

People and the sea

Today, researchers worldwide are asking deeper and more informed questions about the relationships between human beings and the natural world. They are also increasingly reaching across disciplinary boundaries to engage these complicated, but necessary, inquiries. The study of the past is no different. While disparate in place and time, and accessing a wide range of resources and approaches, research in OPN, such as in this edition, also reveals common threads of interdisciplinary engagement to understand the intimate connection between people and the marine realm.



My dad, left, and a friend fish for wild salmon returning from the sea in an estuary along the coast of Kodiak Island, Alaska (USA).

Emily S. Klein, Southwest Fisheries Science Center & The Farallon Institute, USA
OPN Editor

OCEANS PAST SPOTLIGHT*

Cristina Brito, PhD: Manatees, bones, and stones - The value of marine tropical animals, products, and objects in the early modern Atlantic

Initiated in 2017, a research project on the past distribution, uses, and perceptions of manatees is taking place within the Environmental History and Sea research line at CHAM (Lisbon, Portugal), coordinated by **Cristina Brito**. The work will span five years, with a main goal of understanding how stories of humans and non-humans from the marine environment intertwined in the early modern Atlantic. Using manatees as case-studies, this project looks at early ecological practices by both local and foreign cultures as drivers of long-term exploitation that ultimately led to the extirpation and current critically endangered status of marine species.



Illustration by Elvira Gascon in a book by Durand¹ (1950, p. 27) showing a scene where Matto the manatee, kept as a pet by the Cacique Caramatexi for 26 years, interacted with local people in his "home" lake in a 16th century Caribbean Island².

Research on aquatic animals, peoples, and the early modern Africa and Americas have rarely been considered together, or across perspectives. In this project, different worldviews and concepts of nature will be addressed in a cross-cultural approach, focused on a time and place where both indigeneity and imperial motivations played an active role in shaping the human forces that acted upon aquatic environments and the animals that lived there. Severe anthropogenic impacts deeply changed habitats and natural populations, and altered seascapes and ways of living, up to the point where several aquatic species are now facing extinction, and this work also aims to understand how people viewed, used, and interacted with these species in the past, as well.

*Each issue of Oceans Past News includes a feature article to highlight research happening in our community, as either an **Oceans Past Spotlight** or as **10 Questions**, which will pose the same 10 questions to different leaders in our field. 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.

The research is already demonstrating that the West African woman-fish or mami-wata (*Trichechus senegalensis*), the West Indies manati (*Trichechus manatus*), and the south American ox-fish or iguaragua (*Trichechus inunguis*) were equally valued and loved across regions, but the reason why varied significantly. For example, Portuguese and Spanish written sources for the 16th and 17th centuries show the different relationships peoples and individuals had with manatees, and manatees were used as an important food resource, a medicinal item, a magical object, and even as a pet. Broadly, this historical work is also revealing that, even though there are some examples of empathy towards these animals, people placed greater value on their economic, pragmatic, and symbolic use. Consequently, evidence of protection towards manatees as individuals or populations did not emerge until the late 18th century.



Present distribution and past occurrence of *Trichechus* spp. Current distribution (blue, yellow and purple lines) were obtained based on IUCN shapefile (www.iucnredlist.org/technical-documents/red-list-training/iucnspatialresources) and plotted over the map by Zimmermann (1777)³. Map georeferenced using ESRI ARCGIS 10.5.1⁴. Symbols designate historical manatee occurrence, 16th to 19th centuries, obtained from period sources; symbols do not represent an actual georeferenced position.

The continuous (over) exploitation of all three manatee species continued to the present, and resulted in a highly constricted distribution range and the risk of extinction today. Moreover, and despite national and international protection, manatee populations across the South Atlantic continue to suffer from deliberate hunt as bushmeat, or simply out of ignorance. This project sheds light on previous distribution and abundance, but also how people have valued these animals across cultures, with direct implications for current and future management. ~ *Cristina Brito, Center for the Humanities, NOVA FCSH, Lisbon, Portugal.*

¹Durand, José. Ocaso de Sirenas: Manatíes en el siglo XVI. México: Tezontle, 1950. ²This work is supported by the project (IF/00610/2015) "Ngulu-maza, iguaragua or cow-fish? Local and global natural knowledge production and diffusion; practices and perceptions about marine animals in the Atlantic 1453-1786" (http://www.cham.fcsch.unl.pt/pr_descricao.aspx?Prol=68). Part of this investigation was conducted as an invited researcher at the John Carter Brown Library at Brown University. ³Zimmermann, E & T. Mundi Geographico Zoologica sistens Quadrupeds hueusque notos sedibusque suis adscriptos. T. Haak & Soc: Leiden, 1777. (JCB Map Collection <https://jcb.lunaimaging.com/luna/servlet/s/050i21>). ⁴Thank you to Celso Aleixo Pinto, Portuguese Agency of the Environment (APA), for his help with the map.

