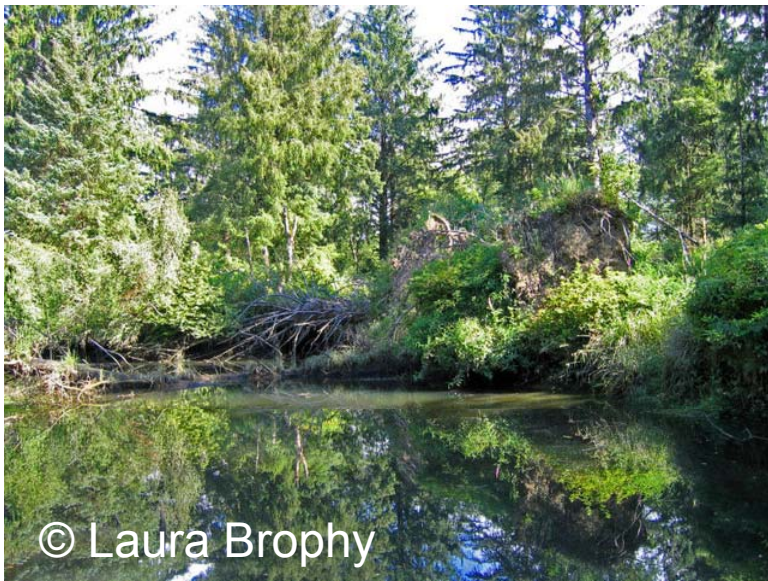


# Collecting and Using Economic Information For Marine and Coastal Management



Linwood Pendleton  
Senior Fellow,  
The Ocean Foundation

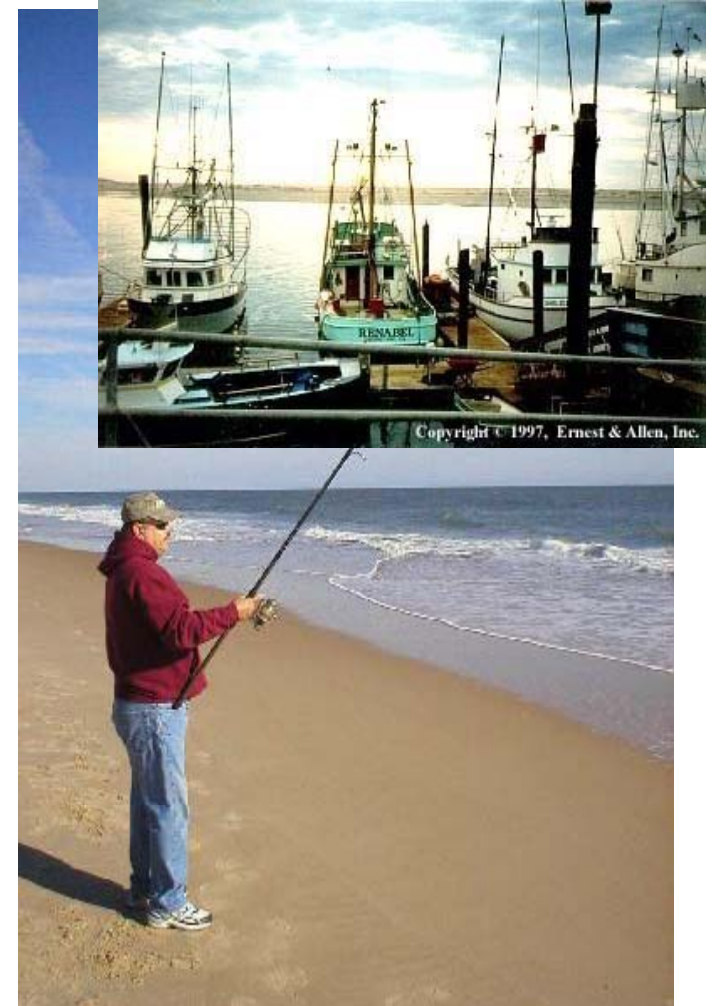
Joint Ocean Commissions Initiative  
May 16, 2008, Monterey CA

with Allison Chan (Ocean Foundation)  
and Scott Norris (MBARI) and  
editorial help from Adina Abeles



# Know Your Coastal Economy

1. Know your inventory
2. Know your customers
3. Have they changed?



# Identify the causes of change for your coastal economy

1. Management
2. Ecosystem change
3. Environmental change
4. Population change
5. Demographic change



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# Look forward: What Are the Outcomes of Policy?

1. Identify those who benefit (your constituency)
2. Identify those who lose (compensation?)



# Quantify Economic Use and Identify Change

1. Establish baseline of uses
2. Identify changes in uses
3. Isolate/understand the causes of change
  - Ecosystem conditions
  - Regulation
  - Climate change/weather, etc.



# Baseline: Morro Bay, CA

1. Commercial Fishing
2. Party Boat Angling
3. Beach and park visitation
4. Nature Tourism
5. Kayaking
6. Boating
7. Private Recreational Fishing



# Baseline of Values?: Morro Bay, CA

Commercial Fishing	\$2 million gross
Party Boat Angling	11,600 angler trips
Beach and park visitors	2 million + visits
Nature Tourists	?
Kayakers	?
Boaters	?
Private Recreational Fishers	?



# Regional Internet Survey of Coastal Users (w/ Chris LaFranchi)

InsightExpress.com - Windows Internet Explorer

http://www.insightexpress.com/ix/Survey.aspx?livePreview=true&resetPosition=true&id=132646&accessCode=708305831

File Edit View Favorites Tools Help

Google G Go Bookmarks 160 blocked Check AutoLink AutoFill Send to Settings

InsightExpress.com

insightexpress  
Research for the Right Decision®

TRUSTe CERTIFIED PRIVACY TRUSTe EU SAFE HARBOR BBB OnLine RELIABILITY PROGRAM

1. This survey helps us understand exactly how the coast affects your life and well-being, what aspects of the coast are most important to you, and how you contribute to the California economy by visiting the coast. Even if you haven't visited the coast recently or ever, we still want to hear from you.

First, what county do you reside in?

