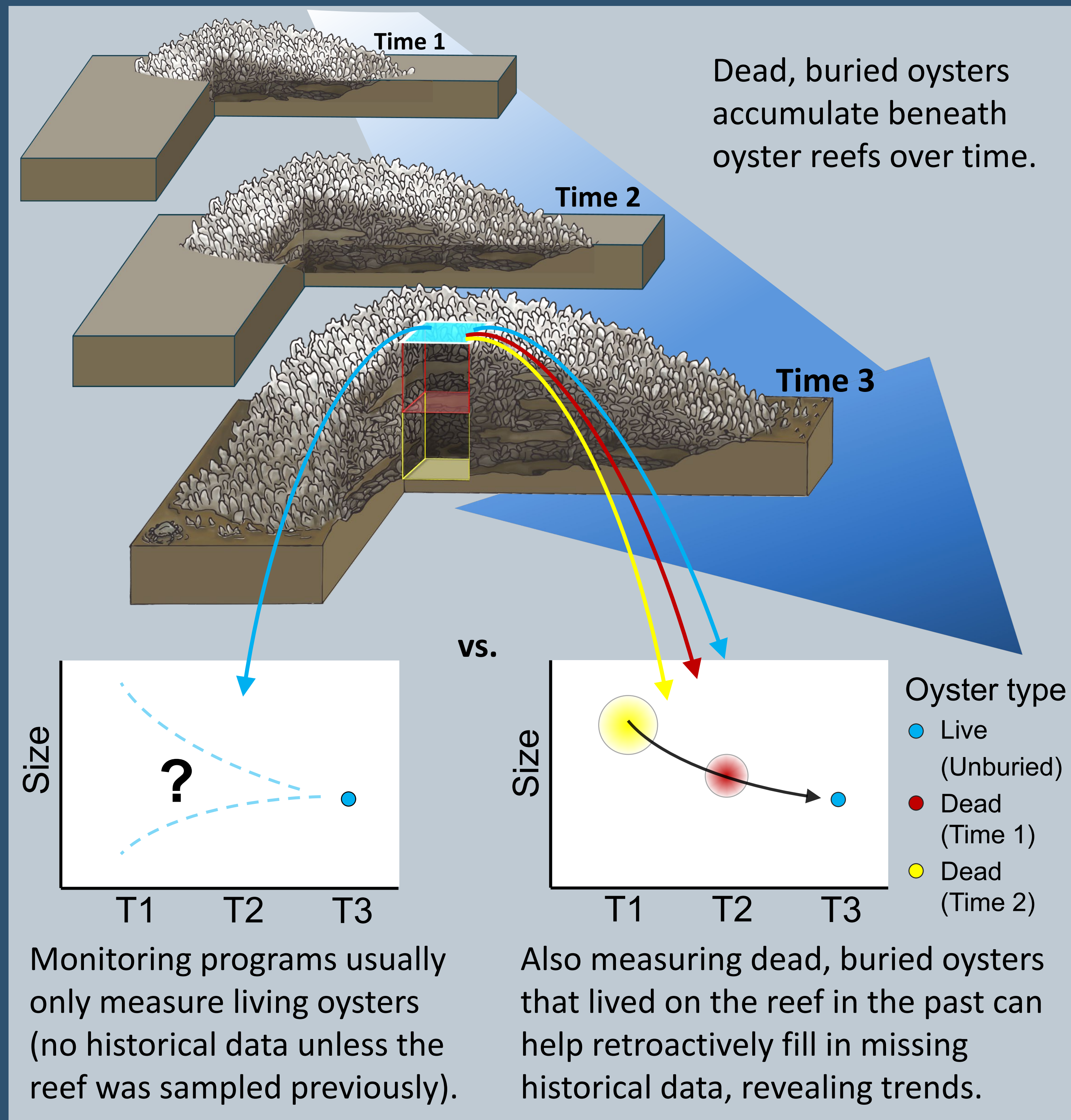


# Measuring Dead, Buried Oyster Shells Can Help Fill Historical Data Gaps

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## Graphical Abstract



Further reading:

