

From Ancient Fishing Practices to on the Grill Today

Responses to Coastal Environment Diversity in Middle and Later Stone Age Fish Harvesting Practices, Southern Cape, South Africa



Asia Alsgaard

asia.alsgaard@uib.no

Centre for Early Sapiens Behaviour (SapienCE)

Department of Archaeology, History, Culture, and Religion (AHKR)

Background and motivation

I am an archaeologist researching coastal hunter-gatherers using fish bones from the Middle and Later Stone Ages in South Africa. I was motivated to join the SEAS programme because past fishing practices can also tell us about those of today. For instance, the yellowtail (*Seriola lalandi*) fished 4,000 years ago in South Africa is the same species you can find often in used in sushi today or find for on the grill! I am using fish bones from Hoffman's/Robberg Cave where inhabitants were fishing 4,000 years ago to reconstruct the body size of the yellowtail they were catching.



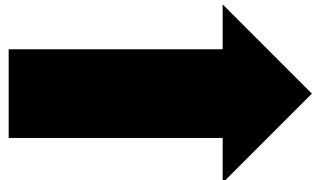
Project description



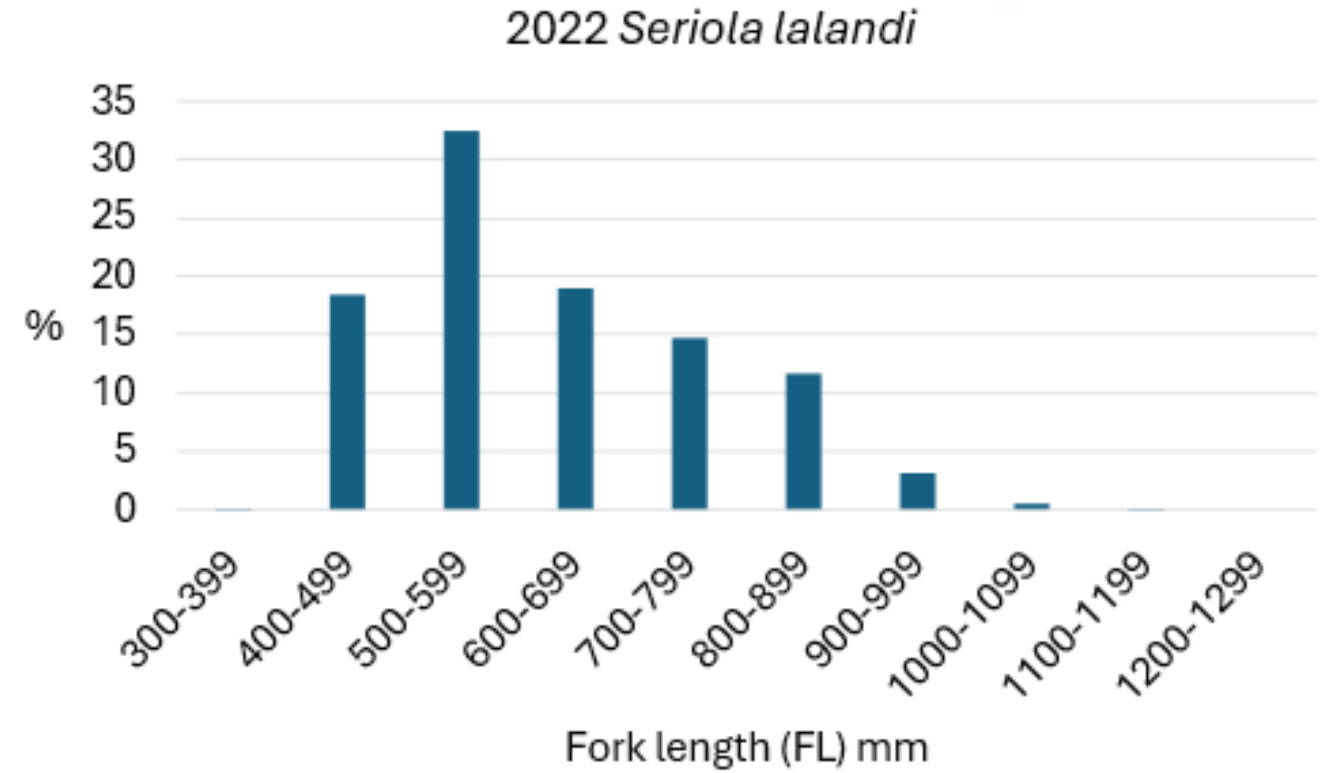
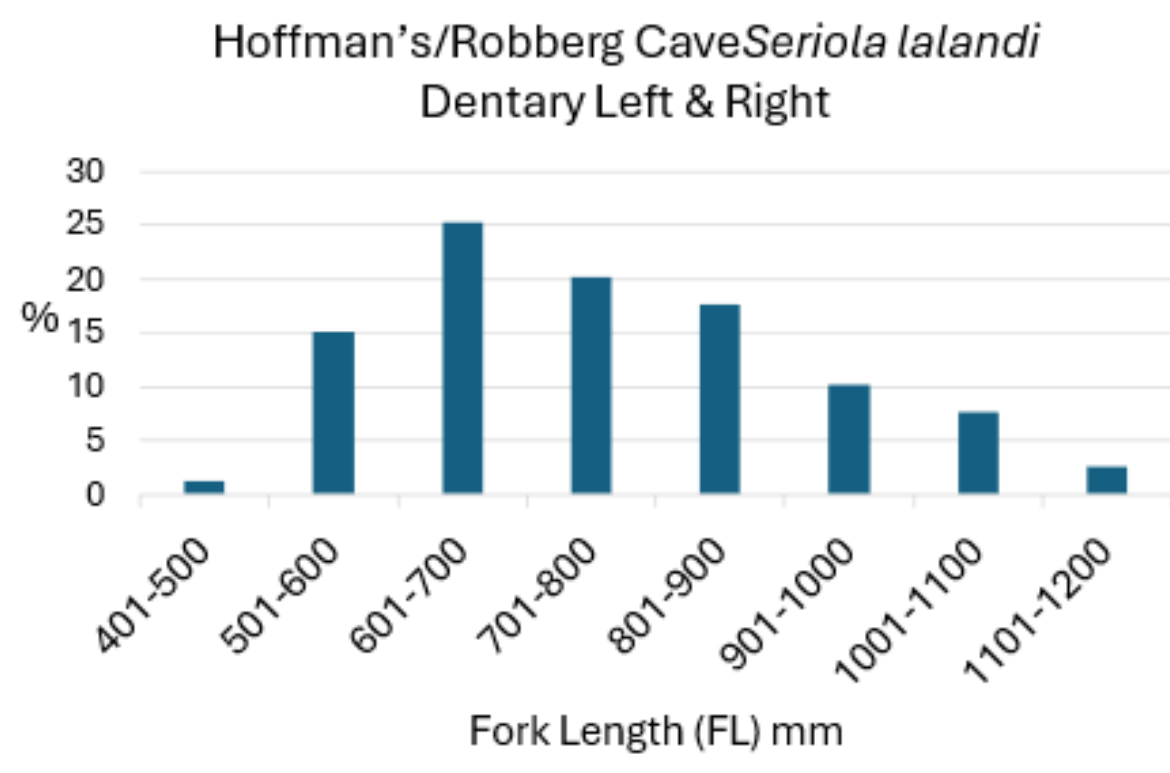
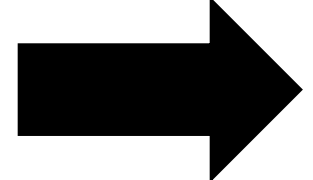
Fish bones excavated from Hoffman's/Robberg Cave



