

NEWSLETTER
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OCEANS PAST INITIATIVE

Change.

Twenty-five Ocean Past News editions! From North Sea skates and sharks in that first News in July 2016 and an early edition on deep time, to human history in the Baja Peninsula, shipwrecks in New England, and changing whale culture in the Tasman Sea, it has been a pleasure to bring such a wide range of fascinating, insightful, and excellent work to your inbox. Yet, one thing we can always count on is change – this will be my last Oceans Past News as editor.

As we all make new choices, change jobs and change locations, we all come up against the universal limiting currency: time. Mine has been well-spent here, but I no longer seem to find enough of it! That said, it may also be time for a new hand at the helm. Thank you to all the readers who have sent along your notes in response to a News, and to the many who sent content and worked with me to make the Oceans Past News what it is. It is a tribute to all of your support – both as readers, as contributors, and as researchers doing incredible work.

I look forward to keeping up, now as a reader. Take care, and safe harbors.

Emily S. Klein, OPN Editor

Pew Charitable Trusts, Washington DC, USA†



OCEANS PAST SPOTLIGHT*

Leveraging the past at the UN Ocean Conference

Lisbon, Portugal, 27 June – 1 July 2022)

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and Andre Carlo Colonese¹*

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Last month, ocean leaders from various sectors across the planet convened in the week-long II UN Ocean Conference (UNOC -

Lisbon, Portugal, 27th June to 1st July). The broad conference theme, "Scaling Up Ocean Action Based on Science and Innovation for the Implementation of Goal 14: Stocktaking, Partnerships and Solutions", set the stage for the negotiation and agreement on a high-level Political Declaration entitled "**Our ocean, our future, our responsibility**".

† Views expressed here are my own and do not necessarily reflect that of my employer

*Each issue of Oceans Past News includes a feature article, either as an **Oceans Past Spotlight** or as **10 Questions**. If you would like to be considered for either, or to nominate a colleague or mentee, please contact Emily Klein at emily.klein04@gmail.com.

Two projects funded by the **European Research Council** (ERC-COG TRADITION, ERC Synergy Grant 4-OCEANS) highlighted the importance of long-term human-ocean interactions as the foundation of present day local traditional knowledge, which is gaining prominence in ocean management. These past interactions must be understood in order to *“Recognize the important role of indigenous, traditional and local knowledge, innovation and practices of indigenous peoples and local communities, as well as the role of social science in planning, decision-making and implementation”* (article 14.a of the Political declaration).

Leopoldo Gerhardinger (ERC-COG TRADITION) delivered a plenary intervention and a written statement entitled **“Bridging Shades of Blue”**, which was also endorsed by the International Science Council, Ocean Knowledge-Action Network and its International Project Office, Future Earth project, Brazilian Future Ocean Panel, The Oceanographic Society, International Collective in Support of Fishworkers, Nova FCSH (Portugal), and Oceans Past Initiative (OPI).

Cristina Brito (ERC Synergy Grant 4-OCEANS) delivered the manifesto **“Humanities 4 the Ocean”** (link below), which was endorsed by the UNESCO Chair Ocean’s Cultural Heritage, Centre for the Humanities (NOVA FCSH), Trinity Centre for Environmental Humanities (TCD), Oceans Past Initiative, Humanities for the Environment Observatories, ERC TRADITION (Universitat Autònoma de Barcelona), ERC DUNES, Centre for History (University of Lisbon), Underwater Cultural Heritage of Stone Fish Weirs, Associação Para as Ciências do Mar, BRIDGES Sustainability Science Coalition, Ocean Decade Heritage Network, and Maritime Archaeology Trust (UK).

Both statements highlighted one shade of ‘Blue’ deserving more attention – the oceans past, our **Blue Heritage**, which is often not given enough credit for innovating towards ocean sustainability. We promoted the voice of the global ocean humanities and social sciences communities during the event, calling for the global ocean community to engage with ocean citizens’ knowledge and collective action to help bridge the divide between visions of **“Blue Economy”** and **“Blue Justice”**.



