sciences, and Education from the University of Tasmania,

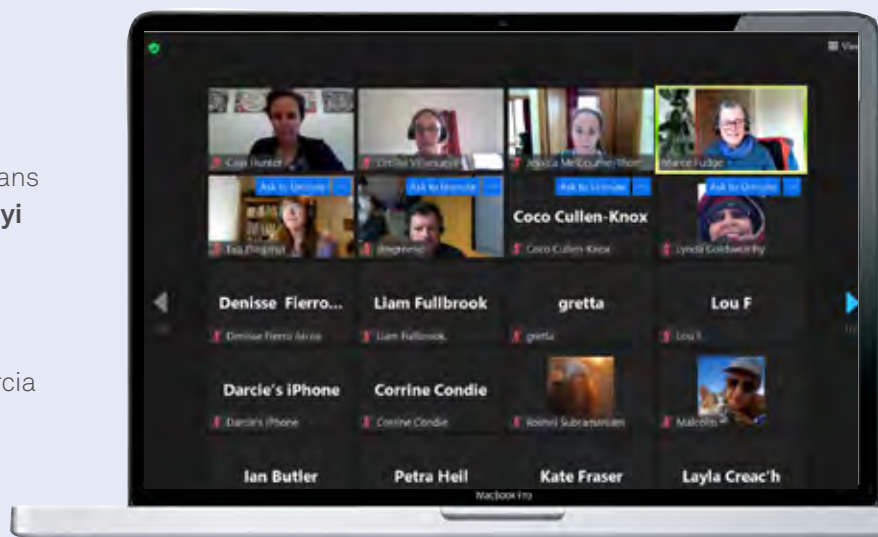


CSIRO, and other international institutions. All the questions and answers can be found at the website: <https://curiousclimate.org.au/schools/>

The project was sponsored by CMS, Climate Futures, the University of Tasmania, and the Tasmanian Government.

CMS seminars

- Webinar: Science for Policy: Sustainable Oceans & Fisheries by Dr Cass Hunter, Dr **Éva Plagányi** and Dr **Jess Melbourne-Thomas**, chaired by **Maree Fudge**
- Webinar: Practical strategies for women to progress their academic careers, by Prof Marcia Devlin, organised by **Valeriya Komyakova**



Stephan Andrew presenting the seminar about the Great Southern Reef



Beth Fulton presenting at the seminar and expert panel: 'Climate change adaptation for Australia's fisheries' to discuss the findings of the Adaptation of Commonwealth Fisheries management to climate change handbook.

- Seminar: Bringing kelp forests into the classroom. Lessons from an educational filmmaker building an identity for the Great Southern Reef, by Stephan Andrew, organised by **Scott Bennett**, 16 November 2021
- Seminar and Expert Panel: 'Climate change adaptation for Australia's fisheries', 6 December 2021, organised by **Rowan Trebilco**.

In this seminar **Beth Fulton**, who was the lead author of the handbook 'Adaptation of Commonwealth Fisheries management to climate change', presented an overview of the challenge of adapting Australia's fisheries to climate change. The seminar was followed by an expert panel, comprising co-authors on the Handbook **Jess Melbourne-Thomas**, **Ian Butler**, **Leo Dutra**, Ryan Murphy, **Emily Ogier** and Nick Ryans, who shared their insights and answered questions.

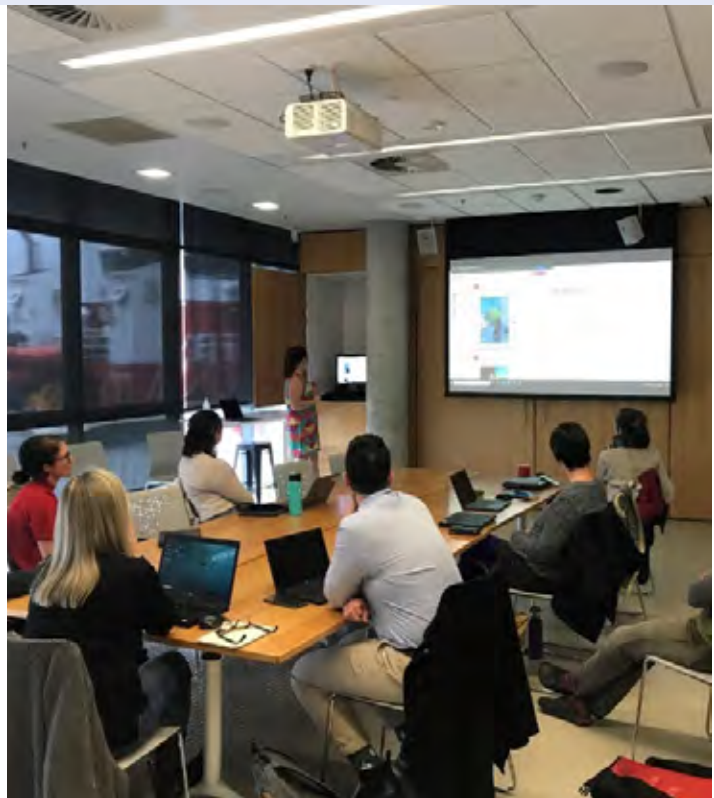
- Lunchtime information session "The Southern Ocean Knowledge and Information wiki SOKI: a tool for seamlessly sharing workflows, building collaborations and establishing a reliable source of information" by **Andrew Constable** and **Jess Melbourne-Thomas**, 10 Dec 2021

