

USA RESTORATION BRIEFS

• University of South Alabama Oyster Reef and Fisheries Habitat Enhancement Program •

Volume Six: Oyster Reefs and Coastal Societies

Spring 2011

HIGHLIGHTS

- A socioeconomic survey of oyster management was developed by natural and social scientists.
- Telephone surveys of nearly 1000 coastal Alabama residents were conducted in 2005 and 2010.
- According to coastal residents in 2010, oyster reefs are the most threatened habitat in Alabama waters. Most residents believe oyster reef health has been declining for more than 25 years.
- Residents strongly support oyster reef restoration and protection, and a majority would pay additional taxes to protect oyster reefs.
- Both ecological and economic benefits are recognized as important reasons to protect and restore oyster reefs.
- This study demonstrates the value of natural and social scientists partnering to address coastal issues.

RESEARCH OBJECTIVES

The purpose of this study was to determine how Alabama coastal residents perceive oyster reefs, their role in nearshore waters, and their management.

Specifically, the survey focused on the current status, ecological importance, management effectiveness, and support for initiatives relating to the oyster fishery.

BACKGROUND



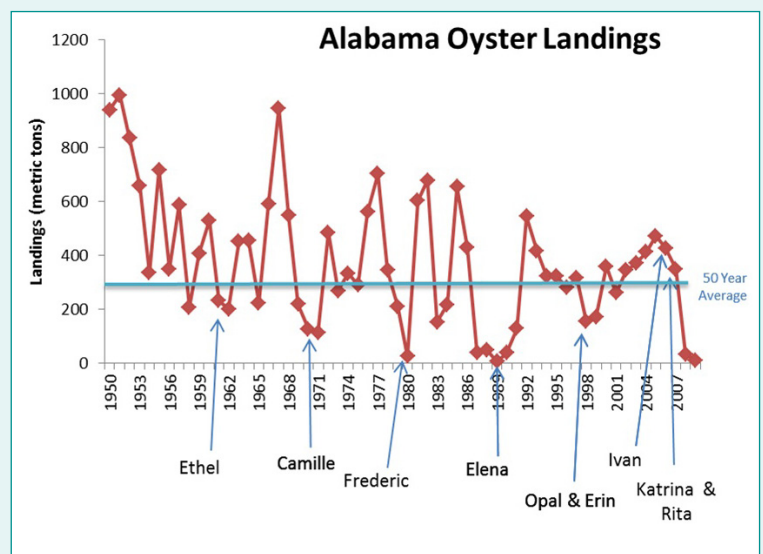
Fisheries in the northern Gulf of Mexico (GOM) are a major part of each coastal state's economy, and marine industries accounts for over 1.6 million jobs. The fishery for the eastern oyster *Crassostrea virginica* has proven one of the most difficult to maintain as managers must balance trade-offs of the economic benefits of harvest with the environmental benefits oyster reefs naturally provide. In the northern Gulf of Mexico, the oyster

fishery was worth \$62 million dollars in landings revenue in 2006 alone and ranked second only to shrimp making it extremely valuable, despite historically being one of the most unstable. In Alabama, oyster harvest yielded \$3.6 million in landings revenue, again ranking second only to shrimp harvest, but has been far from stable (Figure 1).

As natural ecosystem engineers of estuaries and nearshore waters, oyster reefs have high ecological and economic value due to their ability to improve water quality and clarity, stabilize sediments, buffer coastal wave action, and provide habitat for a diverse group of economically-important fish and shellfish. Understanding how coastal residents perceive such a valuable, yet vulnerable fishery is a key step towards making informed decisions for effective management and sustainability.

FIGURE 1.

National Marine Fisheries Service historical oyster landings in Alabama from 1950 until present. The blue arrows indicate landfall of major hurricanes.



METHODS

This study conducted one thousand telephone surveys of randomly selected households in Mobile and Baldwin counties in Alabama in 2005 and 2010*. Each survey was conducted by professional polling group and the short survey took approximately fifteen minutes to complete.