Two views on the plenary speech by Leopoldo Gerhardinger



Special session led by Cristina Brito

A shortlist of key recommendations to bridge this deep divide included calls for support to better acknowledge oceans past in policy-making, and long-term marine-related networks and transdisciplinary programs to enable the co-creation of solutions to ocean problems by local citizens together with scientists, such as the designation of a new Intergovernmental Panel for Ocean Sustainability (IPOS). The statement also called for centering social equity and traditional ecological knowledge of small-scale fishers at the heart of sustainable marine resource use, ocean conservation and blue economy innovations.

The Lisbon conference was an unparalleled opportunity for networking and envisioning of new, critical collaborations between these institutions and ocean research communities across the globe.

UN Political Declaration:

<https://documents-dds-ny.un.org/doc/UNDOC/GEN/N22/389/07/PDF/N2238907.pdf?OpenElement>

UN Decade Conference Plenary talks: <https://media.un.org/en/asset/k1e/k1ee034tp?kalturaStartTime=10594>

Statement - Bridging Shades of Blue:

https://sdgs.un.org/sites/default/files/2022-07/LeopoldoGerhardinger_Researcher_International_Science_Council.pdf

Manifesto - Humanities 4 the Ocean:

<https://cham.fcsch.unl.pt/destaque.php?p=1260> and <https://www.tcd.ie/tceh/projects/manifesto/>

Call to action from small-scale fisheries: <https://www.cffacape.org/ssf-call-to-action>

RESEARCH & OTHER NEWS

Trilobites' growth may have resembled that of modern marine crustaceans.

Trilobites - extinct marine arthropods that roamed the world's oceans from about 520 million years ago until they went extinct 250 million years ago at the end of the Permian period - may have grown in a similar fashion and reached ages that match those of extant crustaceans (Pauly and Holmes 2022).

Thus, the author and a real paleontologist, **Dr. James Holmes of Uppsala University** in Sweden, showed that, some 450 million years ago, the Ordovician trilobite *Triarthrus eatoni*, reached a length of just above 4 cm in about 10 years, and their growth curve was similar to that of small, slow-growing crustaceans today.

T. eatoni lived in low-oxygen environments and responded as do extant crustaceans exposed to hypoxic conditions, which exhibit low growth rates compared to situation when the surrounding water is better oxygenated. Low-oxygen environments make it difficult for today's water-breathers to grow, and add to the difficulties of breathing through gills, which, as 2-D surfaces, cannot keep up with the growth their 3-D bodies (Pauly 2021). Thus, under hypoxic conditions, water-breathers must remain small if they are to maintain the rest of their body functions.

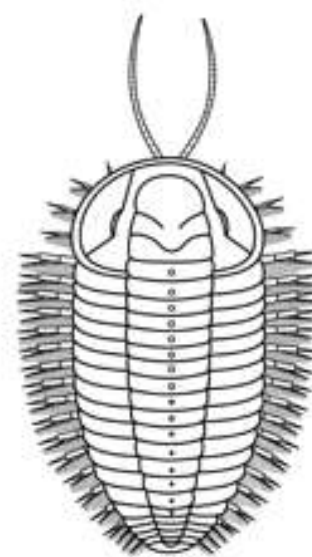
The growth of *T. eatoni* was inferred through the application of the ELEFAN method to length-frequency data, a method developed within fisheries science and marine biology for studying the growth of fish and invertebrates lacking the physical markings that indicate their age (Pauly and David 1981). The data to perform this analysis was obtained from an article by Cisne (1973) who had attempted to study the length frequency distribution of 295 exceptionally preserved trilobites collected at 'Beecher's Trilobite Bed' in New York State, but had assumed that their growth was "linear," which was very wrong.

After estimating the parameters of a growth model widely used in fisheries science, the von Bertalanffy growth function, we compared our results with published data on the growth of extant crustaceans. We found that the growth parameters estimated for *T. eatoni* were well within the range of recent, slow-growing crustaceans. This suggests that respiratory constraints, which currently clearly impact crustaceans, fishes, and other water-breathers via ocean warming and deoxygenation, are likely, as also suggested by Ward (2006), to have impacted marine animals hundreds of million years ago, and shaped their evolution. ~ *Daniel Pauly, University of British Columbia, Vancouver, B.C., Canada*

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Cisne JL. 1973. Life History of an Ordovician Trilobite *Triarthrus Eatoni*. *Ecology* 54:135–142.