FAREWELL

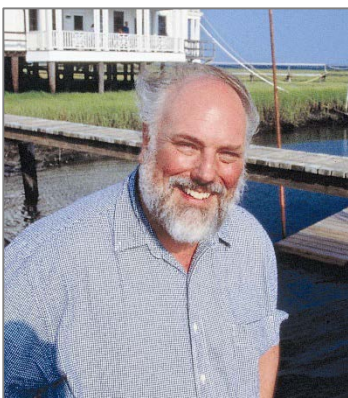


Photo: Rutgers University

Professor J. Frederick Grassle passed away July 6, 2018. Fred was an eminent marine scientist, field biologist, and pioneer in the study of hydrothermal vent communities. He helped establish the Rutgers oceanographic program, and was a founder of and absolutely critical to the early development of OBIS, the Ocean Biogeographical Information System, which today enables data sharing across the globe. Fred was also the first chairperson of the **Census of Marine Life**. His vision for the Census bootstrapped global activity in marine biology between 2000 and 2010. I came to know Fred well during our ten years together at the steering committee of the Census, and I was moved by his humanity and breadth of knowledge. His support was key to the approval by the Census in 2000 of **HMAP (History of Marine Animal Populations)**. Fred saw the potential

of historical investigations to renew and amplify our understanding of ocean change. We have lost a towering figure, a wonderful mentor and friend to many scientists as the numerous emerging tributes to him attest, e.g., https://en.wikipedia.org/wiki/J._Frederick_Grassle. ~ *Poul Holm, Trinity College, Dublin.*

A Brief Introduction on the Development of Chinese Marine Environmental History: For a long time, marine environmental science and history have been two separate fields in China. There were a few early marine history studies, but most did not connect historical work to the natural world. Relevant articles also exist in the journal, *Studies of Maritime History* (海洋史研究), supported by **Guangdong Academy of Social Science** and its Centre for Maritime History Studies, but this journal only goes back to 2011. In other words, Chinese historians rarely noticed the natural sides of marine history until recently.

It is not until a few years ago that the fields of history and marine environment studies truly connected in China. In 2008, **Bao Maohong** of Peking University emphasized the concept of Maritime Asia in one paper, "Maritime Asia: New Expansion of Environmental History Study". Then, in 2011, **李玉尚 (Li Yushang)**, a professor at Shanghai Jiaotong University, published the book *海有丰歉：黄渤海的鱼类与环境变迁 (1368-1958)* (*The Abundance and Shortage of the Sea: Fish and Environmental Changes in Yellow Sea and Bo Sea, 1368-1958*). Prof. Li's book was the first in China to focus on Chinese marine species through time and

via the lens of history. Based on Chinese and Korean historical documents, fishery archives, and oral stories, Prof. Li revealed how the species' structure, spatial distributions, and abundance changed in Yellow Sea and Bo Sea from 1368 to 1958, and discussed products made from the sea, such as salt, sauces, industrial materials, and medicine. Also in this work, Prof. Li found sudden climate change, hydrological changes, and institutional revolution to be three main drivers of ecological shifts. Prof. Li followed up his book with a paper, "The Forgotten Coastal Frontier: Research on Chinese Marine Environmental History", in which he calls on historians to incorporate the natural sciences.



李玉尚 (Li Yushang), of Shanghai Jiaotong University



Prof. Li's book, *海有丰歉：黄渤海的鱼类与环境变迁 (1368-1958)* (*The Abundance and Shortage of the Sea: Fish and Environmental Changes in Yellow Sea and Bo Sea, 1368-1958*).

