

# 100,000 Years of Fishing in South Africa

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

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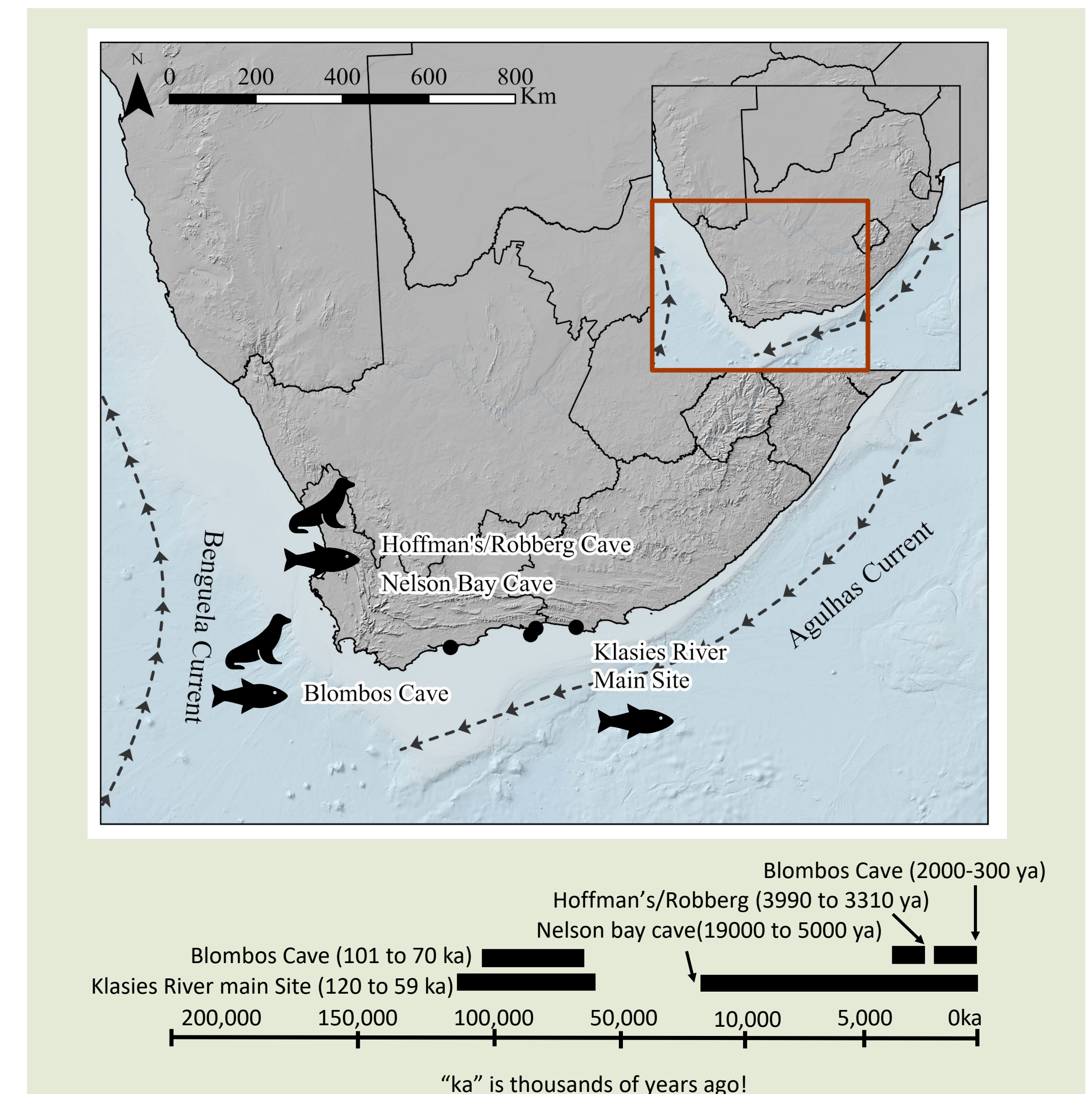
### Background and motivation

I am an anthropological archaeologist specialized in the study of animal skeletal remains, or zooarchaeology. I work with the Centre for Early Sapiens Behavior (SapienCE) on fish and seal skeletal elements from sites in South Africa including Blombos Cave and Klasies River Main Site. I was motivated to join the SEAS programme because of my own goals to make my research interdisciplinary and to be able to practically apply archaeology to ocean sustainability questions.