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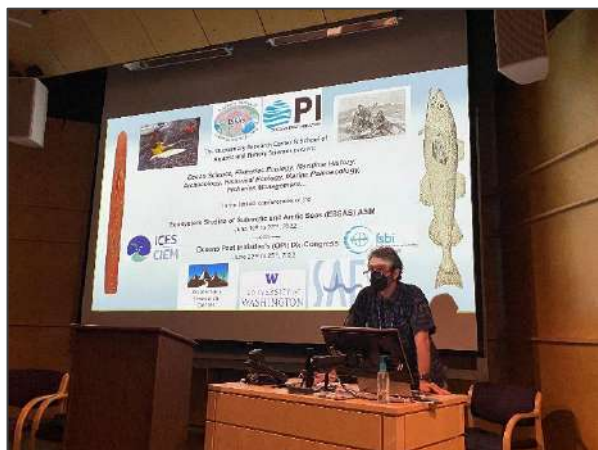


'The Ordovician trilobite *Triarthrus eatoni* (drawing by Elaine Chu)'.

Pauly D, and David N. 1981. *ELEFAN I*, a BASIC program for the objective extraction of growth parameters from length-frequency data. *Berichte der Deutschen wissenschaftlichen Kommission für Meeresforschung* 28:205–211.

Pauly D. 2021. The Gill-Oxygen Limitation Theory (GOLT) and its Critics. *Science Advances* 7:eabc6050.

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Top: Ben Fitzhugh introducing the joint conference day with ESSAS. Bottom: In-person attendees of OPI IX.

The Oceans Past IX conference took place at the **University of Washington in Seattle, Washington (USA)** from 22-25 June, and was a wonderful opportunity for people from multiple countries, disciplines and perspectives to come together on understanding past ocean ecosystems, human-ocean interactions and our relationships with ocean and coastal regions through time. This hybrid event held presentations on a diverse range of topics, from world whaling, human experiences of living with the sea, changes to marine social-ecological systems, the significance of marine resources for human societies over time, and past oceans for future policy. As per past meetings, the conference showcased the exciting interdisciplinary research ongoing around the world, with more than 50 presenters representing fields including environmental history, historical ecology, anthropology and archaeology, among others. The research presented spanned ancient to modern periods and demonstrated multiple approaches to understanding past oceans. Of particular note was the joint plenary session with the Ecosystem Studies of Subarctic and Arctic Seas Annual Science Meeting, which provided an exciting opportunity for the two groups to network and discover shared research interests. We were also delighted to have so many early career researchers engaged in the meeting, both online and in-person, some supported financially by the International Council for the Exploration of the Sea and the Fisheries Society of the British Isles, with sponsorships also from the UW Quaternary Research Center and

School of Aquatic and Fisheries Sciences. We are grateful to the local organisers, with a special mention for Professor **Ben Fitzhugh's** superb hosting efforts, our sponsors, volunteers, keynote speakers, and all those who supported the conference by taking part. The future of Oceans Past is bright! ~ *Ruth Thurstan, OPI secretary*.

Eight thousand years of fisheries at WGHIST annual meeting. The annual meeting of the International Council for Exploration of the Seas (ICES) **Working Group on the History of Fish and Fisheries (WGHIST)** was held at the **University of Padova, Chioggia, Italy** in June. Chioggia is situated on the Venetian Lagoon, where fisheries management is documented for at least the last 800 years (<https://doi.org/10.1111/faf.12460>). The University of Padova hosts a historic zoological collection, the Clodia database (<https://www.nature.com/articles/sdata201418>) and a new catalogue of photographs documenting historic fishing practices in Chioggia (*La storia della pesca nel Golfo di Venezia attraverso le immagini*, photographic exhibition, Chioggia).

WGHIST members heard from social scientists, anthropologists, archaeologists, palaeontologists, fisheries scientists, modellers and architects with interests in how fisheries and the social-ecological systems that support

Chioggia wholesale fish market, on the Island of Cantieri, Chioggia shortly after being built in 1960 (left, photograph by Bruno Salvagno, courtesy of Alberto Salvagno, La storia della pesca nel Golfo di Venezia attraverso le immagini, photographic exhibition, Chioggia) and today (right). It is the largest fishing market in the Adriatic Sea, with landings coming from a large pelagic fishery and artisanal fishing using traditional gear in the lagoon.



them have changed through time. The work presented utilised data spanning >8000 years of human and natural history, and considered past fisheries practice, its impacts, the response of social-ecological systems to change, techniques for reconstructing ecological baselines, and how history can inform present-day management practices. Contact the chairs (b.a.caswell@hull.ac.uk) or find us online (<https://www.ices.dk/community/groups/Pages/WGHIST.aspx>) if you would like to learn more. ~ Drs. Bryony Caswell and Camilla Sguotti, WGHIST co-chairs.