Following the work of Profs. Bao and Li, the fields of maritime history and marine historical ecology are increasingly attracting scholars' attention. In May of 2018, an international conference, "**Environmental History of the Pacific World**", was held in Guangzhou, China, which focused on the interactions between humans and nature in the Pacific, through international trade, wars, cultural exchanges and utility of resources. More on this exciting conference in **Research News** below. ~ *Kunyan Zheng, Renmin University of China, Beijing*

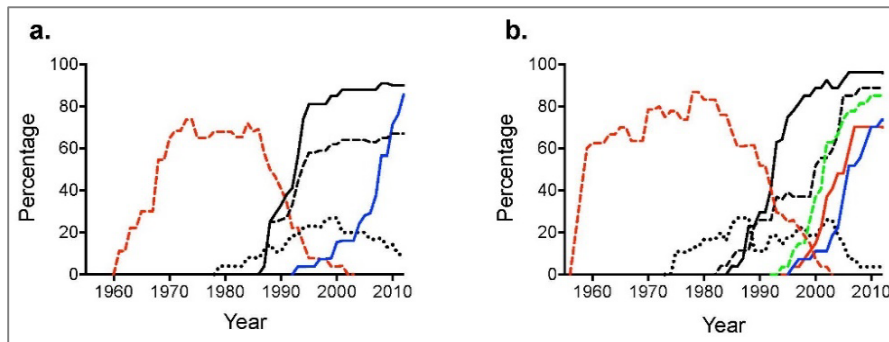
RESEARCH NEWS

Conference showcases environmental history in the Pacific: Held at the **Sun Yat Sen University** in Guangzhou, China, the **Environmental History of the Pacific World** conference convened from 24 to 26 May, 2018. Sponsored by The Rachel Carson Center for Environment and Society (Ludwig Maximilians University, Munich), the Department of History and The Center for Oceania Studies (Sun Yat Sen University), and The Center for Ecological History (Renmin University of China, Beijing), the conference attracted more than 20 papers by specialists in Pacific and especially East Asian environmental history. The majority of participants hailed from China, and it was exciting to meet so many young people attracted to marine environmental history. Papers included studies of shark fin fisheries, coral reef fisheries, whaling, and studies of management of and cultural perspectives on marine harvest. Areas covered included Hong Kong, PR China, North Korea, Pacific Russia and USA.

~ *Poul Holm, Trinity College, Dublin.*



Attendees of the Environmental History of the Pacific World conference, Guangzhou, China.



Percentage of interviewed (a) commercial and (b) recreational active fishers that used the following technology: black=GPS, dotted black=digital mono-chrome echo sounder, dashed black=digital colour echo sounder, dashed red=paper echo sounder, blue =4-stroke outboard engine, red=soft plastics, green=braid line.

Interviews and popular media highlight 140 years of change in a recreational fishery:

Recreational fishing is globally popular and has taken place for centuries, yet a lack of monitoring data means historical trends in recreational fisheries are often little understood, especially compared to those in commercial fisheries. Recently published in *Global Environmental Change*, research by **Ruth Thurstan, Sarah Buckley, and John Pandolfi** examined the Queensland

recreational snapper (*Chrysophrys auratus*) fishery throughout its documented history, a total of 140 years. Technological innovations were evident throughout this history, including several rapid transitional phases when a gear type was adopted within a decade or less of its introduction. In addition, these researchers found that, although the timing and rate of technological adoption by recreational fishers has kept pace with the commercial sector since the 1960s, recalled recreational catch rate trends demonstrated significant declines over the 20th century despite increases in recreational targeting ability. Interviews and media sources also documented the beginnings of a societal transition during the 1990s, where longstanding ‘take-all’ attitudes shifted to a more conservation-minded ethic. This transition was likely driven by a changing regulatory landscape, as well as wider attitudinal changes influenced by key media figures and changing societal norms. Whether this transition led to a reduction in total recreational catch remains unclear due to a lack of monitoring data and the open access nature of the recreational fishery. Overall, the study demonstrates that, in the absence of systematic data collection, archival sources and fisher interviews can contribute an interdisciplinary knowledge base for understanding and interpreting fishery trends. *Publication: Thurstan RH, Buckley SM, Pandolfi JM. 2018. Trends and transitions observed in an iconic recreational fishery across 140 years. Global Environmental Change 52, 22-36. DOI: 10.1016/j.gloenvcha.2018.06.002*

Historical record sheds light on human use – and our understanding of ecosystem outcomes:

