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OCEANS PAST INITIATIVE

Coming to terms.

"Isn't this a seminar on *bio*diversity?" a confused participant once asked me after a workshop on the diversity of people's identities and experiences in science. Others asked if it was even necessary: wasn't science unbiased, objective, above the fray - a shining example of the meritocracy? In the years since, the U.S. scientific community has started coming to terms with its own structural systems of racism, sexism, ableism, and other prejudices and barriers. For those of us interested in history, evolution, and long-term change, part of that must also be understanding and dismantling the roots of colonialism in science, and how our community has treated others around the globe for centuries. We must bring old wrongs into the light while opening new understanding of our world through time – as our Spotlight author put it, "*recover ancestral biocultural knowledge that is crucial to build a future of social sustainability*." Further discussion on this topic is encouraged for future editions of OPN, and I warmly welcome questions and comments.

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Playa Balandra / Balandra Beach. Autor/Author Antonio Ortega

OCEANS PAST SPOTLIGHT*

Our Sea: History Of Marine Extractivism In The Gulf Of California (Mexico)

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The **Gulf of California** accounts for 49% of the Mexican coastline and 50% of the national insular territory. It is one of the five marine ecosystems with the highest productivity and biodiversity on the planet, with 40% of the world's marine mammals and 33% of cetaceans, 4500 marine invertebrates, 181 birds, and 695 plants (28 endemic). It has 14 Natural Protected Areas that are World Heritage Sites, 21 RAMSAR Sites, and is the only place in the world with underwater sand waterfalls.

Mapa Baja California Sur / Map of Baja California Sur. Autor/Author Antonio Ortega Santos.

Over the last few years, an interdisciplinary research team formed by members of Mexican and Spanish Universities has developed a research project on the impact of the appropriation, extraction, and commodification of the marine territory of the Gulf of California (Mexico). This project, **Our Sea**, culminates a work for more than 12 years with financial support from CONACYT (Government of Mexico) studying the Baja California Peninsula as a territory of colonial appropriation since the arrival of the Jesuits in 1697. We start with viewing this peninsula as a research laboratory, and are able to trace the passage from hunter-gatherer societies to capitalist-extractivist modernity in a period of less than three centuries. From the original peoples (guaycures, pericúes, and cochimíes), with their practices of social collaboration in harmony with the land, to the destruction of

† 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.*

the territory's native ecological and human communities though processes of alienation and resource privatization by mass tourism to large-scale mining. There has been a long road of natural resources, matter, and energy depredation.

Petroglifo en Sierra de la Giganta / Petroglyph in Sierra de la Giganta. Autor/Author Miguel Angel de la Cueva.

With its biodiversity value and throughout the last two centuries, the Gulf of California has been a marine territory subjected to intense material extraction, including: Nacre (1830-1939), Salt (1836-1940), Guano (1856-1934), Gypsum (1870-2017), Sharks (1940-2011), Turtles (1960-1970), Industrial and artisanal fishing (1952-2017) Aquaculture (1903-1914 /1990-2017), Modification and pollution of seawater (1938-2017), and Underwater mining exploration (2015-2017). **Our Sea** used a long historical perspective that, from the "Founding of the Californias" with the Spanish empire to modern extraction, culminates in the commodification of the seas and oceans with old and new cycles of commercial management, including mass tourism. A socio-material indicator platform is currently being developed to evaluate the Material Energy and Flow Accounts of Fishing Systems (MEFA).

Pueblo Wixárika mirando a Tatei Haramara /Wixárika people looking at Tatei Haramara. Autor/Author Diego Cirilo.

This process of "coloniality of the territory" has also seen the emergence of Community Fishing Groups (ONGS) that defend more symmetrical access to marine resources and have deep historical roots. Their forms of resistance are critical to "decolonize" the history of the Gulf of California, and they also help us recover ancestral biocultural knowledge that is crucial for a future of social sustainability.

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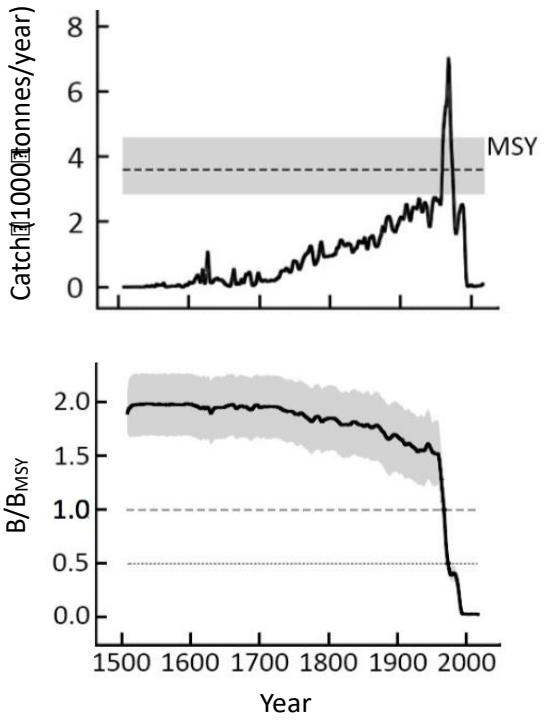
RESEARCH NEWS