- Santa Cruz County
- Santa Clara County
- San Bernardino County
- Riverside County
- San Luis Obispo County
- Ventura County
- San Benito County
- Los Angeles County
- Monterey County
- San Mateo County
- Santa Barbara County

# Regional Visitation Patterns

125. We'd like to look at where you went when you visited the California coast during the last twelve months.

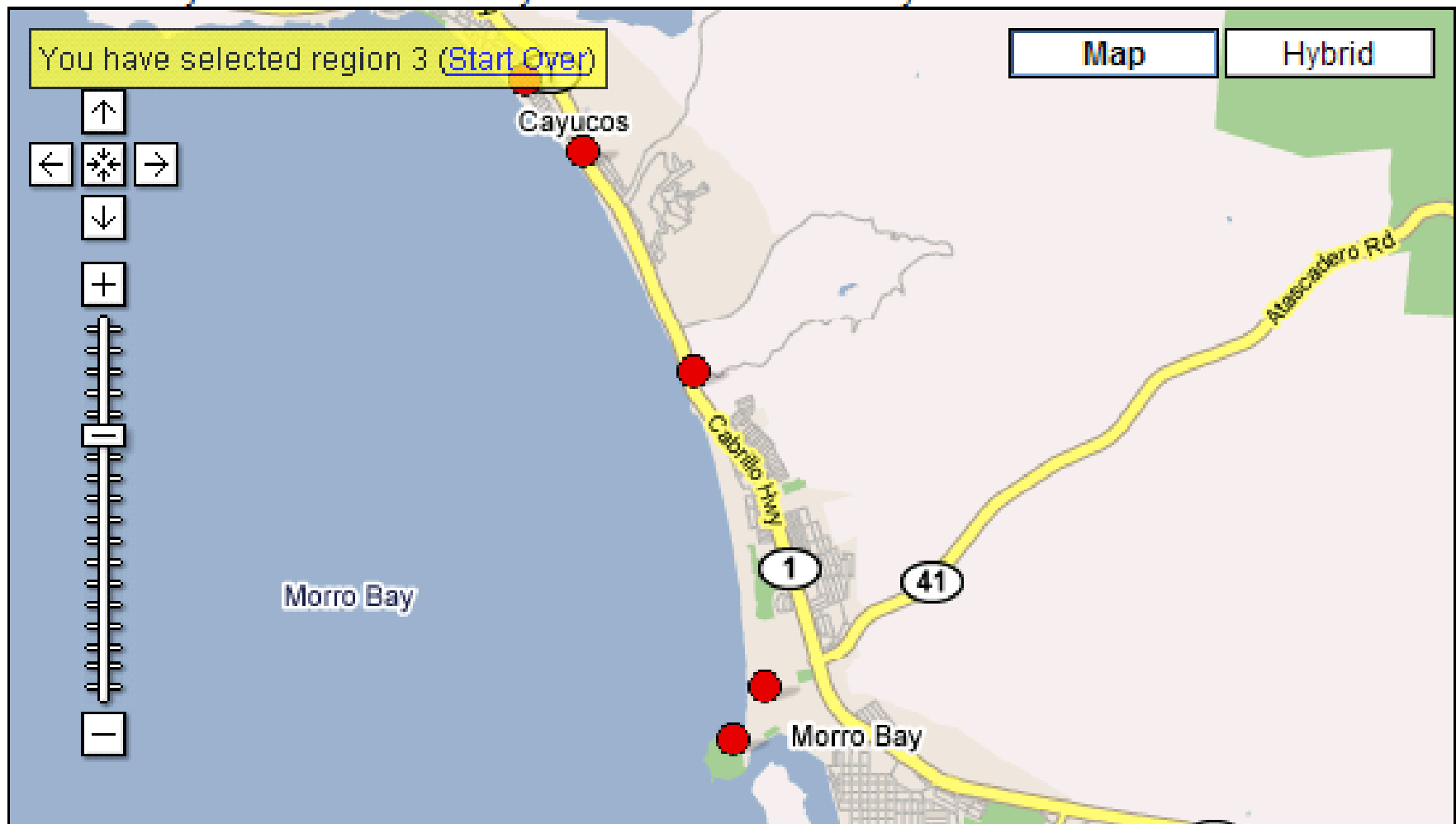
For each of the following coastal areas on the map below, please indicate how many times you visited each of these coastal areas in the last 12 months. If you did not visit a particular coastal area, please choose 0.