Archaeology: The study of human history and prehistory through the excavation of sites and analysis of material culture.

### Project description

Between the Middle and Late Stone Ages in South Africa, early humans exploited coastal resources such as fish and seal. Throughout this time, sea levels were rising and falling. Rivers appeared and disappeared along with the wetlands at their banks. One persisting question is whether humans were taking advantage of these changing environments. Seasonal exploitation, measured from fish otoliths, and habitat use, measured from seal teeth and fish bone, can provide insight into the questions of where and when humans were exploiting fish and seal. This research project aims to identify changes in fish and seal habitat use to understand human coastal exploitation and its impact focusing on the sites of Blombos Cave, Klasies River Main Site, Hoffman's/Robberg Cave, and Nelson Bay Cave.



### Main questions

- 1) Where were people fishing in the Middle Stone Age?
- 2) What season were people fishing in the Middle Stone Age?
- 3) How much were people fishing in the Middle and Later Stone Age (compared to today)?

### Aims

- 1) Analyze the habitat use of fish and seals using stable isotope analysis.
- 2) Analyze the season of fishing using catfish otoliths.
- 3) Evaluate changes in the body size of the fish the yellowtail amberjack (*Seriola lalandi*) through 3D scanning fish jaws.

### What is an otolith?

An "ear stone" or a hard, calcium carbonate structure that function as the inner ear in bony fish. They help with hearing and balance in the fish and are located behind the brain.



### Milestones

- Research trip and excavation at Blombos Cave, South Africa
- Contribution to the SapienCE exhibition at the UiB University Museum
- Involved in public communication outreach in Norway and South Africa
- Two publications from my dissertation work submitted and paper for my postdoctoral work in progress.



### Marine sustainability

The yellowtail amberjack (*Seriola lalandi*) is a global fish species.

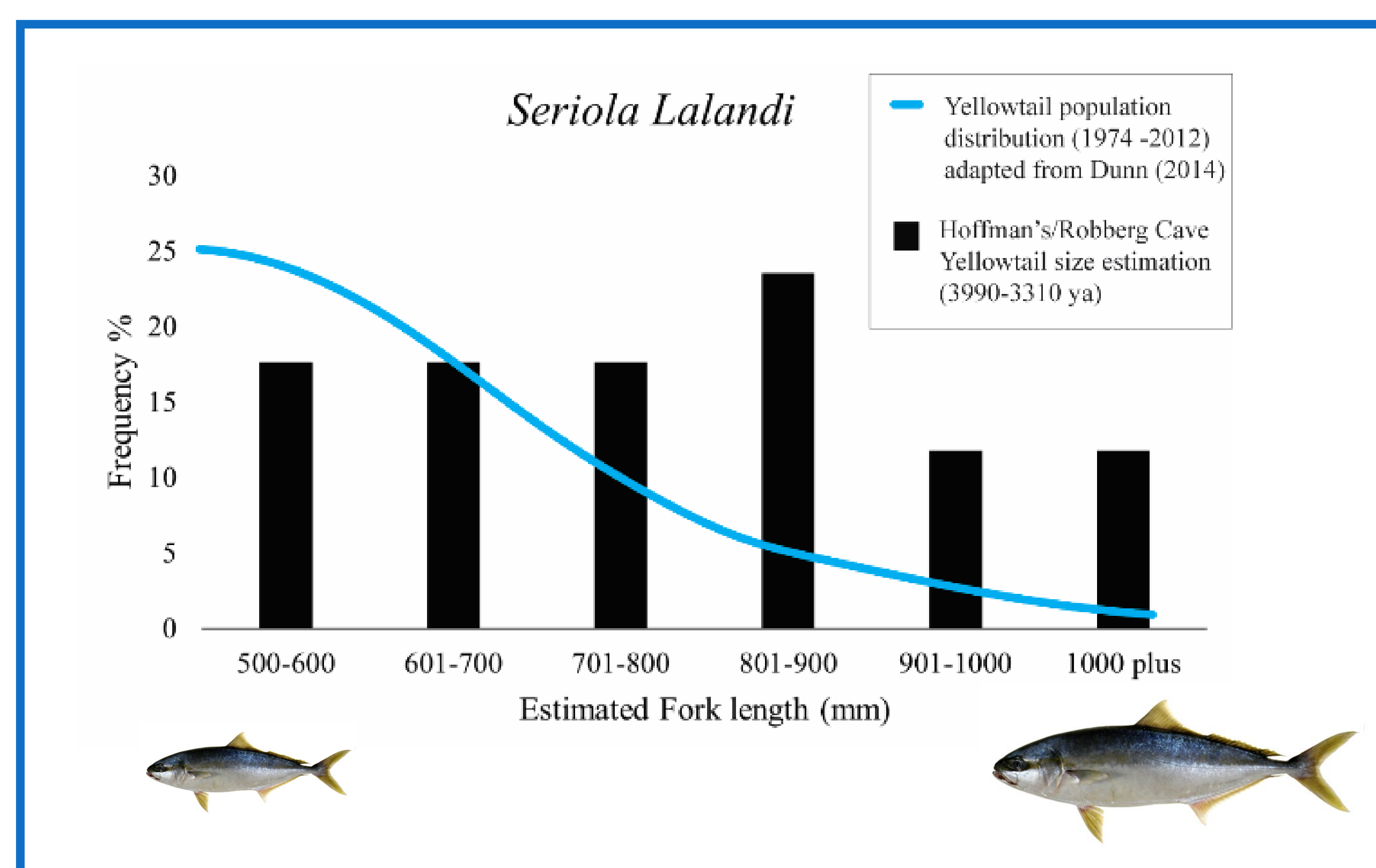
Reconstructions of body size suggest the body size of this fish 3,000 to 4,000 years ago was similar in size to the yellowtail population today.