Using historical archives in the Gulf of Maine (USA), **William Leavenworth** is exploring two threads that connect ecosystem outcomes with changes in harvesting approaches. First, evidence that previous human communities were aware of and valued the ecological connection between healthy predator fish population, such as Atlantic cod (*Gadus morhua*), and their clupeid prey, such as herrings, shad, and menhaden. In historical (dated 1857) petitions, fishermen used the fact that the Atlantic cod they fished for depended on Atlantic menhaden (*Brevoortia tyrannus*) to argue for prohibiting menhaden seining in and around Frenchman's Bay. Similar sentiments can be found in petitions of the pioneers along the Presumpscot River (in Maine, USA) in the 1770s. The second thread of Dr. Leavenworth's work is the connection between mechanization and efficiency, which ratcheted up over time alongside observed scarcity of targeted clupeids. Historical records indicate increases in the fishery and its technology played a key role in the harvesting and, in many cases commercial extinction, of the clupeid suite over a period of a century—first the shad (*Alosa sapidissima*), followed by menhaden, alewives (*Alosa pseudoharengus*), and, finally, Atlantic herring (*Clupea harengus*). Dr. Leavenworth is working to demonstrate how these two threads show the ecosystem consequences of human use over time – and how we were well aware of those consequences over a century ago.



Sketch by H. W. Elliot, “Menhaden crew at work; pursuing of the seine nearly completed”; 1878. NOAA Photo Library.



COLLABORATIONS

Raising funds to help Kenya fishermen protect reef fish at risk of

local extinction: Recent historical ecology research conducted by **Sarah Buckley, Tim McClanahan and colleagues** helped to identify which of Kenya's coral reef fish are most at risk of local extinction. This research involved collaboration between archaeologists, historical ecologists, marine biologists, social scientists and fishers, and used zooarchaeological remains, Naturalist's species lists, modern catch assessments, underwater surveys, and fishermen

interviews. To date, the project has found 16 exploited species that have declined to artisanal extinction using quantitative catch comparisons between archaeological faunal remains (750-1500) and contemporary catch records (1995-2014). Furthermore, recalled catch rates from fishers (1950-2014) and underwater surveys (2013-2014) indicate that 9 of these species are ecologically extinct. The team shared their results with local fishing communities, alongside discussions on a variety of species-specific management options and conservation measures. These communities are now adopting some proposed measures, such as applying minimum catch size limits to protect vulnerable reef species. However, implementing these measures can be difficult without the right tool. In this case, it is measuring tapes so fishermen can make sure a landed fish is the right size to keep. This work is in collaboration with Wildlife Conservation Society Kenya, and donations help get tapes to communities that need them.

Please consider donating here: gf.me/u/jwaf9q.

Archival data provides (one) perspective on past Indigenous

Australian seaweed use: Global demand for seaweed has recently increased dramatically, as has recognition of the potential for seaweed aquaculture to address food security and climate-change mitigation. Australian seaweed aquaculture is in its infancy, yet Australia is a global hotspot for seaweed biodiversity and hosts a rich, diverse Indigenous history dating back 65,000 years, including an extensive traditional knowledge of coastal resources. **Ruth Thurstan and colleagues** conducted an archival review of media including newspapers and websites, academic texts, local management plans, government reports, and Aboriginal-authored texts, to explore the contemporary and historical uses and cultural significance of seaweeds to Indigenous Australians. In archival

records dating back to 1834, purposes of seaweed use included ceremonial activities, medicines, clothing, food, fishing, shelter and domestic uses. While such information is a stepping stone to further understanding, the researchers also note these historical sources are predominantly from Western, colonialist perspectives; Indigenous voices do not appear until very recently. Hence, particular biases are likely when relying purely on archival sources. As such, the next step of this project, currently underway, is to interview Indigenous Saltwater Australians about their traditional and local ecological knowledge related to seaweed use. This research is being led by scientists based at **Deakin University's School of Life and Environmental Sciences** and the **Institute of Koorie Education**. Researchers hope that the work and collaboration with local Indigenous communities will create opportunities for the continuance and revitalization of traditional customary practises that may enable innovative Indigenous business activities and product creation. *Related publication: Thurstan RH, Brittain Z, Jones DS, Cameron E, Dearnaley J, Bellgrove A (2018) Aboriginal uses of seaweeds in temperate Australia: an archival assessment. Journal of Applied Phycology 30, 1821-1832. DOI: 10.1007/s10811-017-1384-z.*