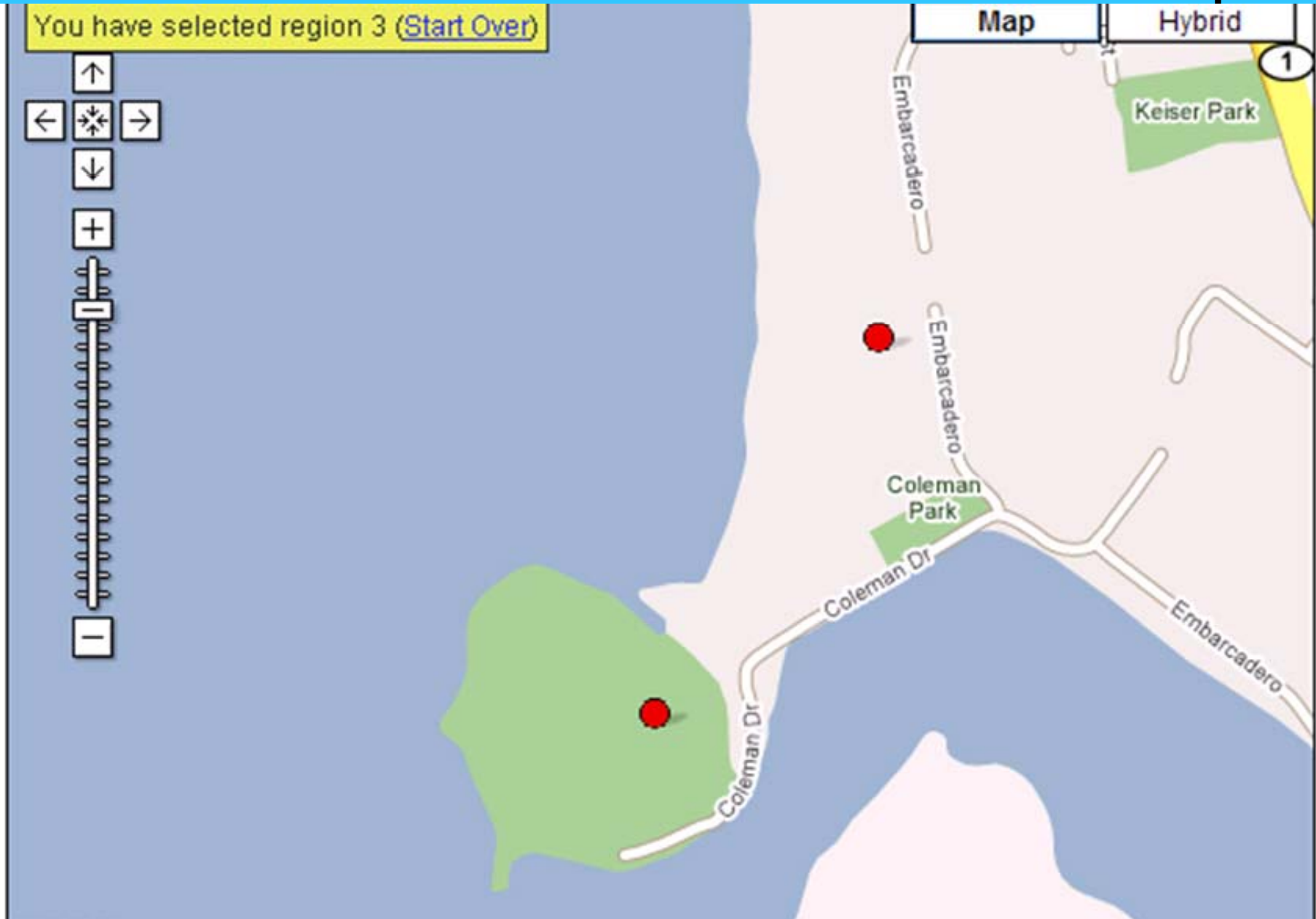
# Detailed Information about Last Trip

Please click on the map below to show us where you last visited the coast.

To zoom in on an area, just click! As you zoom in, you might want to use the HYBRID button so you can see exactly where on the coast you last visited.



