

A challenging New Year.

Working together was how I opened the Oceans Past News a year ago, at the beginning of a new decade. It seems impossible to have imagined the challenges to come following that January, and that continue into this New Year – but the past year also made clear the importance of collaboration. This value is again emphasized in our opening Oceans Past News for 2021. In our Spotlight, **Catherine West** and **Michael Etnier** discuss how scientists partnered with managers to meet common goals, and our announcements showcase new partnerships emerging to answer novel questions. A contribution from by **Ana Lucia Camphora** illuminates the importance of considering new perspectives on whaling in Brazil, while in Germany, **Hans Christian Küchelmann** highlights resources for colleagues on the other side of the world. This community is well versed in working together; let us remember the value in reaching out to one another as we look forward to the challenges ahead.

Emily S. Klein, OPN Editor

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Unangan man fishing for cod from a kayak in Cold Bay, Alaska (USA). Henry Wood Elliot, 1872. Freshwater & Marine Image Bank, Univ of Washington (https://commons.wikimedia.org/wiki/Category:Henry_W._Elliot#/media/File:FMIB_45880_Cod_Fishery_of_Alaska.jpeg).

OCEANS PAST SPOTLIGHT*

Applied Zooarchaeology: Connecting past and present fisheries over 6000 years

Catherine West (Dept of Anthropology & Archaeology Program, Boston University) and **Michael Etnier** (Dept of Anthropology, Western Washington University)

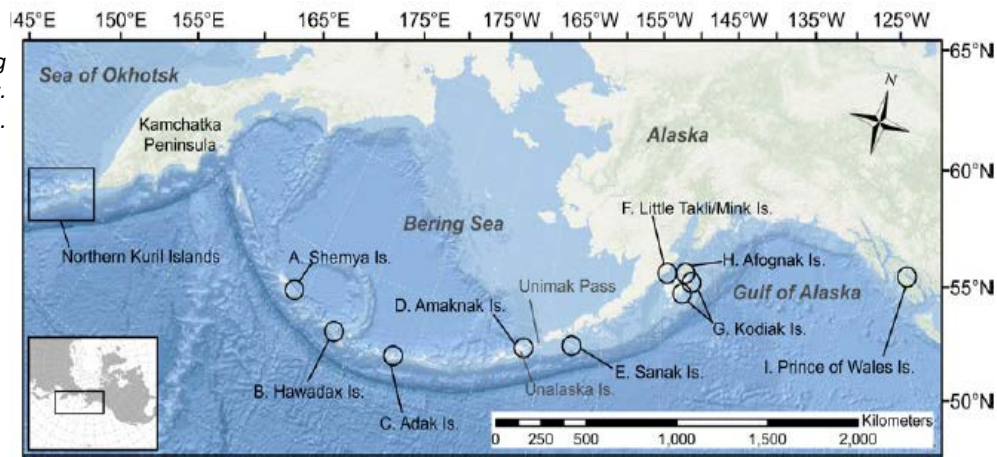
Alaska's modern Pacific cod (*Gadus macrocephalus*) fishery is ranked as one of the highest in value to the U.S. market, but severe heat waves in the North Pacific Ocean have led to dramatic decreases in population and closure

of the fishery. Because these conditions are predicted to persist, the long-term archaeological record may now provide a critical perspective. But, how do archaeologists create datasets that will be useful in an applied context?

To tackle this question, we formed an interdisciplinary group of archaeologists and fisheries managers to brainstorm the types of relevant data that can be extracted from the archaeological record. For this study, we settled on one measurement that clearly connects past and present fish populations: size distribution. While other archaeological studies have examined mean fish length through time to understand fisheries dynamics, we argued that mean length data do not fully represent population structure. Instead, size distributions demonstrate the range of fish sizes that were available to the fishery at any given time. Changes in these distributions are complex, and can be indicative of seasonality, biological processes, selection method (type of gear), harvest pressure, or environmental conditions.

*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.

Fig 1 from publication: North Pacific Ocean showing locations of the archaeological sites used for this study. Circles show the selection area for the modern datasets.



We examined reconstructed cod size distributions in ancient and commercial fisheries across the North Pacific Ocean - from the Kuril Islands to the Aleutian Islands and the Kodiak archipelago, to southeast Alaska - over 6,000 years. Using archaeological skeletal elements,

we estimated past fish size and made statistical comparisons to contemporary length data collected by North Pacific groundfish observers. To make the data comparable, we limited the modern catch data to the hook-and-line fishery, which most closely approximates traditional fishing methods. Our results suggest the largest fish are in the western and central Aleutian Islands, a biogeographic pattern consistent across our 6,000-year period. Additionally, the largest fish were found in areas where modern fishery effort was relatively light in both the archaeological and modern data sets. In areas where modern fishing was the most intense – particularly in the Eastern Aleutian Islands – there is evidence that fewer large fish are found in the modern populations than in the archaeological assemblages.