*Funded by American Recovery and Reinvestment Act

FINDINGS

Alabama coastal residents perceive oyster reefs as important features of the nearshore seascape and coastal fishing economy. In 2010, 93% of coastal Alabama residents believed that without healthy oyster reefs the environmental health of Mobile Bay would decline. Declining reef habitat (67%) and over harvesting (43%) were major problems, but only one quarter of those surveyed supported stricter limits or shorter harvest seasons.

The most popular approach to improving the health of the oyster fishery was to impose stricter fines for sewage spills and water pollution. The majority of coastal residents consistently stated they would support legislation and even increased state taxes to better protect the health of oyster reefs. However, a slight shift in their reasoning for protection was observed from 2005 to 2010.

Alabama coastal residents recognize both ecological and economic benefits as important reasons to protect and restore oyster reefs. In 2005, most residents identified environmental benefits as the primary reason to protect reefs, while in 2010 more residents were concerned with the economic value of the fishery (Figure 2). In 2010, residents were asked when Alabama oyster reefs were in their best condition, and over half of respondents believed that oyster reefs have been declining for over 25 years (Figure 3).

Why Protect Oyster Reefs?

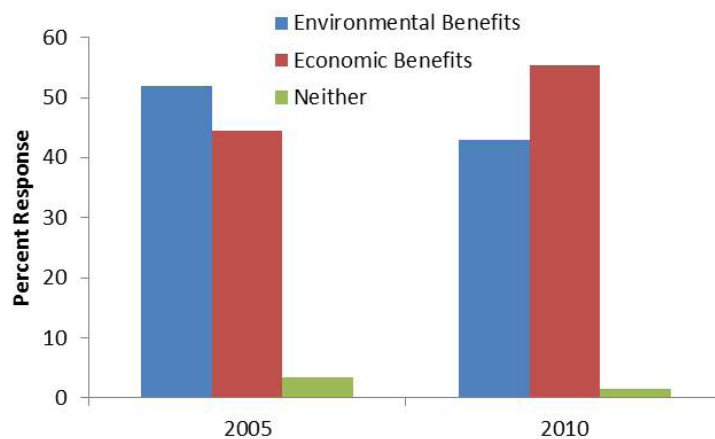


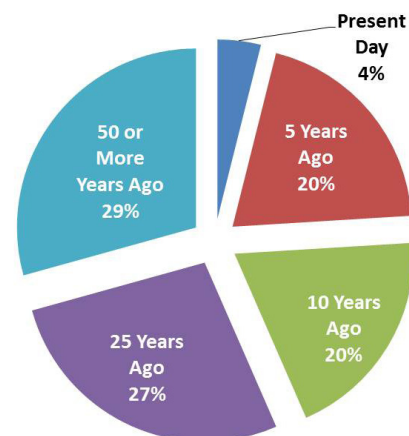
FIGURE 2.

In 2005, a slight majority of residents stated ecological benefits as the most important reason to protect reefs. Respondents in 2010 more frequently cited economic value of oyster harvest.

FIGURE 3.

In 2010, residents were asked when oyster reefs in Alabama coastal waters were in their best condition.

When were Alabama Oyster Reefs in their Best Condition?



APPLICATION

Coastal Alabama residents recognize oyster reefs to have high environmental value, in addition to the economic value when harvested. Public support for greater protection and restoration of oyster reefs for ecological benefits could be attained and would provide a starting point for more inclusive management approaches that consider social, ecological and economic values.

PUBLICATIONS

Scyphers SB, Picou JS, Brumbaugh RD, Powers SP. Traditional ecological knowledge of the ecosystem services and harvest trade-offs of an exploited marine habitat. In Prep.



SEAN POWERS, PH.D., *Restoration Program Manager*
Associate Professor of Marine Sciences, USA
Senior Marine Scientist II, DISL
Dauphin Island, AL 36528
251.861.2141 ext.2265
spowers@usouthal.edu

STEVEN SCYPHERS, *Restoration Briefs Editor*
Ph.D. Candidate, University of South Alabama &
Dauphin Island Sea Lab
Dauphin Island, AL 36528
251.861.2141 ext.2384
sscypers@disl.org