# Detailed Information about Last Trip



# Detailed Information about Last Trip

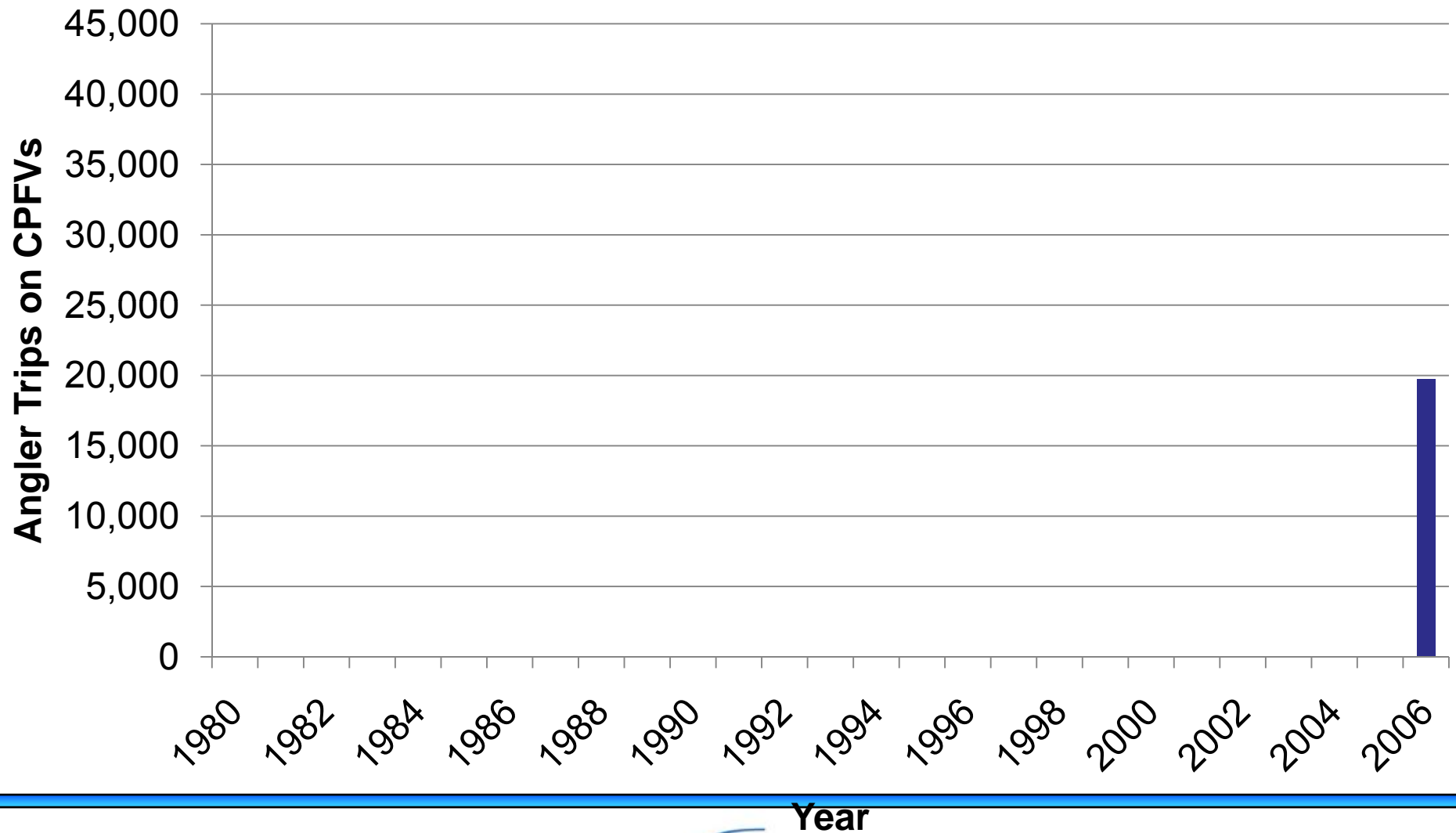


# How has the baseline changed?

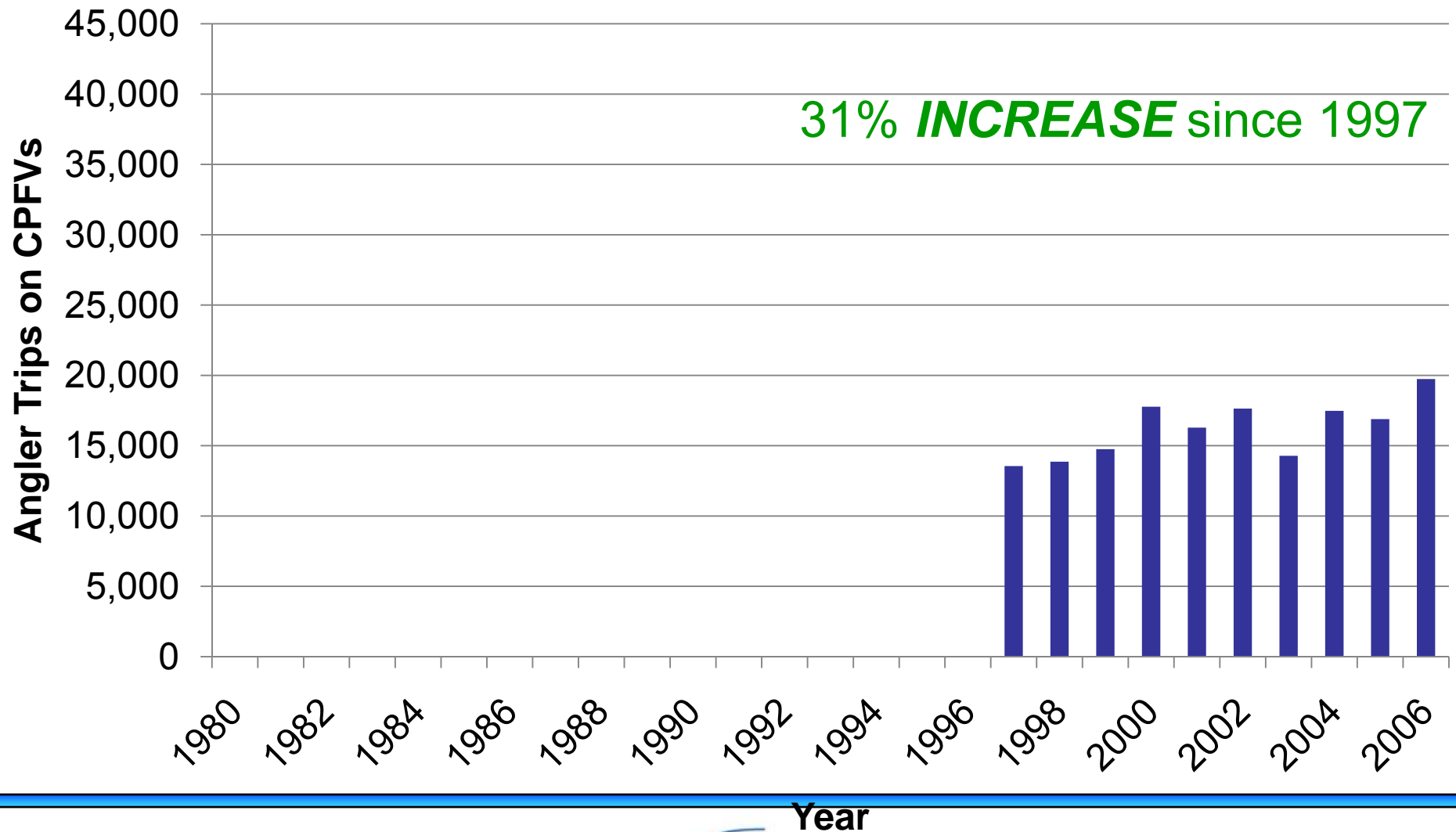
- Is today's baseline
  - unusual?
  - sustainable?
  - changing?



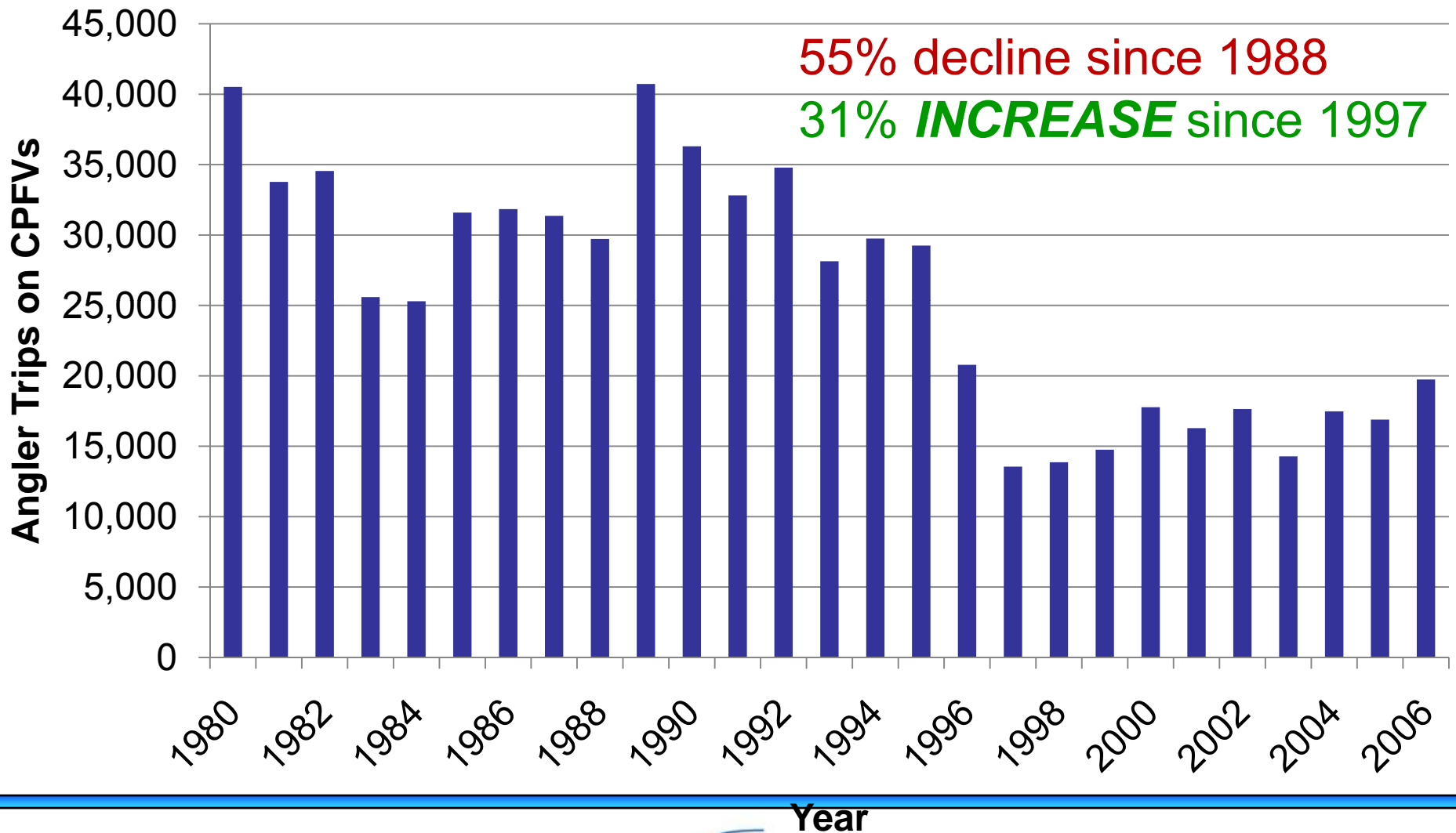
# # Party Boat Anglers Trips/Year: Morro Bay and Pt San Luis