Training sessions

Cultural training course by the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS)



Workshop: 'How to communicate science on social media' –by Zoe Kean, 14 October 2021



Social events



Students networking event at the Queen Domain, Hobart/nipaluna

CMS end of the year gathering at the UTAS student accommodation foyer after a year with very limited social interactions!

GRADUATED STUDENTS

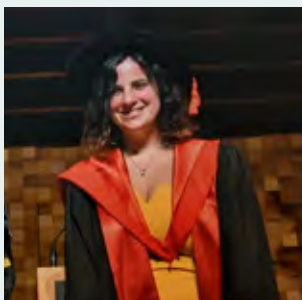
Lynna Cortes Rueda, PhD



Coco Cullen-Knox, PhD
(graduated in absentia)



Elisavet Spanou, PhD



Emma Hamasaki,
Bachelor of Marine and
Antarctic Science



Bianca Haas, PhD



Dr Bianca Haas with her supervisory team Prof Jeff McGee, Dr Aysha Fleming and Prof Marcus Haward.

Sheryl Hamilton, PhD



Dr Sheryl Hamilton with her supervisors Prof Mary-Anne Lea and Prof Marcus Haward, and colleague Toby Travers.

Hannah Fogarty, PhD



Dr Hannah Fogarty with one of her supervisors Prof Greta Pecl, Hannah also received the IMAS 2021 Most Inspiring PhD Award.

Eloise Wilson,
Master of Marine and
Antarctic Science



Kathy Willis, PhD
(graduated in absentia)



SUBMITTED THESES

Kelsey Richardson, PhD thesis: Global Ghost Gear Analysis: Mapping fisheries gear loss, fates and impacts around the world. Supervised by Chris Wilcox, Denise Hardesty, Joanna Vince and Stewart Frusher.

Ana Catarina Serra Gonçalves, PhD thesis: Assessing temporal trends of marine debris and the effectiveness of individual plastic debris mitigation strategies at a national and local level in Australia, supervised by Jennifer Lavers, Alex Bond, Andrew Fischer, and Heidi Taylor.

Manon Simon, PhD thesis: Governing Cloud Seeding in Australia and the United States: Lessons for Regional Solar Radiation Management, supervised by Jan McDonald, Kerryn Brent and Jeff McGee.

Danielle Smith, PhD thesis: Establishing marine protected areas in the high seas; from the initial planning process through to the ongoing management, monitoring and enforcement measures, supervised by Jeff McGee and Julia Jabour.

Brigette Wright, Masters thesis: Reciprocal learning opportunities between climate-driven species redistribution and invasion ecology, supervised by Gretta Pecl, Valeriya Komyakova, Cascade Sorte and Morgan Tingley.

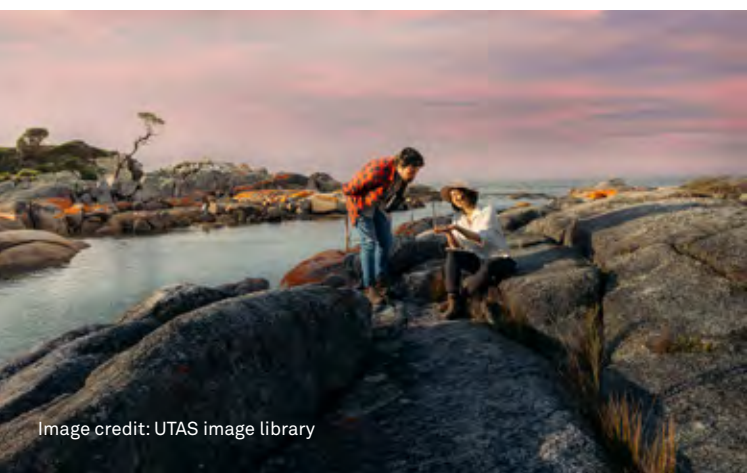
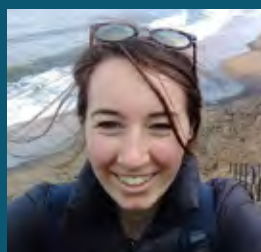


Image credit: UTAS image library

VISITORS

ONE visitor made it to CMS during COVID-times, all the way from Melbourne!