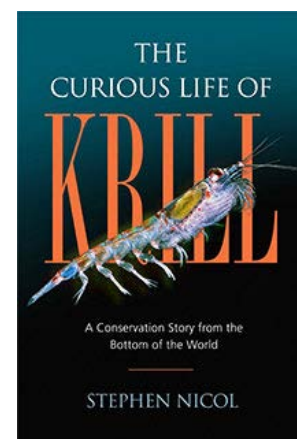
*Kelp water container from Tasmania made from bull kelp (*Durvillaea potatorum*), dated 1850. Source: National Museum of Australia, © Trustees of the British Museum*



RECENT PUBLICATIONS

500 years of Sea Fisheries in Flanders (Belgium): Even as a small fishing power with a short coastline and a relatively limited fleet, Flanders wrote an important piece in the maritime history of the North Sea. In recent years, several works have been published on specific time windows or aspects of that Flemish sea-fishing history, but a comprehensive overview of 500 years of evolutions was still lacking. This is where the book, *Fishing in the Past*, comes in. Based on extensive archive, data and literature research, the publication sets out the main lines of five centuries of Flemish sea fishing, chronicling less about the fishermen themselves, but more the core aspects of the broader fishing industry: the fleet, the fishing techniques, the catches and fishing grounds, the target species, the consumption and the economic, geographical and political context of the fishing. Enriched with beautiful illustrations, the book is a reference work for the fascinating story of Flemish sea fishing, which can attract both researchers and the general public. *Fishing in the Past* is a collaboration between Flanders Marine Institute (VLIZ), Museum aan de Stroom (MAS, Antwerp) and the National Fisheries Museum NAVIGO (authors **Ann-Katrien Lescauwaet, Jan Parmentier and Ruth Pirlet**). The book also led to an exhibition, which runs from 1 July 2018 to 6 January 2019 in the **NAVIGO-National Fisheries Museum** in Oostduinkerke.

History proves valuable for understanding current Antarctic marine systems: Large marine animals have a critical ecological role in marine ecosystems - and have historically been the target of intense human harvesting. The impacts of losing these animals, such as whales, due to human exploitation have been explored globally, but consequences in extreme latitude environments are often missed in these narratives. For example, in Antarctica, harvesting of whales may have substantially reduced ocean productivity across marine trophic levels. In a recently released book by **Stephen Nicol**, published by Island Press, *The Curious Life of Krill* delves into the many mysteries and myths that surround krill and its role in the Southern Ocean ecosystem - and helps shed light on legacy effects of historical harvesting on today's Antarctic ecosystem. Focusing on the complex interaction between baleen whales and krill in the Antarctic, the author unravels how, in an apparent paradox, the recovery of the great whales might lead to an increase in abundance of their primary food source – krill. <https://islandpress.org/books/curious-life-krill>



Special issue on the historical ecology of semi-enclosed basins published: A special Issue of the journal *Regional Studies in Marine Science* is now available, “**Historical Ecology of Semi-enclosed Basins: Past, Present and Future of Seas at Risk**”. This special issue was edited by **Carlotta Mazzoldi, Alberto Barausse, Elena Canadelli, Tomaso Fortibuoni, Saša Raicevich**, and supported by the **COST Oceans Past Platform**. Papers cover such diverse and intriguing topics as ancient fishing and aquaculture sectors, adaption strategies of small-scale fisheries, using hindcasting to apply historical knowledge for forecasting, the symbolism of cultural heritage preservation, and the myths surrounding the interactions between sharks and people, among others. The special issue can be accessed via <https://www.sciencedirect.com/journal/regional-studies-in-marine-science/vol/21/suppl/C>.

Fabinyi, M. (2018). **Environmental fixes and historical trajectories of marine resource use in Southeast Asia.** *Geoforum*. 91: 87-96. <https://doi.org/10.1016/j.geoforum.2018.02.033>.

Hale SS, & MM Hughes, HW Buffum. (2018). **Historical trends of benthic invertebrate biodiversity spanning 182 years in a southern New England estuary.** *Estuaries & Coasts*: <https://bit.ly/2LOPfhr>.

Mackay AI, & F Bailleul, SD Goldsworthy. (2018). **Sperm whales in the Great Australian Bight: synthesizing historical and contemporary data to predict potential distribution.** *Deep Sea Research Part II: Topical Studies in Oceanography*: <https://doi.org/10.1016/j.dsr2.2018.04.006>.