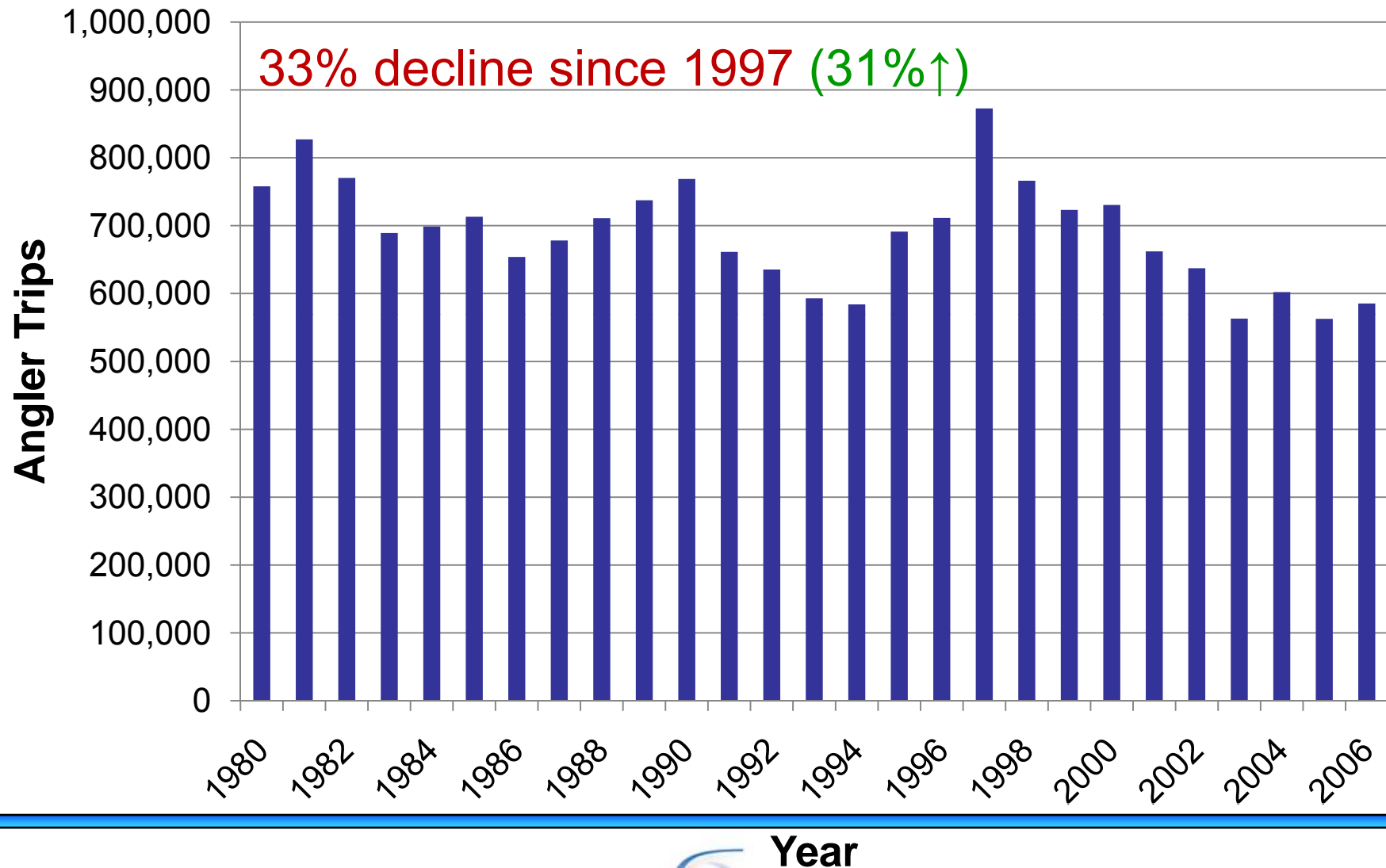
# # Party Boat Anglers Trips/Year: Morro Bay and Pt San Luis



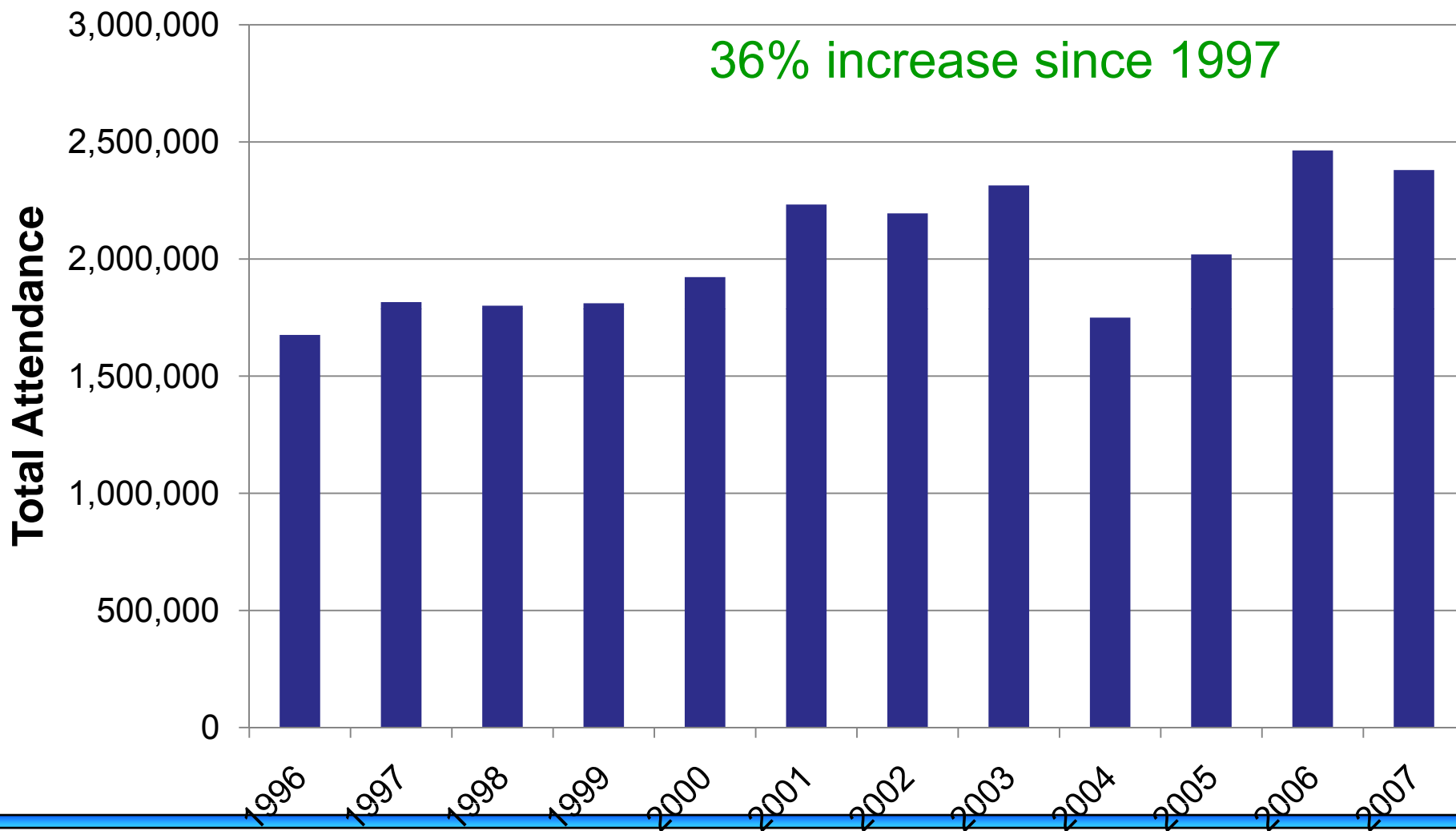
# # Party Boat Anglers Trips/Year: Morro Bay and Pt San Luis