Online Exhibit



Co-production Paper



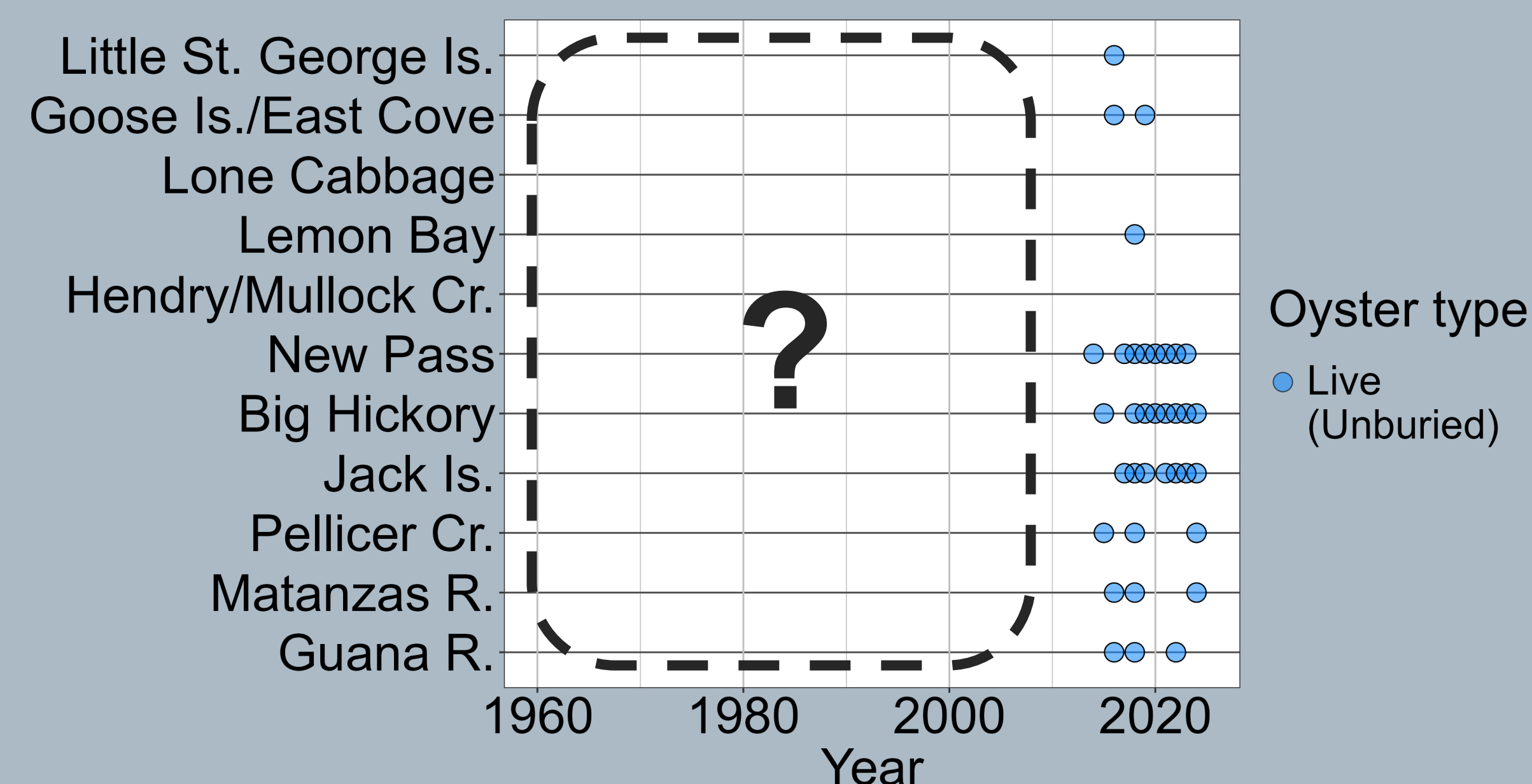
Oyster Dating Paper



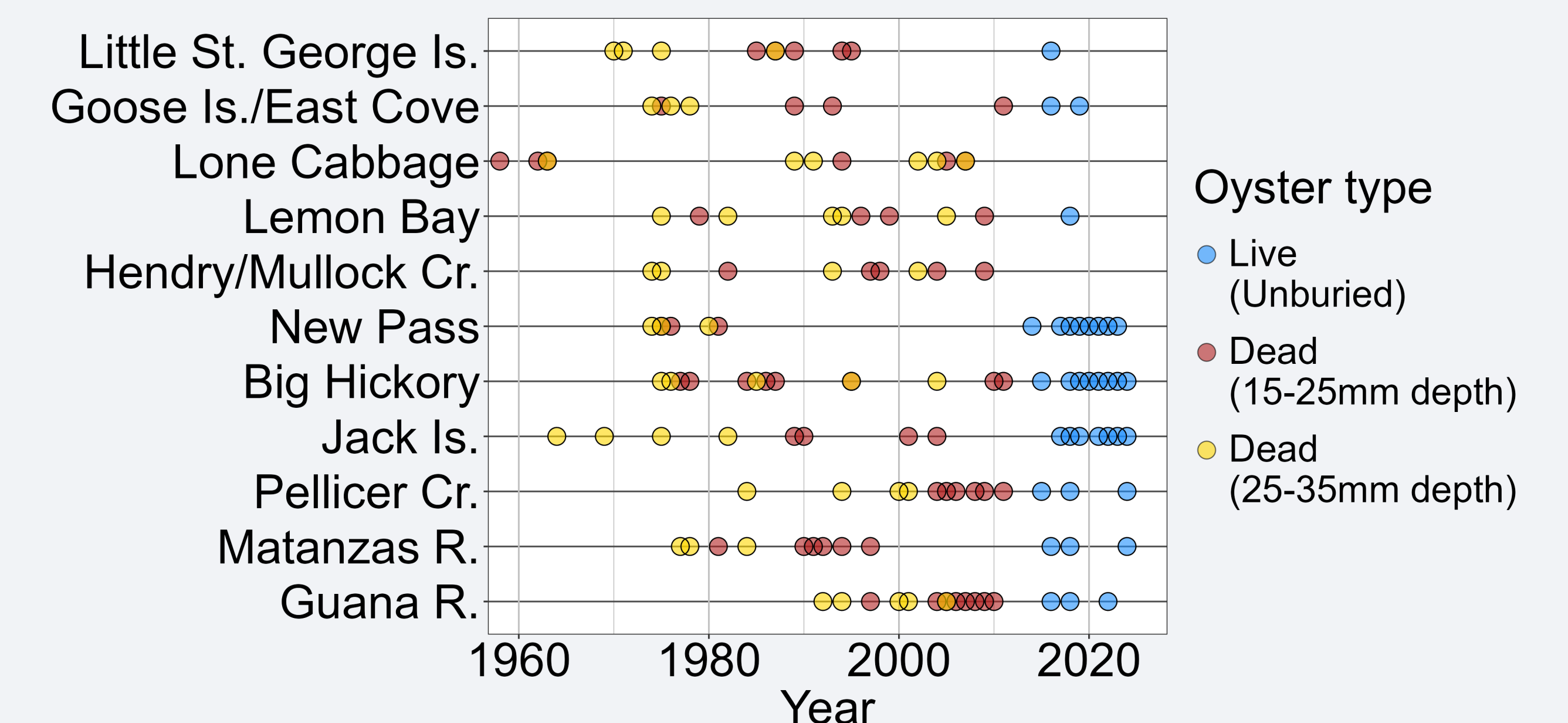
## Abstract

Some species have characteristics that can show us the health of their populations, acting as proverbial “canaries in the coal mine”, and one of them for oysters is their size, which provides insight into life history characteristics that are important indicators of reef health, such as recruitment, growth, and age structure. Regularly measuring oyster sizes over long periods of time and on many reefs across a broad area can help Florida’s oyster reefs thrive by allowing researchers and managers to more confidently identify reef health problems and their causes, catch them sooner, and respond appropriately, but this process cannot work in many areas of the state because most monitoring programs did not begin systematic measurements of oyster sizes until recently and resource constraints limit the number of reefs that each one can keep tabs on, leaving large historical and spatial information gaps. Therefore, we are filling in the gaps by measuring dead oyster shells that lived on each reef in the past and became buried naturally over time. This approach enables us to add decades of historical size estimates to an area’s monitoring record all at once.