While the yellowtail population size remains stable, local endemic fish species in South Africa, such as the Black Musselcracker, have experienced population decline after a 100,000 year history of exploitation by humans. Archaeological research can help quantify these changes and emphasize the cultural importance of these resources.

### Highlighted results

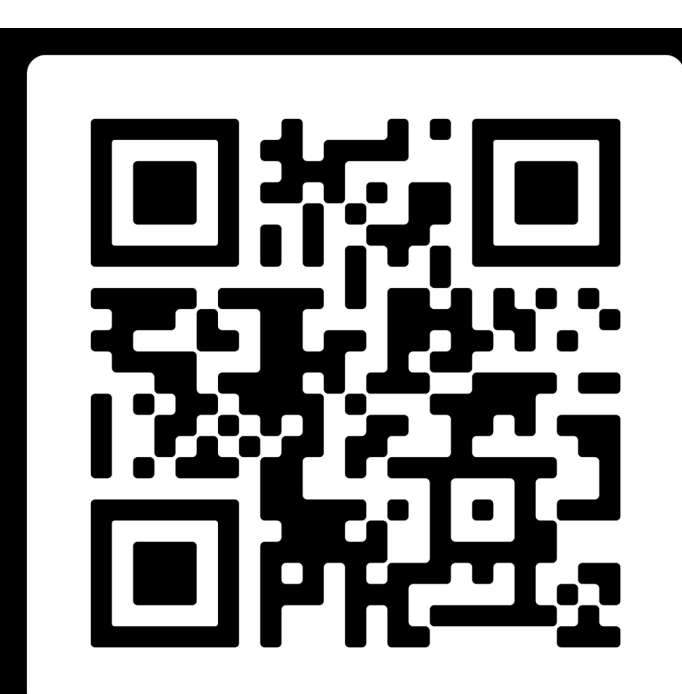
Site location impacts the species of fish people were catching during the Middle and Later Stone Ages. More species were being caught along the warmer east and southern coasts, where we see a higher diversity in fish species today, compared to the cooler west coast.

While the size of the yellowtail amberjack from 3,000 yto present day appears stable, the inhabitants of Hoffman's/Robberg Cave may have been targeting fish with large body sizes. Not only would this be a good amount of food, but you would get to show off a big catch!



Check out the SapienCE exhibition at the UiB University Museum!

Or check out our website using the QR code below.



SCAN ME

### Supervisory team

Dr. Karen van Niekerk, Researcher, Principal Investigator, UiB SapienCE

Dr. Carin Andersson, Researcher, NORCE, SapienCE

Dr. Mimi E. Lam, Researcher, UiB, Centre for the Study of the Sciences and the Humanities



SEAS