# Total Number of Anglers Trips/Per Year in California



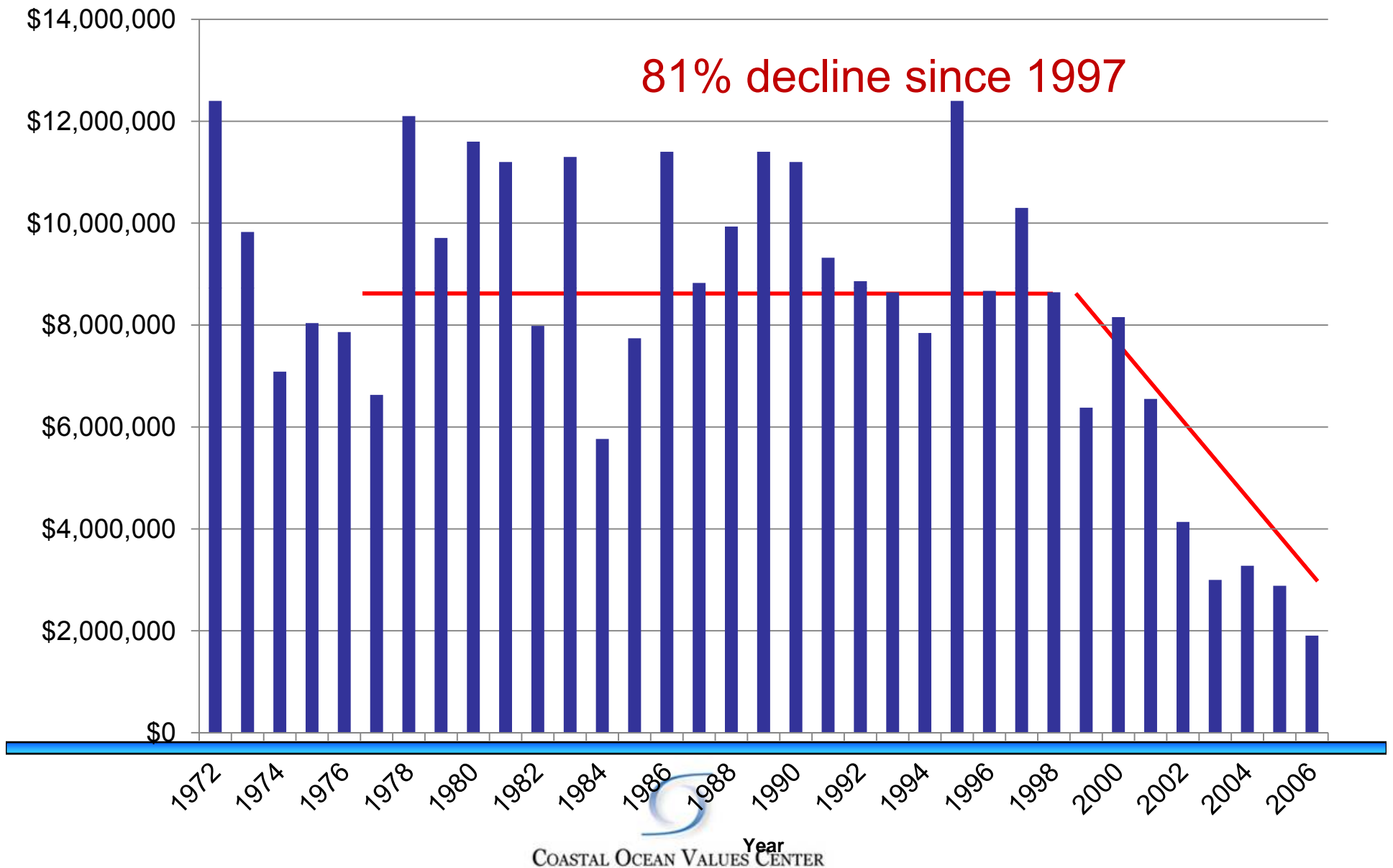
# Annual Attendance at Morro Bay and Montaña de Oro State Parks