This work required collaboration between archaeologists and fisheries managers to strategize how best to use the archaeological record in a contemporary management context. From a management perspective, our results are

significant: using a measure common to both archaeological and contemporary fisheries, the data reveal important long-term trends in fish size across space and fishing effort. However, these data also underscored for us how critical it is to understand the nuances of local fishing activity. Moreover, Pacific cod have long been considered resilient; the integration of long-term and modern data is essential to understanding how cod stocks will respond to increasingly unpredictable conditions. *Publication: West, CF et al. (2020). Size distribution of Pacific cod in the North Pacific over 6 millennia. Quaternary Research doi:10.1017/qua.2020.70.*

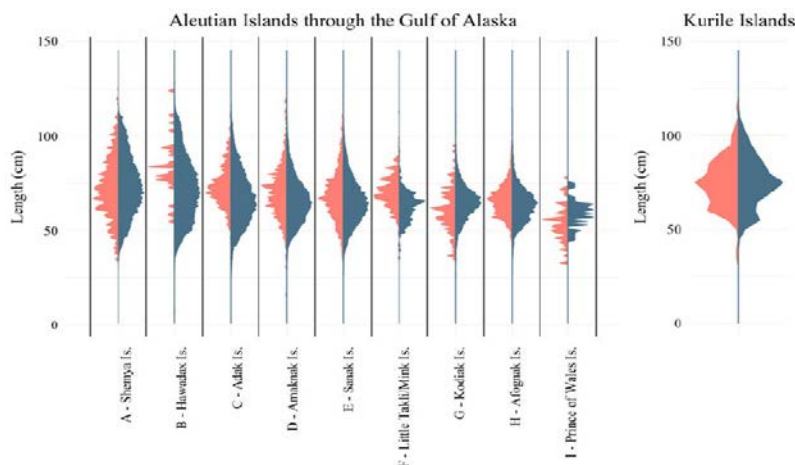


Figure 4 from publication: Comparing the length distributions of archaeological (in red) and modern (in blue) cod across the North Pacific.

RESEARCH NEWS

A deeper understanding of whaling in the South Atlantic (by Ana Lucia Camphora).

Em português: Entre os séculos XVII e XX, a atividade baleeira desenvolvida em diversos pontos da costa brasileira, impôs desdobramentos ecológicos, econômicos e culturais. Este artigo estabelece um fio condutor através de narrativas sobre um dos empreendimentos humanos mais predatórios para a biodiversidade marinha, que resultou na drástica redução de inúmeras espécies de grandes cetáceos. As vozes de Frei Vicente de Salvador, Emanuel de Santa Maria Itaparica, Sebastião da Rocha Pitta, João de Brito, José Bonifácio de Andrada e Silva, somadas a depoimentos sobre a atividade baleeira industrial do século 20, revelam modos de lidar com alteridades subjugadas pelo utilitarismo. A materialidade e a imaterialidade das interações entre as sociedades humanas e os grandes cetáceos formam uma memória coletiva e elementos de reflexão sobre desdobramentos éticos de uma historiografia do Atlântico Sul. A história não é inerte e se reescreve quando nos damos conta da insuficiência dos esquemas representativos para produção de sentido e memória. A partir de um alinhamento que integra a história ambiental

e os estudos inter-espécies, tais narrativas emergem como referenciais para redimensionar um real sempre acessado parcialmente, sob perspectivas emocionais, conceituais ou ideológicas. Em 1627, Frei Vicente de Salvador decreveu os bramidos de dor e a nuvem vermelha que, ao final, ocultava o sol. Cerca de um século depois, o poema de João de Brito revela que maior do que sua própria dor física é a magoa de não conseguir libertar o filho do arpão. No século passado, baleeiros percebiam como um grupo de cachalotes permaneceu em torno de uma baleia arpoada em uma expressão de solidariedade, o que permitiu que todos os animais fossem capturados. Acostumados que estamos ao isolamento em relação à nossa 'contraparte', as outras espécies de animais, experienciar esse reconhecimento comporta responsabilidades éticas e políticas. Neste estudo, busco demonstrar que a mudança de paradigma em relação a o que percebemos nos registros históricos constitui um componente plausível para dimensionar mentalidades coletivas com vistas ao aprimoramento dessas interações.