Moleche or moulting green grabs (top right) are a local specialty and are still cultured in wicker baskets 'vieri' in the lagoon in Chioggia). Photographs of fishermen collecting freshly molted crabs from the vieri (top left in the 1940s-60s, courtesy of Gianna Donaggio, *La storia della pesca nel Golfo di Venezia attraverso le immagini*, photographic exhibition, Chioggia). Cleaning scallops by the canal in Chioggia in the 1960s (bottom left, photograph by Bruno Salvagno, courtesy of Alberto Salvagno, *La storia della pesca nel Golfo di Venezia attraverso le immagini*, photographic exhibition, Chioggia), hand collected scallops remain an important landing at Chioggia market (bottom right).

RESOURCES

New story map brings past mariculture to life for future sustainability and resilience. The **Pacific Sea Garden Collective**, a collaboration of Indigenous knowledge holders, community practitioners, university researchers, and artists, has launched a new interactive story map, *Sea Gardens Across the Pacific*: <https://www.seagardens.net/#map>. The resource work “is dedicated to the Ancestors who stewarded the ocean, learned from her rhythms, and passed on their knowledge to today’s stewards who are continuing these practices and reasserting their authority to steward their lands and waters.” This story map of sea gardens around the region shows ancestral mariculture for that has connected people and the sea for millennia, demonstrating the knowledge, ingenuity, governance, spirituality, and cultural practices of communities alongside their deeply rooted stewardship. The aim is to showcase this, as well as “reawaken” us to the diversity of sea gardens, and aligns with movements to reinvigorate mariculture that is resilient, sustainable, and equitable.



Screen grab of Sea Gardens story map.

RECENT PUBLICATIONS

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ANNOUNCEMENTS: CONFERENCES

Third meeting to focus on people's entanglement with nature. The Centre for History (CH-U Lisboa) of the University of Lisbon, the Centre for the Humanities (CHAM) of the NOVA University of Lisbon and the Centre for Administration and Public Policies (CAPP) of the University of Lisbon are pleased to be hosting the **International Meeting Histories of Nature and Environments: More Than Just Biodiversity** from the 24th to the 26th November 2022. The meeting will take place in Peniche with the support of the City Hall. Ecocultural systems, or integrated 'natureculture' views, will be the main object of our discussions, considering that different species, both human and non-human, and their interrelationships, can be placed at the centre of the debate and be discussed as agents in historical and current narratives. We are welcoming contributions from early stage to senior researchers, as well as from people outside academia. The conference will be held in English, and more information at <https://hnemeeting3.wordpress.com/>.

Save the Date: The **2nd Conservation Paleobiology Symposium** will be held **Feb 16-19, 2023**, in Gainesville, Florida (USA). More information about abstract deadlines and registration will be forthcoming.

XXI INQUA congress Time for change (<https://inquareoma2023.org/>) will be held in Rome, Italy from 14 to 20 July 2023. Abstract submission is open until 1 November 2022, via the link <https://inquareoma2023.org/abstract-submission/>.



CONTACT

Oceans Past News is a quarterly newsletter that aspires to both unite and inform the worldwide community interested in historical perspectives of marine social-ecological systems by providing insight into the wide-ranging and excellent work being done and the resources available. If you would like to propose work for OPN in the future, please contact **Emily Klein** (emily.klein04@gmail.com).

*The next Oceans Past News will be out in October 2022. We **warmly welcome submissions** through September 2022.*

RESOURCES

The Oceans Past News Archive is available online: <https://oceanspast.org/newsletter.php>

More on the Oceans Past Initiative: <http://oceanspast.org>

OPI on Facebook: <https://www.facebook.com/groups/122288493384/> and Twitter: [@oceans_past](https://twitter.com/oceans_past)