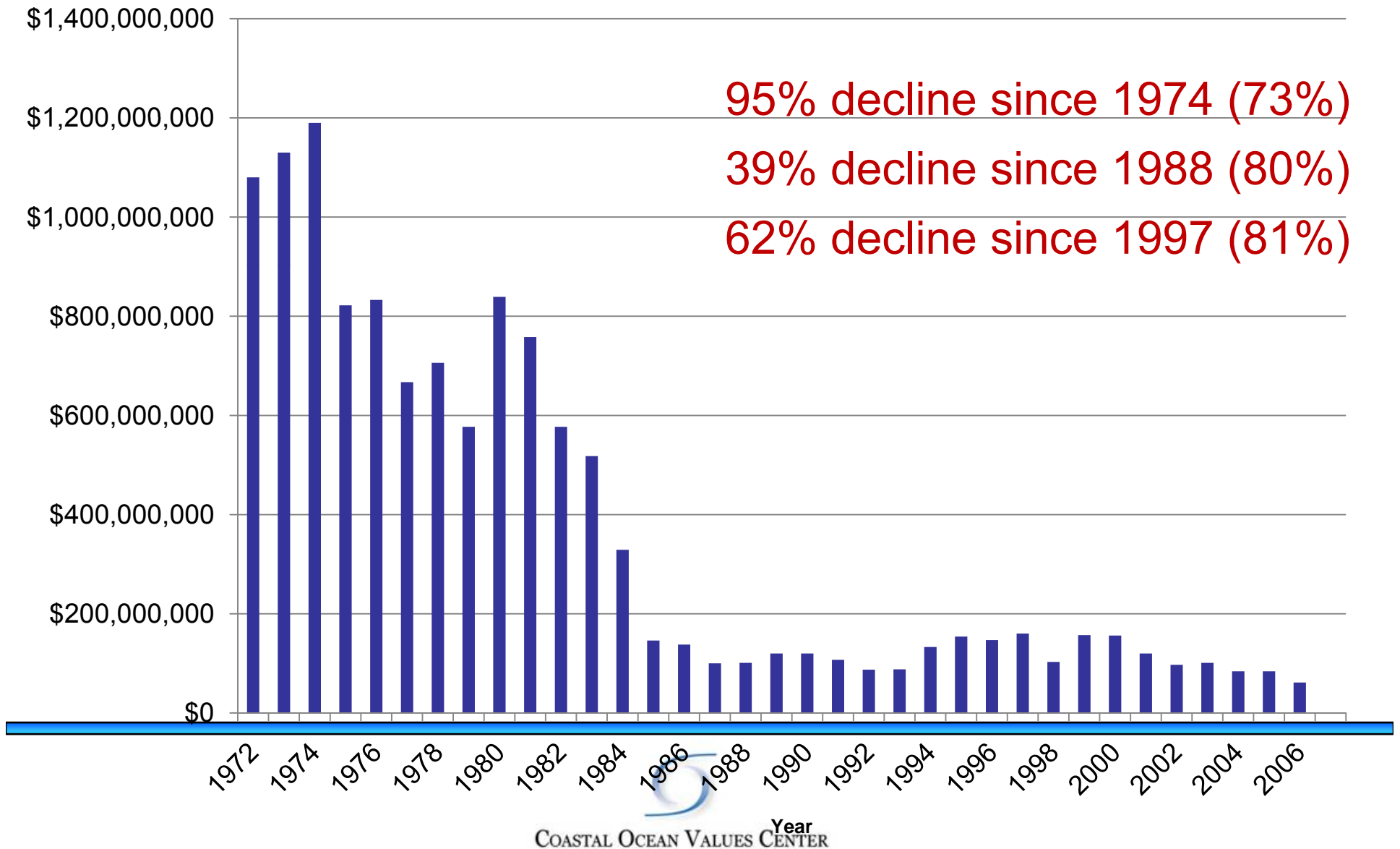
Year

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# Annual Commercial Fishing Revenue in Morro Bay (Adjusted to the year 2006)