1 Most living oyster size data from Florida were collected after 2010, leaving historical data gaps.



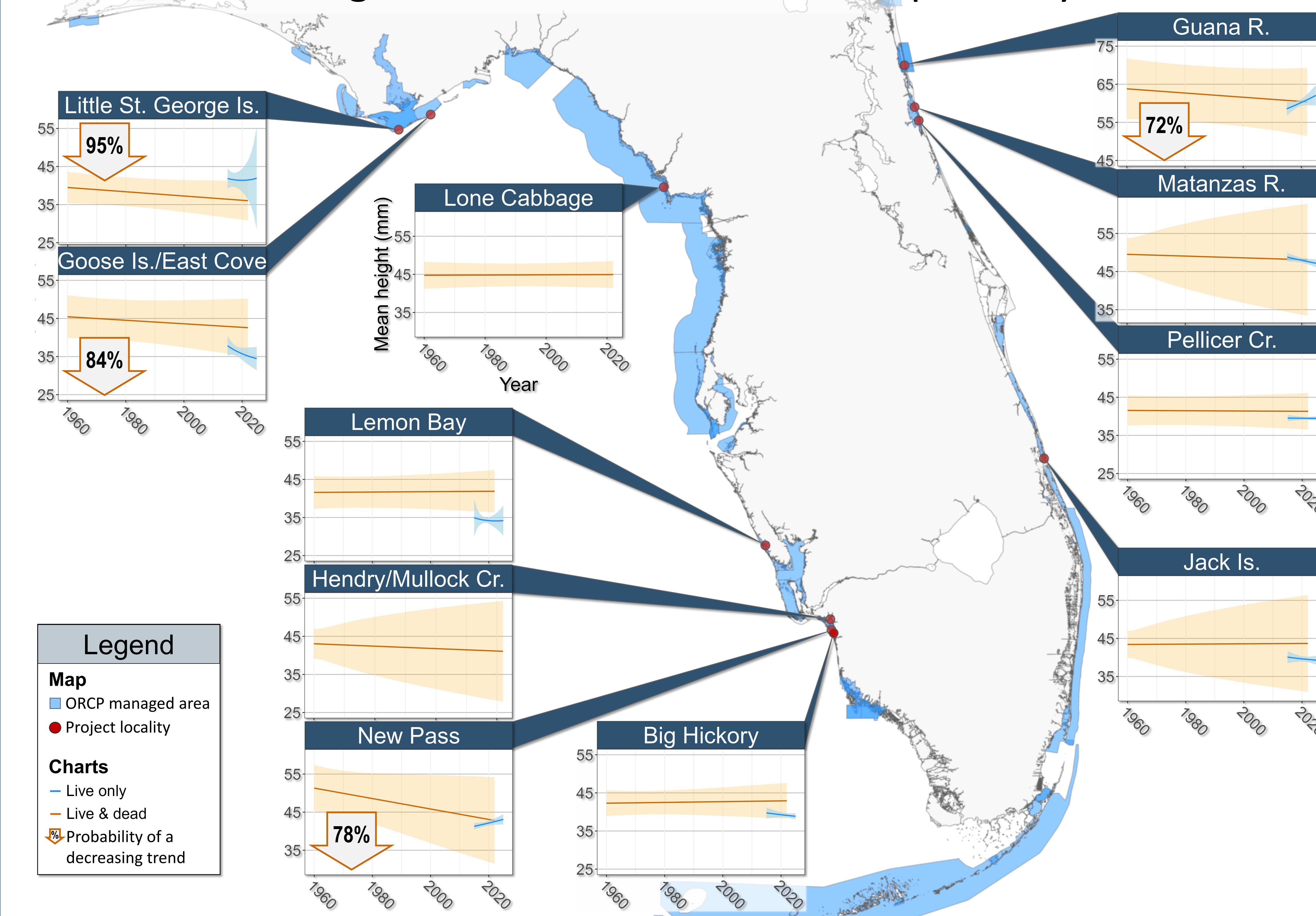
2 Radiocarbon dating suggested most of the dead oysters lived between 1960 and 2015.



2 We collected and measured dead, buried oyster shells from 31 reefs at 11 localities around Florida.



4 We found no long-term trends using the existing live oyster data alone, but including the new dead shell sizes revealed four localities where oysters are likely smaller today than they were in 1960. No localities had long-term size increases over the past 65 years.



## Conclusions

- Oyster reef death assemblages are rich archives of oyster population history.
- Integrating measurements from dead shells and live oysters is achievable.

## Acknowledgments

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