Project Significance
Along the coastal and northern region of the west coast, numerous oyster restoration projects have occurred. They have their importance within estuarine ecosystems, there have been few oyster restoration projects in Southern California. This project aims to provide tools and economic incentives to motivate the support future restoration efforts.

Objectives
The goal of our project is to answer the following questions:

1. Where are native oysters in Southern California?
2. What are the incentives for native oyster restoration?
3. How do we foster successful restoration?

Conclusion
This project indentified the presence of native oysters in Southern California through spatial analysis, began quantifying the economic incentives for doing restoration through the use of cost benefit analysis and bio-economic model, and developed communication strategies such as an ArcGIS story map and public service announcement videos to help showcase the importance of this project.

Acknowledgments & References

Planning and Incentivizing Native Oyster Restoration in Southern California
Erin Winslow, Emily Read, Desmond Ho, Brianna Group, Colleen Grant
Faculty Advisor: Hunter Lenihan

Meet the Native Olympia Oyster
Ostrea lurida, the Olympia oyster, is the only oyster native to the west coast of the United States and was once highly abundant in bays and estuaries along California’s coastline. Their populations declined in the early 1900’s due to overharvesting, pollution, and habitat destruction. Today, Olympia oysters are found throughout Southern California but populations are small and conditions are not ideal for oyster bed formation.

Why Native Oysters?
With 70% of California’s population living in counties directly on the coastline, people are putting a significant amount of stress on coastal ecosystems due to pollution, erosion, and habitat destruction. One way to mitigate these impacts is California’s coastal oyster beds. Oyster beds have been shown to help with water quality improvement, shoreline stabilization, and the production of food and habitat for fish and invertebrates.

Economic Incentives
1. Shoreline Stabilization: Cost benefit analysis comparing restoration to traditional shoreline stabilization methods
2. Habitat & Food for Fish: Bio-economic model to estimate impact on Kelp Bass and California Halibut

Communication
1. ArcGIS Story Map: Organize oyster presence data for public & scientists
2. Digital Marketing: Write, direct, and produce films about the importance of native oyster restoration
3. Oyster Restoration Forums: Plan a forum at the Aquarium of the Pacific to enhance communication between oyster restoration experts around the country

Results
Native oysters are present in most bays and estuaries in Southern California. Significant loss of wetland habitat in California contributed to the loss of native oysters in the early 1900’s. However, we did find oysters in low abundances along the coast.

Where are native oysters in Southern California?

What are the incentives for native oyster restoration?

How do we foster successful restoration?

Conclusion

Acknowledgments & References

Group Project Advisor: Professor Hunter Lenihan
Additional Advisors: Jose Zenteno, Professor Danielle Zackrill

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Group Project Client: Carpinteria Salt Marsh Reserve


Restoration Forum

ArcGIS Story Map

Video Production

A public service announcement and documentary film to motivate future restoration efforts in California.