Lily Ahlemeyer, University of Melbourne, CSIRO training internship working with Rowan Trebilco.

Greetings from students from Taiwan

Due to the COVID travel restrictions we only had one visitor this year, but we received this very nice email from our previous visiting students from Taiwan, who attended the CMS Summer School in early 2020. We wanted to share these greetings with all of you.

Hello CMS, it has been almost two years since we're in Tasmania. We had our first reunion meeting after the internship ended and talked a lot of the time we had there. Thank you for the experience and your hospitality for all of us. It has been such great memories and a blessing in our lives.

Four of the five of us have all graduated from Masters degree and are all working as research assistants in different academic institutions across Taiwan. Hsin Hung and I have also finished our military service in Taiwan. Tung-Yao is still working the last year of PhD. We miss you and hope you and your family and the friends in CMS are all well throughout the pandemic. Hope we can cross paths with you again in the future!

Ps. The picture is taken during our short reunion, sending our love from Taiwan!

*Yours sincerely,
Samuel Tsao*

From left to right: Samuel Tsao, Shin-Hung Jiang, Hsiao Yi Ting, Tung Yao Hsu, and I-Wen Chen.



FUTURE PROJECTS & EVENTS FOR 2022

- **Narissa Bax** was invited to participate in 100 Climate Conversations at the Powerhouse Museum, Sydney, <https://100climateconversations.com/>.
- **Peter Puskic, Catarina Serra-Goncalves** and **Kathy Willis** will be presenting as part of the upcoming ECOP lead Ocean Plastic workshop. "The Future of Ocean Plastics: Designing Diverse Collaboration Frameworks" 5th -7th April 2022.
- **Peter Puskic**, *Boundaries*. Exhibition at Contemporary Art Tasmania as part of MONA FOMA (29 January – 6 March 2022), Tess Campbell and Sam Mountford created a spatial installation to present their new film *On the Shoreline*, which has been influenced by the research Peter Puskic. *Boundaries* explores states of observation and vision, meshing scientific research with personal stories, conflating the temporal and spatial scales implicit within our contemporary materials and lives. Using the 'shoreline' as a strategy to probe the environmental and existential concerns of our time, *Boundaries* seeks to dissolve the conditions of knowledge and reason to which we are attached <https://contemporaryarttasmania.org/programs/boundaries/>
- **Eloise Wilson** will be presenting a webinar for the Blue Economy CRC coming up in May on the energy requirements of offshore aquaculture as a market for ocean renewable energy. This is a collaborative project with the United States Department of Energy, the Pacific Northwest National Laboratory, CSRIO and The Blue Economy CRC.



Future Metal Aquatic a Future Seas Thriller

In the year 2030, the Reverie floating platform is the ultimate in offshore luxury: a high-end tourist destination, fish farm and energy source. Without warning, it's been taken down by hijackers. Now, Reverie designer Lara Nguyen is reluctantly pulled out of retirement to help infiltrate the facility she left a decade ago - and to face her own dark secrets.

Full Metal Aquatic is a high-stakes action thriller set in the oceans a decade from now. But crucially, the story takes place in two different futures. Working with researchers from the [Future Seas](#) project, writers [Jordan Prosser](#) and [David Finnigan](#) will tell the story of the Reverie's hijacking in the future we hope to see - and in the future we want to prevent. It is designed to be a light-hearted and creative way to explore what our future could feasibly look like, depending on the actions we take now.

When:

2 & 3 February 2021 online

<https://futureseas2030.org/full-metal-aquatic-a-future-seas-thriller-recording-and-interactive-game/>

Symposium Connecting the dots: Knowledge brokering for impact and innovation

This symposium is co-organised by **Jess Melbourne-Thomas** and aims to empower early- and mid-career researchers to recognise and understand how knowledge brokering can enhance the impact and innovation of their research, contexts in which they are already knowledge brokering, and the skills and practice of knowledge brokering over 4 days sessions during February and March 2022.

Weblink to event resources: <https://aas.eventsair.com/knowledge-brokering/resources>

The symposium has been made possible thanks to funding from the Theo Murphy Initiative (Australia), through the Australian Academy of Science, CMS and CSIRO.



