



NZOAC and PI-TOA Newsletter

A wide-ranging session on marine carbon at last year's NZMSS stimulated formation of the Aotearoa Marine Carbon Forum (AMCF). The AMCF Steering Committee has since built on directions outlined in an article in [The Conversation](#), with a call for a national assessment of marine carbon dioxide removal (mCDR). This assessment will provide evidence-based evaluation of different techniques, including scientific, social and governance perspectives, to underpin decisions on the potential role of marine carbon dioxide removal in New Zealand's climate response. If you are interested in joining the AMCF or would like a draft of the assessment framework, contact [Rebecca McLeod](#) or [Cliff Law](#).

The Oceania node of the SOLAS mCDR global network also met recently to begin to develop standards for mCDR initiatives concerning Monitoring, Reporting, and Verification (MRV). Currently, the Oceania node has several participants from Australia and New Zealand, but other PI-TOA countries and territories are not as well represented. If you are interested in participating, contact [Linn Hoffmann](#).

WMO's recently released [State of the Global Climate 2023](#) confirms that global mean ocean pH has been steadily declining at rates not seen for at least the past 26,000 years. The [report](#) recognised the efforts of IOC-UNESCO, GOA-ON, and OARS in increasing the number of OA observations. However, the report also highlighted that many regions remain under sampled and that the current coverage is inadequate to determine trends.

Closer to home, regional monitoring is supported by the [Pacific Island Ocean Acidification Centre](#) (PIOAC). Last month, staff from PIOAC attended an advanced sensor training programme hosted by The Ocean Foundation at the University of Hawaii. This training increased the capacity of the PIOAC to assist OA researchers throughout the Pacific, particularly recipients of GOA-ON in a box kits.

Ocean acidification in the New Zealand and the Pacific

- NZOAC members Natali Delorme and Jess Ericson (Cawthron) are leading a special issue for the NZJMF on Effects of Climate Change on Aquaculture and Fisheries: Current and Future Impacts, Mitigation and Adaptation. See [here](#) for more information.
- A new study in Nature predicts [severe OA in Antarctic Marine Protected Areas](#) by the end of the century, with ubiquitous undersaturation under 3 of the 4 emission scenarios studied.
- This month the newsletter team says "Goodbye and thank you" to Rebecca Zitoun ([IMOS](#)). Rebecca was instrumental in the 2021 redesign of the newsletter and has been a valuable contributor during her three years with the team.

Resources

- The [2023 annual report of the OA Alliance](#) highlights their recent impact in supporting the work of their government and science partners to develop [OA Action Plans](#) and advance climate-ocean commitments.
- [Pier2Peer scholarship applications](#) are now open. Awards, typically USD 5000 are available to support international collaborations between mentors and mentees resulting in increased technical capacity, cooperation, and knowledge. Deadline: 15 April 2024.

- A recent article by the World Economic Forum summarises [the economic benefits of healthy oyster reefs](#) and discusses the need for policymakers, marine farmers, and communities to work together to protect oyster reefs from OA.
- [Back to Blue](#), an initiative of Economist Impact and The Nippon Foundation, has produced a series of OA resources including [An Ocean Crisis in the Making](#), which explains the science and impacts of OA, and [Ocean Acidification: time for action](#), which discusses the role of action plans in addressing OA.
- A new open-access paper on [uncertainty sources for measurable ocean carbonate chemistry variables](#) summarises recent progress in reducing carbonate system uncertainties.
- A new version of the R package [seacarb](#) is available.
- **Webinar:** [GOA-ON mCDR Working Group Webinar](#), **16 April**
- **Streaming:** The panel discussions in Monaco Ocean Week's [Marine carbon dioxide removal: From blue carbon to ocean alkalinity enhancement](#) include discussions on restoring blue carbon and ocean alkalinity enhancement
- **Streaming:** OCB webinar [Biogeochemical dynamics in deltaic sediments: The importance of the organic matter origin and event-driven variability](#), Christophe Rabouille, Laboratoire des Sciences du Climat et de l'Environnement