Peluso L, & V Tascheri, FLD Nunes, CB Castro, DO Pires, C Zilberberg. (2018). **Contemporary and historical oceanographic processes explain genetic connectivity in a Southwestern Atlantic coral.** *Scientific Reports*: 8: 2684. <https://www.nature.com/articles/s41598-018-21010-y>.

Thurstan RH, & SM Buckley, JM Pandolfi. (2018). **Trends and transitions observed in an iconic recreational fishery across 140 years.** *Global Environmental Change*. 52: 22-36. [doi:10.1016/j.gloenvcha.2018.06.002](https://doi.org/10.1016/j.gloenvcha.2018.06.002).

Thurstan RH, & Z Brittain, DS Jones, E Cameron, J Dearnaley, A Bellgrove. (2018). **Aboriginal uses of seaweeds in temperate Australia: an archival assessment.** *J. Applied Phycology* 30:1821-1832. [doi:10.1007/s10811-017-1384-z](https://doi.org/10.1007/s10811-017-1384-z).

ANNOUNCEMENTS: CONFERENCES

The **20th Meeting of the Fish Remains Working Group (FRWG)** is set for August 26-30, 2019 in Portland Oregon, USA, and will be preceded by a weekend field trip to the Oregon Coast. FRWG is an outstanding way to meet with scholars from around the world in a small supportive atmosphere. And Portland, Oregon is a perfect place for such a gathering. Fish were and continue to be of fundamental importance to Indigenous people and the broader citizenry of the region. Please consider joining us in August 2019! We'll have a website in place by June 2018, to help you with planning. The local organizer and host is Virginia Butler (Portland State University (U.S.A.)), with help from a planning committee: Madonna Moss (University of Oregon, U.S.A.), Iain McKechnie (University of Victoria, Canada), Elizabeth Reitz (University of Georgia, U.S.A.) and Jen Harland (University of the Highlands, Scotland). More at <https://www.2019frwg.com/welcome>.

The **53rd European Marine Biology Symposium (EMBS53)** aims to “link the history, the present, and the future of (European) marine biology”, and one of the four conference themes is **Science from a historical perspective**. Organized by the Flanders Marine Institute (VLIZ) and Lifewatch Belgium, EMBS53 will take place 17-21 September 2018 in Ostend, Belgium. <http://www.embs53.org/>.

Oceans Past VII (OPVII), “Tracing human interactions with marine ecosystems through deep time: implications for policy and management”, will be held in Bremerhaven, Germany, 22-26 October 2018. The conference welcomes researchers, practitioners, policy-makers and students of all disciplines under the unifying view of our oceans as networks of social-ecological or coupled human-nature systems. For more and to submit, please visit <https://bit.ly/2JxeweH> or <http://oceanspast.org/oceanspastvii.html>.

The **1st CONCHA Workshop, “Crossing Seas, Rising Islands, Connecting People** will be held in Lisbon, 14-16 November 2018. A central discussion of the meeting will be on understanding how early settlements in the Atlantic Islands (15th to 17th Ce) developed in relation to differing regional and local ecological and economic environments. More at: <https://bit.ly/2v0PvSB> and <https://www.facebook.com/events/1584620631613858/>.

The Centre for Research in Political Science (CICP) and the Interdisciplinary Center for History, Culture and Societies (CIDEHUS) of the University of Évora are pleased to be hosting the **III Meeting of the Portuguese Network of Environmental History, “Dynamics and Resilience in Socio-Environmental Systems”**, to be held in Évora, Portugal, between 28 and 30 March 2019. More information at <https://encontreportha2019.weebly.com/>.

The **3rd World Congress of Environmental History, “Convergences: The Global South and the Global North in the Era of Great Acceleration”**, will take place from 22 – 26 July, 2019, in Florianopolis, Brazil, at the Universidade Federal de Santa Catarina. The call for papers is open, and the deadline for submission is 10 September 2018. More information and to submit on the webpage, <http://www.3wceh2019.floripa.br/>.



[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 our editors, **Emily Klein** (emily.klein04@gmail.com) or **Cristina Brito** (cbrito@fcs.unl.pt).

*The next Oceans Past News will be mid-October 2018. We **warmly welcome submissions** through September, 2018.*

RESOURCES

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

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

We are also on Facebook: <https://www.facebook.com/groups/122288493384/>