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Dear Editors at *Nature Communications*,

I and my co-authors Dr. Nur Arafeh-Dalmau and Dr. Fiorenza Micheli are pleased to submit our manuscript "*Impacts of marine heatwaves on small-scale fisheries*" to be considered for publication as an *Article* in *Nature Climate Change*.

We studied the influence of marine heatwaves on fisheries production of small-scale fisheries (SSFs), a sector that remains underrepresented in the climate change and marine heatwave literature. We find that marine heatwaves reduce aggregate fisheries production, even in the face of "winners" and "losers". For the first time, we show the presence of context-specific effects: the negative impacts are larger for fisheries operating near biogeographic transition zones, where target species find their latitudinal distribution limit. This gives rise to a latitudinal gradient in vulnerability, but climate change projections suggest this gradient will weaken over the next decades. These findings illuminate the dynamic vulnerability of SSFs to extreme environmental shocks, and highlight the need for policy and market strategies to sustain this crucially important sector in the face of climate change.

A novel feature of our work is the high spatio-temporal resolution and large-scale coverage at which we estimate exposure to marine heatwaves and their impacts on fisheries production. We compiled and analyzed a 20-year long, spatially-explicit data set on SSFs operating along $\sim$1,000 km of the Baja California Peninsula in Mexico, which we paired with four decades of high-resolution observations of sea surface temperature and mid-century climate projections from 11 models of the CMIP6 project. Our work draws on methods and theory from fisheries science, marine ecology, biogeography, and climate change science. As such, we believe the following is a comprehensive list of potential reviewers knowledgeable on these topics:

- Management and policy in small-scale fisheries, (with a focus on Mexico):
  - Dr. Eréndira Aceves-Bueno, Assistant Professor, School of Marine & Environmental Affairs, University of Washington (acevesb@uw.edu).
  - Dr. Andrés Cisneros-Montemayor, Assistant Professor, School of Resource and Environmental Management at Simon Fraser University (a_cisneros@sfu.ca).
- Impacts of climate change on fisheries:
  - Dr. Elena Ojea, Oportunius Research Professor, University of Vigo (elenaojea@uvigo.gal)
- Impacts of ocean warming on marine ecosystems:

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  - Dr. Thomas Wernberg, School of Biological Sciences, The University of Western Australia (thomas.wernberg@uwa.edu.au)

- Other experts in the field, but with a potential conflict of interest due to personal relationship:
  - Dr. Christopher Free, Research Faculty, Marine Science Institute, University of California at Santa Barbara (cfree@ucsb.edu)
  - Dr. Alexa Fredston, Assistant Professor, Department of Ocean Sciences, University of California, Santa Cruz (fredston@ucsc.edu)

Our work is a good fit for the journal because we study the underlying mechanisms and impacts of marine heatwaves on an important economic sector that provides employment and nutrition to millions of people worldwide. Furthermore, an *Article* is an appropriate type of contribution because our work presents a complex story that combines a retrospective analysis of observational data and a prospective analysis of climate model output. Our findings and conclusions are relevant to fisheries scientists, marine ecologists, and climate scientists investigating the ecological and social implications of climate change, but also to environmental managers and policy makers that work to manage and sustain small-scale fisheries worldwide. We believe this description aligns with the broad and rigorous audience targeted by the journal.

Our manuscript has not been submitted for consideration elsewhere, and all authors consent to this submission. Should you have any questions about our contribution, please don't hesitate to contact me.

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