The widespread practice of truncating time series data in fisheries. Key to understanding the state of our fisheries – and our full impact – is looking to the past for how much was caught before scientific stock assessments were routine. Yet important data can be lacking in many countries, and perversely, is mostly ignored in countries that have it. We compared successive official assessments for major fish stocks around the world, and found it common practice to only work with data covering recent, short time periods - i.e. using truncating time series of catch and other information. This creates new, shifted baselines which often exclude important historic trends and foster illusions about population health. As a consequence, management objectives, such as recovery targets, can be set too low and can prevent stock rebuilding.

A well-known case of mismanagement due to such shifted baselines is the collapse of Northern Atlantic cod (*Gadus morhua*) off Eastern Canada. European vessels fished extensively for cod here starting in the late 15th century. Catches peaked in 1968, driven by a massive expansion of foreign industrial trawling. In 1992, a moratorium on industrial fishing was declared after the stock – and a large part of the economy in eastern Canadian provinces – collapsed. Three decades later, cod remains in a critical state.



*At right: Catch and estimated biomass of Northern cod (*Gadus morhua*) off Eastern Canada from 1508-2019. The catch and relative biomass level compatible with Maximum Sustainable Yield (MSY; B/BMSY) are shown (dotted lines) along with the 95% confidence intervals (grey).*

We used a reconstructed catch time series and a simple stock assessment tool (CMSY) to model the cod population trajectory from 1508 to 2019. Results suggest the current cod population is ~2% of its historical biomass. We also showed that, if historical data had been used and the population was effectively managed in the 1980s, the devastating collapse may have been avoided with potentially sustainable annual catches of around 200,000 tonnes. Our findings also suggest post-moratorium fishing pressure remains too high for the population to rebuild. Collectively, our work demonstrates how integrating historical knowledge can counteract the shifting baseline syndrome in management, and encourage effective safeguards for marine populations over the long-term. ~ *Rebecca Schijns and Daniel Pauly (Sea Around Us Project, Univ of British Columbia, Canada). Related publications: Schijns R, Froese R, Hutchings J, & Pauly D. 2021. Five centuries of cod catches in Eastern Canada.* ICES JMS*. DOI:10.1093/icesjms/fsab153; Schijns R & Pauly D. 2021. Management implications of shifting baselines in fish stock assessments.* Fish Mngmt & Ecol *00:1–13. DOI: 10.1111/fme.12511.*

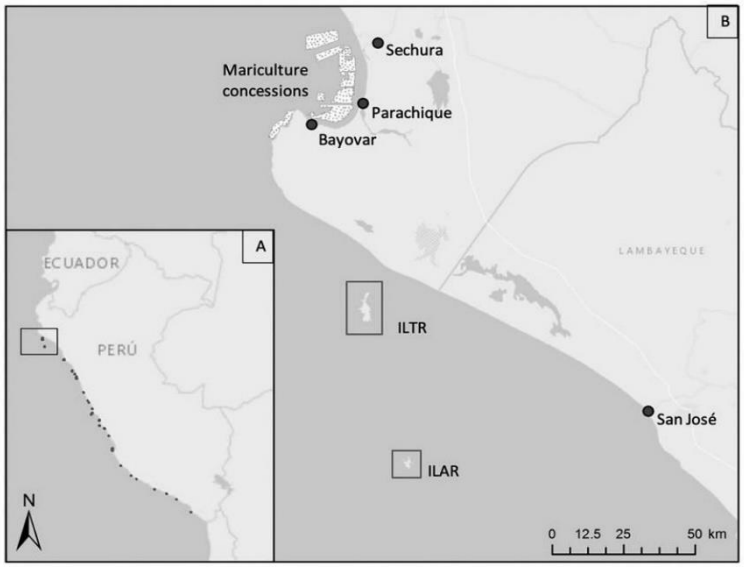


Fig. 1 from the text. (A) Guano Islands, Islets and Capes Reserve System. (B) Isla Lobos de Tierra Reserve, Isla Lobos de Afuera Reserve and the mariculture concessions in the bay of Sechura.