Selected recent articles from our members

- [Pacific Anthropogenic Carbon Between 1991 and 2017](#), Carter B.R.; Feely R.A.; et al., Global Biogeochemical Cycles
- [Environmental driving forces and phytoplankton diversity across the Ross Sea region during a summer–autumn transition](#), Cristi A.; Law C.S.; et al., Limnology and Oceanography
- [The endemic kelp *Lessonia corrugata* is being pushed above its thermal limits in an ocean warming hotspot](#), James C.; Layton C.; et al., Journal of Phycology
- [Twenty-six years of phytoplankton pigments reveal a circumpolar Class Divide around the Southern Ocean](#), Hayward A.; Pinkerton M.H.; et al., Communications Earth and Environment
- [Deep-ocean seaweed dumping for carbon sequestration: Questionable, risky, and not the best use of valuable biomass](#), Chopin T.; Costa-Pierce B.A.; et al., One Earth
- [Differential responses of selectively bred mussels \(*Perna canaliculus*\) to heat stress—survival, immunology, gene expression and microbiome diversity](#), Ericson J.A.; Laroche O.; et al., Frontiers in Physiology
- [Significant CO₂ emission in the shallow inshore waters of the southeastern Yellow Sea in 2020](#), Ko Y.H.; Shin S.-H.; et al., Marine Pollution Bulletin

Conferences, events, and workshops

- [Pathways Connecting Climate Changes to the Deep Ocean: Tracing Physical, Biogeochemical, and Ecological Signals From Surface to Deep Sea Workshop](#) (hybrid), Lewes, Delaware, USA, **23 - 25 April 2024**
- [Australian and New Zealand Marine Science Conference](#), Hobart, Australia, **15 - 20 September 2024**
- [XI SCAR Open Science Conference](#) (Antarctic Science: Crossroads for a New Hope), Pucón, Chile, **19 - 23 August 2024**
- [IMBIZO 7](#) (Transitioning towards sustainable ocean governance by 2030: Commitments and Challenges), Rabat, Morocco, **23 - 26 September 2024**

Jobs

- [Senior Research Officer – Marine Spatial Ecology](#) with CQUniversity in Townsville, QLD. Closes **12 April**.
- [Postdoctoral Fellowship Ecological Adaptation and Recovery](#) with the Australian Institute of Marine Science in Townsville, QLD. Closes **15 April**.
- [Postdoctoral Fellowship – Ecological Adaptation and Recovery](#) with the Australian Institute of Marine Science. Closes **15 April**.
- [Postdoctoral/Research Fellow](#) with the Australian National University in Canberra, ACT. Closes **19 April**.
- [Program Manager – Australian Ocean Data Network](#) with the University of Tasmania in Hobart, TAS. Closes **21 April**.
- [Senior Hydrogeologist](#) with the Pacific Community in Suva, Fiji. Closes **28 April**.
- [Pacific Island Fisheries Professional](#) with the Pacific Community in Nouméa, New Caledonia. Closes **5 May**.
- [Lecturer Oceanography](#) with the University of New South Wales in Canberra, ACT.
- [Seascapes Project Support Officer](#) with the Nature Conservancy in Melbourne, VIC.
- [Senior Marine Scientist](#) with RPS in Melbourne, VIC.
- [Graduate Environmental Consultant](#) with Aventus Consulting Pty Ltd in Melbourne, VIC.
- [Aquatic Ecologist](#) with Biologic Environmental Survey in Perth, WA.
- [PhD – Methane Cycling in Mangroves in Australia](#) with the Southern Cross University in Lismore, Australia. Closes **14 April**.
- [PhD – Genomics to inform climate smart resilience breeding in the marine finfish snapper](#) with the New Zealand Institute for Plant & Food Research Limited in Nelson, New Zealand.

If you have news, opportunities, resources, or a published article you'd like included in the next newsletter, let us know by replying to this e-mail.

If you would like to subscribe to the NZOAC / PI-TOA newsletter mailing list, reply with "Subscribe" in the subject line. If you would like to unsubscribe from this mailing list, reply with "Unsubscribe" in the subject line.

Cheers,

Christina McGraw (University of Otago), Rebecca Zitoun (IMOS), Kim Currie (NIWA), Lea Muetzel (University of Otago)