In English: From the seventeenth to the twentieth centuries, whaling activity in Brazil occurred in several locations along the coast, with ecological, economic, and cultural consequences. In my work, I drew upon diverse narratives to illuminate one of our most predatory enterprises, one that decimated various large cetacean species. The words of Friar Vicente de Salvador, Emanuel de Santa Maria Itaparica, Sebastião da Rocha Pitta, João de Brito, José Bonifácio de Andrada e Silva were added to testimony of activities conducted over the last century by a Brazilian whaling company to offer us new ways of understanding the reach of a naturalized authoritarianism. They shows how the materiality and immateriality of interactions between human societies and large cetaceans can contribute deeper ethical considerations to a historiography of the South Atlantic. In 1627, Friar Vicente Salvador described a whale screaming in pain after being wounded by human hunters, and a red cloud that covered the sun. Around a century later, João de Brito described a whale's grief in losing her calve to the harpoon, overlapping her own physical pain. In the last century, whalers observed a group of sperm whales surrounding one of their own who was caught, and because of their solidarity and refusal to leave their injured brethren, they, too, were taken by the whalers and all were killed. As my resulting paper collecting these voices shows, as familiar as we are with being isolated from our 'counterpart', other animal species, deeper recognition of their part in our collective history is an experience full of ethical and political commitments. History is not inert; it can be rewritten through questions that arise when we recognize the need for better representation of diverse experiences and memories. Aiming for an alignment between environmental history and interspecies studies, such emerging narratives can suggest ways to revisit history that are only partially accessible from emotional, conceptual, or ideological approaches on their own. My work and others like it also indicate the need for a paradigm shift in our examination of the past that allows us to better examine collective thoughts and improve interactions into the future.

Publication: Camphora AL (2021). *A atividade baleeira no Brasil entre os séculos 17 e 20: materialidade e subjetividade das relações entre sociedades humanas e grandes cetáceos no Atlântico*. ILECA Journal of Revista Latino Americana de Estudios Criticos Animales. <http://revistaleca.org/journal/index.php/RLECA>.

Historical work on Australia's lost shellfish reefs and related recovery project wins Eureka prize. Late last year, researchers at the **University of Adelaide, James Cook University, the University of Tasmania and the Nature Conservancy** were awarded the Environmental, Energy, and Science Eureka Prize for Applied Environmental Research for their work on understanding and restoring shellfish reefs. This recovery project was made possible by the work of Drs. **Heidi Alleway** and **Sean Connell**, who demonstrated that South Australia's shellfish reefs had been decimated to almost near extinction, and paved the way for informed restoration efforts, Australia's first such large-scale project. <https://www.adelaide.edu.au/newsroom/news/list/2020/11/25/shellfish-reef-project-wins-eureka-prize>.



Baleias - Pesca - Santo Amaro, Ilha (SP) Cartas topograficas do Continente do Sul e parte Meridional da America Portuguesa http://objdigital.bn.br/acervo_digital/div_cartografia/cart1033420/cart1033420fo19.jpg. (Detail edited by AL Camphora)



Leader of the German research team, Dr. Natascha Mehler, from the German Maritime Museum, surveying the trading site at Gunnister Voe, Northmavine, Shetland, which was in use around 1600. (Photo: Mark Gardiner)

COLLABORATIONS

Inclusion of island communities in the early modern European trade networks: the example of Orkney and Shetland. During the 15th to 18th centuries, the European trading system expanded across the globe, transforming how marginal societies were included in the continental trading system. For the Orkney and Shetland islands, this transformation was driven by merchants from German Hanseatic towns such as Bremen and Hamburg. In their search for a direct supply of dried fish, in high demand on the continental market, these merchants circumvented the Norwegian port of Bergen to trade directly with Orkney and Shetland. Interestingly, Shetland responded by developing export-oriented fisheries, but Orkney saw the

importance of marine resources decline, and their local economy instead shifted to exchanging agricultural produce with Scotland and Norway. The three-year German-British research project, **Looking In From The Edge (LIFTE)**, will explore the role of both island groups in the European economy during this period, interactions among merchants of different nationalities, and outcomes on local societies and economies – aiming to uncover why the island economies developed so differently. To answer these questions, an interdisciplinary team of researchers from the **University of Highlands and Islands** in Orkney and from the **German Maritime Museum** in Bremerhaven will use (zoo-)archaeological and historical methods and sources, undertaking excavations and surveys of existing material and building remains on the islands alongside local archival work.