Expert panel Climate change matters: the Australian context

To coincide with the release of IPCC second part of its 6th Assessment Report – Climate Change 2022: Impacts, Adaptation and Vulnerability, based on the work from IPCC Working Group II., the first global update on climate change since 2014, CMS will host an in person and online forum on Tuesday 1 March to help inform and support policy makers and those interested in how Australia can reduce its vulnerability to the impacts of climate change.

The panel will include CMS Lead Authors of the IPCC assessment reports **Gretta Pecl**, **Jess Melbourne-Thomas** and **Andrew Constable** and climate experts from CSIRO and IMAS, chaired by **Alistair Hobday**.

<https://marinesocioecology.org/climate-change-matters-the-australian-context/>

Special Issue: Future Seas 2030: Pathways to Sustainability

The Special Issue: Future Seas 2030: Pathways to Sustainability in the journal Reviews in Fish Biology and Fisheries was released in mid-March and is the product of a large-scale interdisciplinary and transdisciplinary collaboration that includes 120 ecologists, psychologists, Indigenous scholars and knowledge holders, public health and education experts, philosophers, oceanographers, climate modelers, economists, social scientists, engineers, mathematicians, natural resource managers and information and communications technology researchers, as well as governance, ethics, finance and insurance, and law and policy experts from 12 countries and 25 nationalities. Collectively, this Special Issue explores possible futures for our oceans by 2030 for a series of ‘key’ societal challenges, from climate change, food security and biodiversity, through to issues of ocean governance, ocean literacy and the blue economy.

We would like to thank all the participants, collaborators and supporters who made it possible.

Figure 1 from the editorial paper by Pecl et al 2022 showing graphical abstracts, or visual depictions of the two possible futures explored and described.

	Business-as-usual 2030	More sustainable 2030
Indigenous & Traditional Peoples' perspectives  Fischer et al 2021		 Not in the future. Ocean traditions
Food for all  Farmery et al 2021		
Offshore Blue Economy  Novaglio et al 2021		
Climate-driven species redistribution  Melbourne-Thomas et al 2021		



Image credit: Cayne Layton

ARC Discovery grants commencing in 2022

- Audzijonyte A**, Krueck N, Richards S, Andersen KH. Universal properties and application of species size distributions. ARC Discovery grant, \$456,000
- Leane E**, Philpott C, Samartzis P, Williams S, Walch M, Nielsen N, William Fox, Yasuda S. Creative Antarctica: Australian Artists and Writers in the Far South. ARC Discovery grant, \$314,000
- Morrison T, **Pecl P**, Hughes T. Novel governance for marine ecosystems in rapid transition. ARC Discovery grant, \$401,000
- Vince J, Haward M, Fulton E, Stephenson R**. Governing during an ocean climate crisis: Building integrative capacity. ARC Discovery grant, \$464,726

ANNEX

EXECUTIVE TEAM

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Beth Fulton, Deputy Director
Cecilia Villanueva,
Executive Support Officer

STEERING COMMITTEE

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Beth Fulton, CSIRO
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Dugald Tinch, TSBE
Gillian Slocum, AAD
Gretta Pecl, IMAS
Ian Dutton, DPIIWE

Ingrid van Putten, CSIRO
Jan McDonald, School
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Jenn Scott, School of
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Joanna Vince, School of
Social Sciences

Jonny Stark, AAD
Martin Exel, Austral
Fisheries
Rich Little, CSIRO
Satoshi Yamazaki, TSBE
Terry Bailey, IMAS

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Karen Alexander & Pedro Fidelman
Environmental Change & Adaptation:
Ingrid van Putten & Rowan Trebilco
Knowledge Production:
Jess Melbourne-Thomas
Science Engagement & Impact:
Rachel Kelly & Geoff Syme
Sustainable Futures & Planetary Health:
Kirsty Nash & Anna Farmery

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Catarina Serra Goncalves
Tormey Reimer

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Malcolm Johnson

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Bianca Haas
Coco Cullen-Knox
Dean Greeno
Elisavet Spanou
Eloise Wilson
Emma Hamasaki
Florence Briton
Hannah Fogarty
Joseph Wentta

Kathy Willis
Larelle Bossi
Lynna Cortes Rueda
Mary Mackay
Maree Fudge
Rachel Kelly
Richard Cottrell
Sheryl Hamilton, IMAS
Yannick Rousseau

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Community New Caledonia
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Patrick Hudson, IMAS
Undergrad
Emma Hamasaki, IMAS
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