History's role in marine protected area governance. In 2009, **Isla Lobos de Tierra** and **Isla Lobos de Afuera** were designated as marine protected areas (MPAs) among the Guano Islands, Islets, and Capes Reserve System for wildlife conservation and sustainability – areas of high productivity and biodiversity in the Humboldt Current Large Marine Ecosystem. Despite this more recent designation, these MPAs have been protected for hundreds of years to manage guano; this changed their governance on paper, not necessarily in practice. Here, fishing is the major driver undermining conservation, motivated by the global seafood market and cultural informality, yet few incentives have been initiated to protect the MPAs and none directly regulating fisheries. Further obstacles to protection involve a lack of clear authority to manage marine species, and the need for improving cross-jurisdictional coordination and responsibility. Success will also depend on a deeper understanding of social complexities to address the culture of informality and potential equity issues. In spite of this, the land ecosystem and its species remain relatively protected due to a deeper time legacy of strict enforcement and fraternal relationships between guardians and artisanal fishers over centuries. The MPAs show the crucial role history can play in the governance of protected areas, including incentives not often explicitly recognised that can be strengthened in areas where humans have long protected their resources. The challenge remains whether these historical arrangements and local governance can stand the test of increasing extraction, and ultimately these areas demonstrate the necessity of both bottom-up and top-down approaches while highlighting the importance of history in conservation. *Publication: del Pozo DL and Jones PJS 2021. Governance analysis of two historical MPAs in northern Peru.* Marine Policy*: doi.org/10.1016/j.marpol.2020.104096.*

How much cod and herring? The **NorFish Project** has published a review of 25 North Atlantic fisheries in the early modern period. Total landings vastly exceeded previous assessments and more than doubled between 1520 and 1620 from about 220,000 metric tonnes (t) to 460,000 t. Supplies of cod and herring to the European market peaked in 1788 at more than 1 million t before the unrest connected with the French Revolution brought many fisheries to a temporary halt. The authors propose the concept of Accelerated Marine Extraction to signify two periods, c.1540–1600 and c. 1730–1790, when rapidly increasing cod and herring fisheries exceeded human demographic growth and almost doubled the supplies of fish protein per capita. The results fundamentally shift our understanding of the scale of Atlantic fisheries in the past and underline the role of marine resources for European societies. *Related publication: Holm P, Nicholls J, Hayes PW, Ivinson J, & Allaire B. 2021. Accelerated Extractions of North Atlantic Cod and Herring, 1520-1790.* Fish and Fisheries*. 00:1–19 doi/full/10.1111/faf.12598.*

RESOURCES

Student resources on paleobiology. Conservation Paleobiology Network houses a **Student Resources Database**, a list of conservation paleobiology resources including job openings, fellowships, grants, workshops, short courses, conferences, and open access resources. The team is also recruiting 3-4 student volunteers from different academic disciplines to help update and maintain the database. For suggestions and to get involved, contact Carli Peters students.cpn@gmail.com; the database is at https://conservationpaleorcn.org/resources/ and to contribute, use the form at https://forms.gle/aMD1WDfrRkWgXUmH6.

RECENT PUBLICATIONS

Bogomazova A & Dadykina M. 2021. **Monasteries and the maritime history of the Russian North from the 16th century to the early 18th century**. *Artefact* 14: 37-62. https://doi.org/10.4000/artefact.9763.

el Pozo DL and Jones PJS 2021. **Governance analysis of two historical MPAs in northern Peru: Isla Lobos de Tierra and Isla Lobos de Afuera**. *Marine Policy*: 127. https://doi.org/10.1016/j.marpol.2020.104096.

Holm P, Nicholls J, Hayes PW, Ivinson J, & Allaire B. 2021. **Accelerated Extractions of North Atlantic Cod and Herring, 1520-1790**. *Fish and Fisheries*. 00:1–19 doi/full/10.1111/faf.12598.

Hornborg S, Törnqvist O, Novaglio C, Selgrath J. 2021. **On potential use of historical perspectives in Swedish marine management**. RISE Rapport 2021:10. http://urn.kb.se/resolve?urn=urn:nbn:se:ri:diva-52981.

Martin P. 2021; **Wales and the Sea: 10,000 Years of Welsh Maritime History**. *International Journal of Nautical Archaeology*, DOI: 10.1080/10572414.2021.1942732.

Normand BL, Lemmen S. 2021. **Ports in state socialism, or why the Cold War matters to maritime history**. *International Journal of Maritime History*. 33(1):118-128. doi:10.1177/0843871421991176d.

Schijns R, Froese R, Hutchings JA, Pauly D, and Raicevich S. 2021. **Five centuries of cod catches in Eastern Canada** *ICES Journal of Marine Science* . DOI 10.1093/icesjms/fsab153.

Schijns R and Pauly D. 2021. **Management implications of shifting baselines in fish stock assessments**. *Fisheries Management and Ecology*, 00, 1– 13. https://doi.org/10.1111/fme.12511.