Sarah Jane Gibbon (UHI) leads the UK team, which includes **Mark Gardiner** (Lincoln University), **Jen Harland**, **Ingrid Mainland**, **Paul Sharman**, **Julie Gibson**, **Dan Lee**, **Siobhan Cooke** and **Anne Mitchell** (UHI), and **Natascha Mehler** (University of Tübingen) leads the German team of **Bart Holterman** and **Philipp Grassel** (German Maritime Museum). LIFTE began in October 2020 and is funded by the Arts and Humanities Research Council (AHRC) and the Deutsche Forschungsgemeinschaft (DFG).

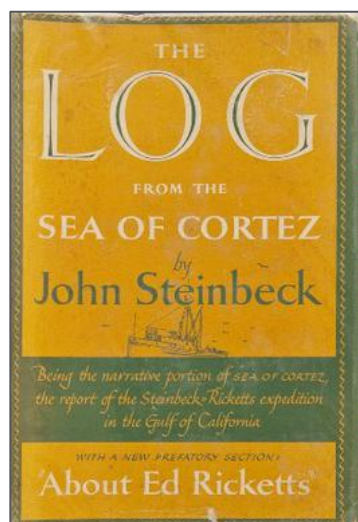
TRADITION ERC: Long-term coastal adaptation, food security and poverty alleviation in Latin America. TRADITION, an ERC-Consolidator Grant project, aims to assess the long-term development of small-scale fisheries in South America, and their legacy for present-day food security and poverty alleviation. The traditional knowledge of small-scale fisheries is crucial for sustainable fisheries and biodiversity, yet these fisheries and their actors are often historically invisible in most tropical and subtropical regions. Studies of traditional knowledge held by communities in the Atlantic Forest coast of Brazil have been limited to the past few decades, yet this area has supported people for at least the last 6,000 years, over periods of environmental change, and social and economic upheaval – including the introduction of agriculture and European colonisation.

Hosted in the **Department of Prehistory and the Institute of Environmental Science and Technology (ICTA)** at the **Universidad Autònoma de Barcelona** (Spain), and in the **Department of Archaeology** at the **University of York** (UK), this interdisciplinary team will investigate the historical ecology of subsistence fisheries along Brazil's Atlantic Forest during major cultural and environmental events. The team aims to test the role of fishing 1) in supporting agricultural expansion in pre-Columbian times, and 2) during the historical colonization and urbanization of this region, and 3) in deeper roots underpinning today's artisanal fisheries. TRADITION will focus on three areas, the southern (Santa Catarina State), southeastern (Espírito Santo State) and northeastern (Pernambuco, Bahia, Alagoas) coasts, and will combine a wide range of expertise including stable isotope and molecular analysis, palaeoecological analysis, analysis of written documents, and citizen knowledge and participatory approaches. The project aims to demonstrate the potential of marine historical ecology for pressing issues in tropical and subtropical coastal societies of South America, to train undergraduate and post-graduate students in South American archaeology and history, and to enhance the relevance of these disciplines to current development agendas (<http://erc-tradition.eu/>).



Sorting out materials after wet sieving. Picture from the excavation at the shell mound site Morro do Ouro that took place in August 2019

RESOURCES



Top: First edition of the book. Bottom: Steinbeck and Ricketts' route around the Gulf of California recorded in *The Log from the Sea of Cortez* (<https://commons.wikimedia.org/wiki/File:Steinbeck-route.png>)

Novel sources for understanding long-term change. John Steinbeck is well known for novels including *Of Mice and Men* (1937), *Grapes of Wrath* (1939), and *Cannery Row* (1945) and as winner of the Nobel Prize in Literature 1962 – but he is less well known for field research. Recently published in German, Steinbeck also wrote about a journey into the Gulf of California, which he undertook with his friend, the Monterey marine biologist **Ed Ricketts**. The book, *The Log from the Sea of Cortez*, originally published in 1951, is an interesting and sometimes strange piece of literature in itself, but of interest from a scientific perspective. Ricketts and Steinberg chartered a fishing boat for a six-week journey in March to April 1940 to cruise the Gulf coast, taking samples of marine and littoral species. A journey like this was unusual at the time; the region was scarcely inhabited and not yet fully mapped. The book is full of biological observations, including accurate taxonomical information with detailed location data, which, importantly, differs from the present-day status of many organisms. The data are generally qualitative, but many scholars urgently call for the integration of such knowledge, be that of Indigenous people, traditional fishermen, and others, into research to counteract the shifting baseline syndrome. In addition, the book's introduction denotes more detailed biological information may be in an earlier publication by Steinbeck & Ricketts from 1941 about the same journey entitled *Sea of Cortez. A Leisurely Journal of Travel and Research*. There may further data in Ricketts original diaries, which have been passed on to the **Hopkins Marine Station** at Stanford University in California (Steinbeck 2017, 347). I hope that such work is familiar to colleagues on the other side of the globe. Regardless, such books remind us the importance of scientists – of all types - who came before us, and whose knowledge we assume is lost, but may instead be only hidden in archives, in other disciplines, or perhaps in other languages, and whose imprint remains on the work we do today. ~ Hans Christian Küchelmann (*German Maritime Museum, Leibniz Institute for German Maritime History*).