Present day Yellowtail bones



3D scanning & Geometric morphometrics



Reconstructed body size

Main question

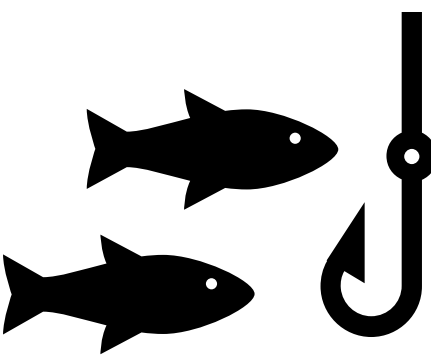
Do we see smaller yellowtail today compared to the yellowtail fished 4,000 years ago at Hoffman's/Robberg Cave?

Marine sustainability

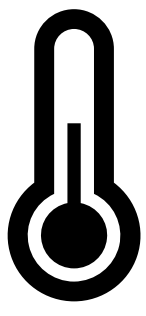
- The yellowtail is a large carnivorous fish with distinct populations in multiple regions of the Southern hemisphere.
- In South Africa, yellowtail is one of the most abundant fish caught in recreational and commercial line fishing and it is also caught commercially using nets.
- There are minimal fishing restrictions on the yellowtail and it is considered optimally exploited within the South African line fishery.
- However, there is only an historical record for this species going back to the 1970s. Archaeological data provides an even longer record for this species to help us better understand long term changes in fish body size.

Highlighted results

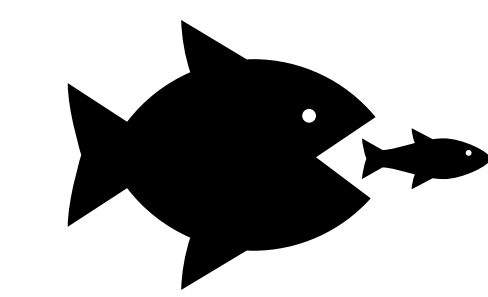
Preliminary data suggests yellowtail today are ~100mm smaller than those caught at Hoffman's/Robberg Cave.



Higher fishing pressures could have resulted in a reduction in fish body size compared to 4,000 years ago.



Decreases in temperature can reduce yellowtail growth; however, the sea temperature has increased from 4,000 years ago and is within the normal range for this species.



Decreases in dissolved oxygen content in sea water, or changes in primary production, among other factors could potentially impact fish size, but can be difficult to measure in the archaeological record.



Milestones

- Hear more about other aspects of my research (and the rest of the SapienCE team) at the top floor of the University Museum at Uib. The exhibition will be up until Dec 2024!
- I participated in two seasons of archaeological excavation in South Africa at Blombos Cave and I will be leading excavations at Klipdrift Cave, Feb 2025.
- I've attended two international conferences, published in the *Journal of Island and Coastal Archaeology* and *Journal of Anthropological Archaeology* as well as in an edited volume "Questioning Rebound."
- I am currently teaching at the Department of Archaeology, History, Culture, and Religion at Uib.

Supervisory team

Dr. Karen van Niekerk, Researcher, Principal Investigator, SapienCE, Uib
Dr. Carin Andersson, Researcher NORCE, SapienCE
Dr. Mimi Lam, Researcher, SVT, Uib

Acknowledgements

Professor Judy Sealy, University of Cape Town
Dr. Louisa Hutten, University of Cape Town
Iziko South African Museum and Wilhemenia Secona



Institutt for arkeologi, historie, kultur- og religionsvitenskap



This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 101034309.



SEAS