ANNOUNCEMENTS

Oceans Past Conference 2022 – Announcement and call for abstracts: The Oceans Past Committee is excited to announce the conference themes and call for abstracts for the Oceans Past IX conference, "**Life on and below water - past insights for future policy"**, to be hosted at the University of Washington in Seattle (USA). It will be a joint meeting between the Ecosystem of Subarctic Seas regional program and OPI, with meeting in sequence and one day of joint sessions. The ESSAS Annual Science Meeting is scheduled June 19-22 and OP IX from June 22-25, 2022. Conference themes include: Ocean literacy and narratives through time; Past climates and ocean dynamics; Human experiences of living with the sea; Changes to maritime social-ecological systems; Indigenous oceans; Inter-disciplinary collaborations on past oceans; Past oceans for future policy; New pathways into the past; and, Visualising the past. Suggestions for additional themes are welcome.

Abstracts and early career grants are due **10 December 2021**. More details forthcoming, including information about registration and lodging options. Please see www.oceanspast.org for more information including requirements for submitting an abstract and request for Early Career Researcher attendance support, and email info@oceanspast.org with any questions. To help us plan, we ask all potential participants to complete a short, anonymous survey to gauge interest in in-person vs. online attendance: https://catalyst.uw.edu/webq/survey/fitzhugh/412609.

Conservation Paleobiology Network announces the CPN blog. The Student Panel of the CPN announced the launch of the CPN blog over the summer: **https://conservationpaleorcn.org/blog/**. Network members can submit content relating to Conservation Paleobiology and adjacent disciplines, including news about research, recent publications, passion projects, or via their "Meet the Scientist" features. CPN Blog's primary goals are to disseminate knowledge, facilitate sharing of experiences, and to provide a space for students and other early career researchers to pursue diverse avenues of science communication. Blog posts can take many forms, and written, visual, or multimedia content is encouraged. For questions and to submit, contact Kristin Oliver (kaoliver@sfu.ca).

Call for conservation paleobiology papers. *Frontiers in Ecology and Evolution* is hosting the research topic, **Integrating Conservation Biology and Paleobiology to Manage Biodiversity and Ecosystems in a Changing World**. We are seeking original research papers, perspectives, and reviews focusing on conservation paleobiology (see fro.ntiers.in/PaleoConservation) for more information. *A*bstracts (or a short description) are due **December 31, 2021** with manuscripts for peer-review by **March 31, 2022** – although deadlines can be discussed, case by case, to take into account possible delays. Individual articles will be published as they are accepted. For questions and an official invitation with instructions for submitting a contribution, please contact the *Frontiers in Ecology and Evolution* team (ecologyandevolution@frontiersin.org) or any of the guest editors: Lynn Wingard (lwingard@usgs.gov); Greg Dietl (gpd3@cornell.edu); Damien Fordham (Damien.fordham@adelaide.au.edu); Chris Schneider (clschnei@ualberta.ca).

ANNOUNCEMENTS: OPPORTUNITIES

Funded PhD position at the University of Exeter's Cornwall campus, UK. We are looking for a student with a strong interest and experience in the collation and analysis of written and material historical sources for understanding historical dynamics in coastal marine ecosystems, and analysing how changes to these systems responded to, or potentially drove, major cultural transitions in human history. The project, "Using marine historical ecology approaches to understand past ecosystem responses across major cultural transitions", is part of the SEACHANGE project, which aims to reconstruct marine ecosystem baselines and quantify the impact of important cultural transitions on marine ecosystems. This PhD position will report to Dr Ruth Thurstan and Professor Callum Roberts and will be responsible for reconstructing past marine functioning and biodiversity in key sites across the coasts of the UK and wider regions, using a wide variety of historical documentary and material sources. Ideally, you will have demonstrated skills or a good level of awareness of the historical ecology literature, historical source interrogation and a strong interest in quantitative data analysis, data-poor and mixed methods approaches (quantitative and qualitative) to ecology and biodiversity datasets. Please contact Dr Ruth Thurstan (r.thurstan@exeter.ac.uk). With questions. Deadline: **1 November 2021**. http://www.exeter.ac.uk/studying/funding/award/?id=4162.

Open Call for Student Panel Applications. The Conservation Paleobiology Network has an open call for six new members, including Co-chair; Working group student representative; Webinar student representative; Student networking & conference activities chairs (2); *Science communication chair/ All enrolled students, including undergraduate (juniors and seniors), Master's, and PhD students, are eligible to join the Student Panel. Positions can last for up to 1 year after graduation and can begin up to 1 year before matriculation. Those transitioning to a Postdoctoral Fellowship are encouraged to apply, as long as you are currently a graduate student at the time you submit your application. More information about the student panel, positions, and expectations can be found at https://bit.ly/3Dbqohr. To apply, please fill out the form here https://bit.ly/3l9rlAx. Applications are due by **November 1, 2021**. Any questions can be directed to students.cpn@gmail.com.

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-January 2022. We **warmly welcome submissions** through the end of 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***