Related resources:

Ricketts, EF (1939): Between Pacific Tides: An Account of the Habits and Habitats of Some Five Hundred of the Common, Conspicuous Seashore Invertebrates of the Pacific Coast Between Sitka, Alaska, and Northern Mexico, Redwood City

Steinbeck J & Ricketts EF. (1941): Sea of Cortez. A Leisurely Journal of Travel & Research

Steinbeck J (1951): The Log from the Sea of Cortez, New York

Steinbeck, J (2017): Logbuch des Lebens, Hamburg

RECENT PUBLICATIONS

The Fish Lands: German trade with Iceland, Shetland and the Faroe Islands in the 15th and 16th century. Late medieval German trade with the North Atlantic islands played an important role in the development of the North Atlantic export fisheries for the European market. In the 15th century, merchants from predominantly Hamburg and Bremen established direct trade relations with Iceland, the Faroes, and Shetland, where they acquired the dried fish in high demand in continental Europe, circumventing the Norwegian stockfish staple port of Bergen. Without the presence of a Hanseatic commercial infrastructure on the islands, these merchants developed new trade strategies. However, because it took place in the margins of the Hanseatic trade network, the subject has received little scholarly attention. *The Fish Lands* fills this gap, presenting a new study based on extensive archival research and insights from recent archaeological and historical literature. The book offers a critical re-evaluation of the economic and political conditions of the trade, and a comprehensive study of its organisation and the methods used to establish and

maintain networks between islanders and German merchants. The work also analyses the role and socioeconomic position of merchants in their hometowns. Collectively, the volume shows this trade network as anything but insignificant: it was a dynamic and integral part of the network connecting northern German cities, and highly relevant for the economic and environmental history of Northern Europe. *Publication: Holterman B, The Fish Lands. German trade with Iceland, Shetland and the Faroe Islands in the late 15th & 16th century (Berlin: De Gruyter, 2020) <https://doi.org/10.1515/9783110655575>.*

Camphora AL. (2021). **A atividade baleeira no Brasil entre os séculos 17 e 20: materialidade e subjetividade das relações entre sociedades humanas e grandes cetáceos no Atlântico.** *ILECA Journal of Revista Latino Americana de Estudos Criticos Animales.* <http://revistaleca.org/journal/index.php/RLECA>.

Early-Capistrán M, Solana-Arellano E, Abreu-Grobois FA, Narchi NE, Garibay-Melo G, Seminoff JA, Koch V, Saenz-Arroyo A. (2020). **Quantifying local ecological knowledge to model historical abundance of long-lived, heavily-exploited fauna.** *PeerJ* 8:e9494. <https://doi.org/10.7717/peerj.9494>.

Mahony KE, Lynch SA, Egerton S, Cabral S, de Montaudouin X, Fitch A, et al. (2020) **Mobilisation of data to stakeholder communities: Bridging the research-practice gap using a commercial shellfish species model.** *PLoS ONE* 15(9): e0238446. <https://doi.org/10.1371/journal.pone.0238446>.

Leonetti FL, Sperone E, Travaglini A, Mojetta AR, Signore M, Psomadakis PN, Dinkel TM, Bottaro M. (2020). **Filling the Gap and Improving Conservation: How IUCN Red Lists and Historical Scientific Data Can Shed More Light on Threatened Sharks in the Italian Seas.** *Diversity.* 12(10):389. <https://doi.org/10.3390/d12100389>.

Radde HD (2020). **Sea lion hunting strategies among late Holocene hunter-gatherer-fishers on Santa Catalina Island, California, USA.** *Quaternary International.* <https://doi.org/10.1016/j.quaint.2020.12.011>.

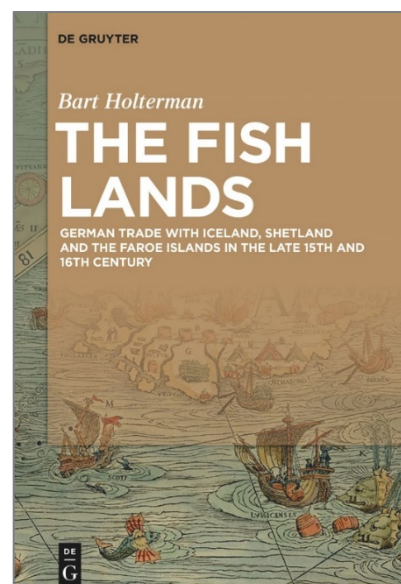
Smith KA and Lenanton RCJ (2021). **Almost forgotten: Historical abundance of eel-tail catfish populations in south-western Australian estuaries and their decline due to habitat loss and historical overfishing.** *Regional Studies in Marine Science* 41: 101605. <https://doi.org/10.1016/j.rsma.2020.101605>.

Ulrich SC & Handley SJ (2020). **From 'clean and green' to 'brown and down': A synthesis of historical changes to biodiversity and marine ecosystems in the Marlborough Sounds, New Zealand.** *Ocean & Coastal Management* 198: 105349. <https://doi.org/10.1016/j.ocecoaman.2020.105349>.

West CF, Etnier MA, Barbeaux S, Partlow MA, and Orlov AM (2020). **Size distribution of Pacific cod (*Gadus macrocephalus*) in the North Pacific over 6 millennia.** *Quaternary Research:* [doi:10.1017/qua.2020.70](https://doi.org/10.1017/qua.2020.70).

ANNOUNCEMENTS

TRADITION ERC presents webinar series in Marine Historical Ecology. The TRADITION ERC team has a new webinar series for anyone interested in Marine Historical Ecology and intersecting disciplines such as archaeology, biology, ecology, history and anthropology. The webinars are monthly and are free, online, and led by renowned researchers, academics and experts in the field. When possible, the webinars will be recorded and made available on our YouTube channel (www.youtube.com/channel/UC8h_-lv0mbJU-vVGZHIIBzg/featured). The series kicked-off in November 2020 with Dr. **Jon Erlandson** (University of Oregon), who discussed his decades-long experience in the Channel Islands of California, and was followed in December by Dr. **Camilla Speller** (University of British Columbia), reflecting on how biomolecular archaeology and ancient DNA can be used to track



MARINE HISTORICAL ECOLOGY WEBINAR SERIES

Historical marine ecology and conservation

Dr. Loren McClenachan
Colby College

Friday 15 January 2021
17:30 CET

The event is free and open to everyone but registration is required and closes 24 hours before the event.
To register go to <https://u.nu/hvqpm> or scan the QR code below

TRADITION: Long term coastal adaptation, food security and poverty alleviation in Latin America.
This project has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme under grant agreement No 817911

Indigenous stewardship practices in the North West Pacific. The third webinar, in mid-January, hosted Dr. **Loren McClenachan** (Colby College) delivering a lecture entitled “Marine Historical Ecology and Conservation”. These first two speakers showcased their experience working at the intersection of marine historical ecology with archaeology and biomolecular approaches, while the third looked at historical sources. The next round of speakers will be announced in early 2021 on our Facebook (www.facebook.com/erctradition) and Twitter (@ErcTradition).

PaleoSynthesis Project issues second call for submission of Big Questions in Paleontology. Based at Friedrich-Alexander University Erlangen-Nuremberg, the **PaleoSynthesis Project** aims to strengthen paleontology by developing a long-term research vision for the field. This vision will be defined by the community and founded on a growing collaborative network promoting international knowledge exchange. One way we will achieve this vision is through the identification of research priorities in the field. We invite you to participate by submitting your **Big Questions in Paleontology** at <https://bit.ly/3nHOS9S>. The survey will remain open until January 31, 2021. We encourage participation from all paleontologists (and associated disciplines), at all career stages. Following the survey, those who are interested are invited to participate in topic-specific working groups to refine the questions that have been submitted. These refined questions will form the basis of a manuscript, which will outline the questions that the paleontological community has identified as most important. If you have any questions, please contact **Jansen Smith** (jansen.smith@fau.de).



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 mid-April 2021. We warmly welcome submissions through mid-March 2021.

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