# Annual Commercial Fishing Revenue in California (Adjusted to the year 2006)



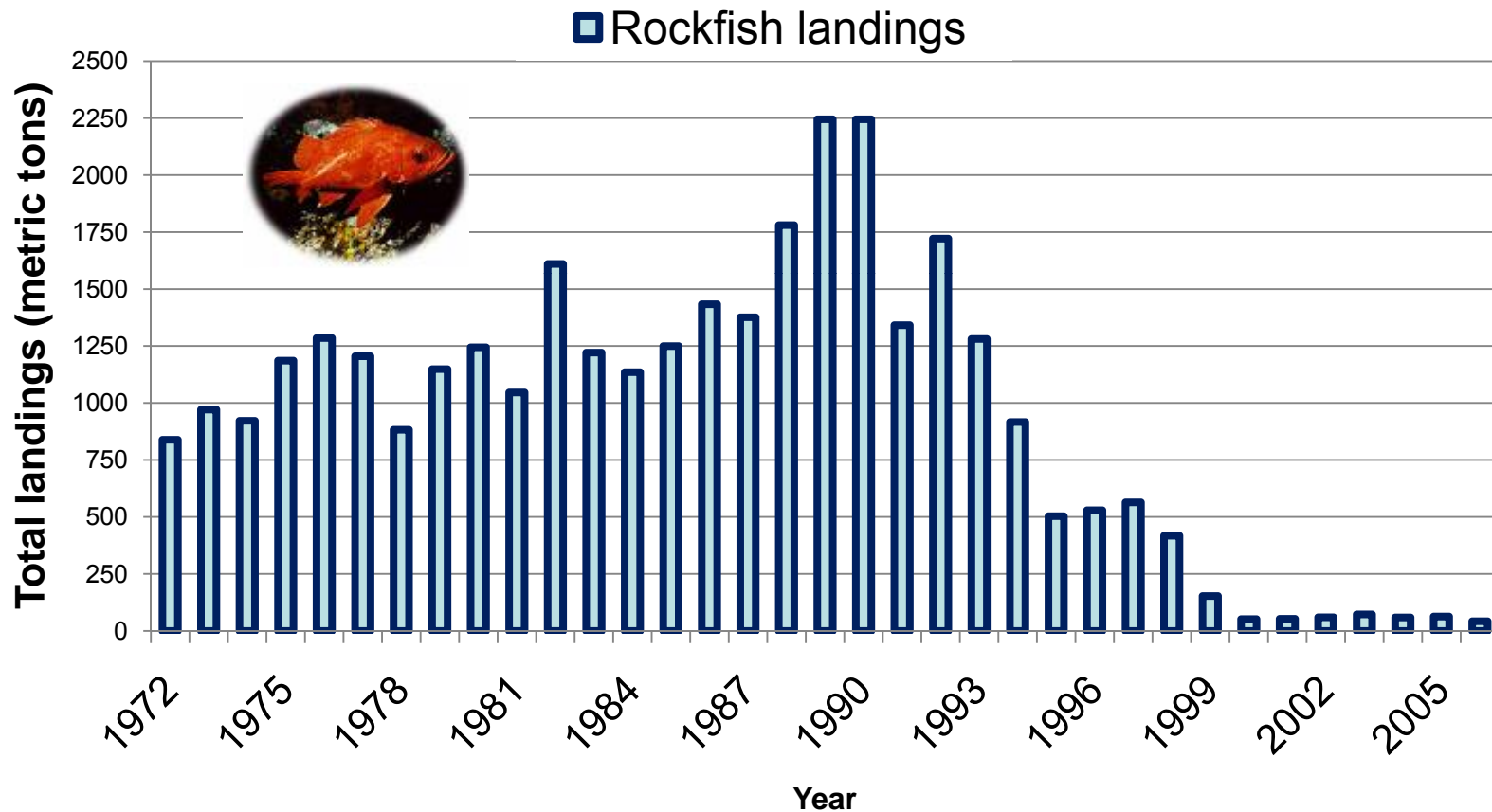
# Looking Forward – Policy Outcomes

We want to know the potential economic impacts of  
regulation,  
restoration,  
marine protection,  
water treatment,  
stormwater diversion,  
ecosystem-based management, ...

LOOK FORWARD – FIRST LOOK BEHIND



# Why Did the Baseline Change? Morro Bay – Rockfish harvest.



# Morro Bay – Regulations and rockfish harvest.



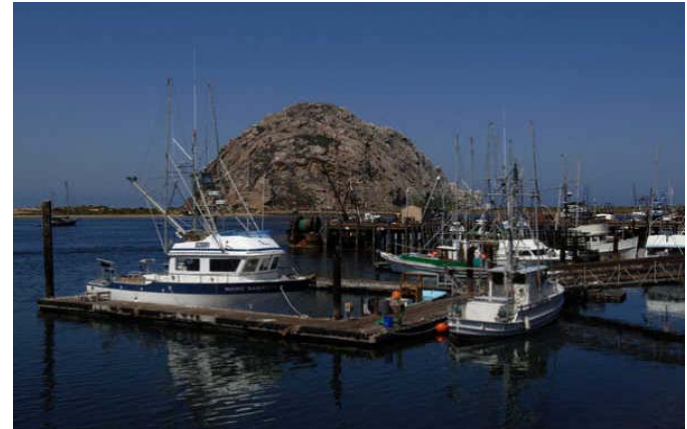
Catch Limits



Management Plans



Rockfish Conservation Areas

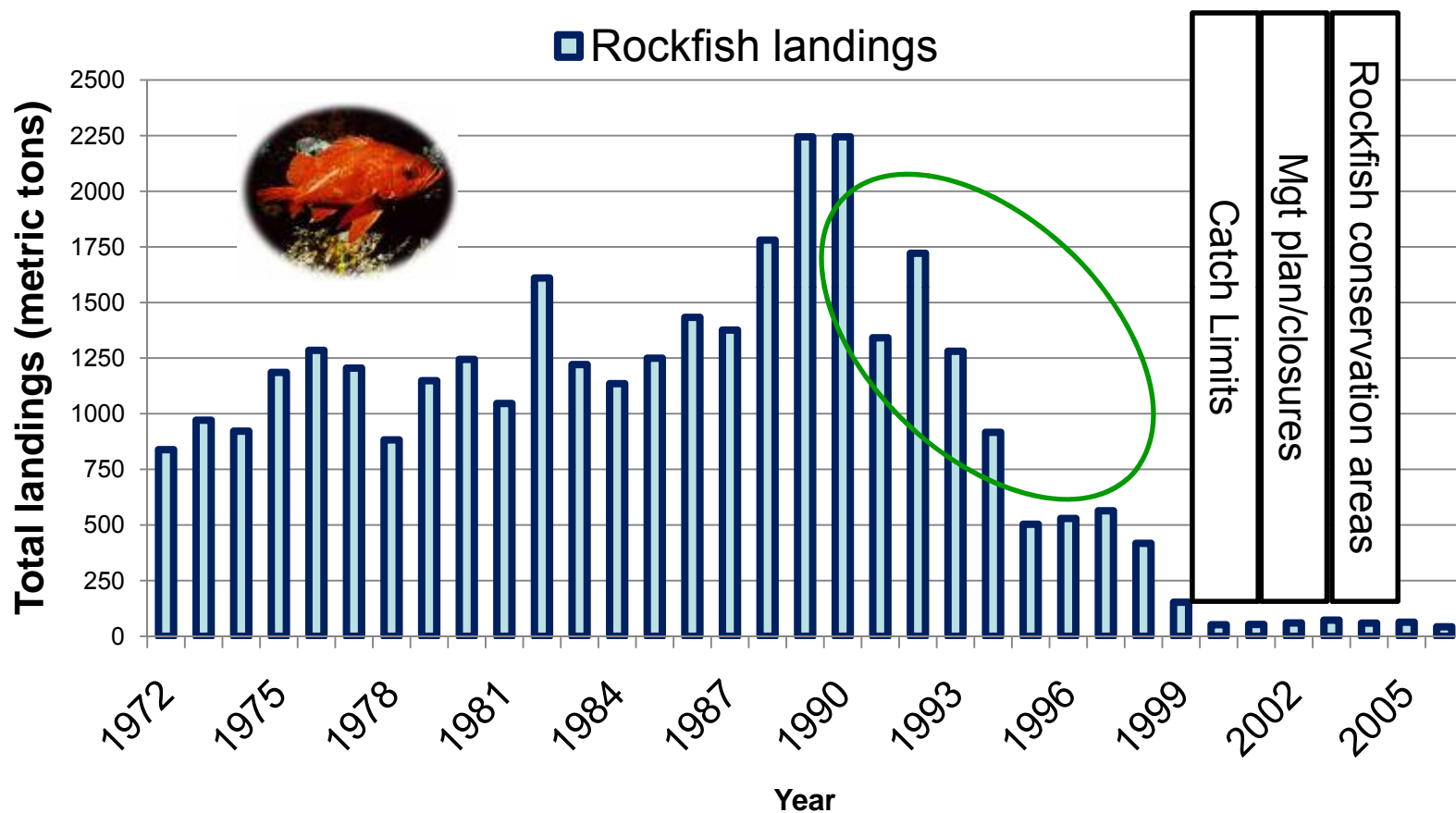


Source: CA DFG



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# Morro Bay – Are regulations responsible for decline in rock fish catch?



# Elkhorn Slough, CA – Economic Impacts of Restoration



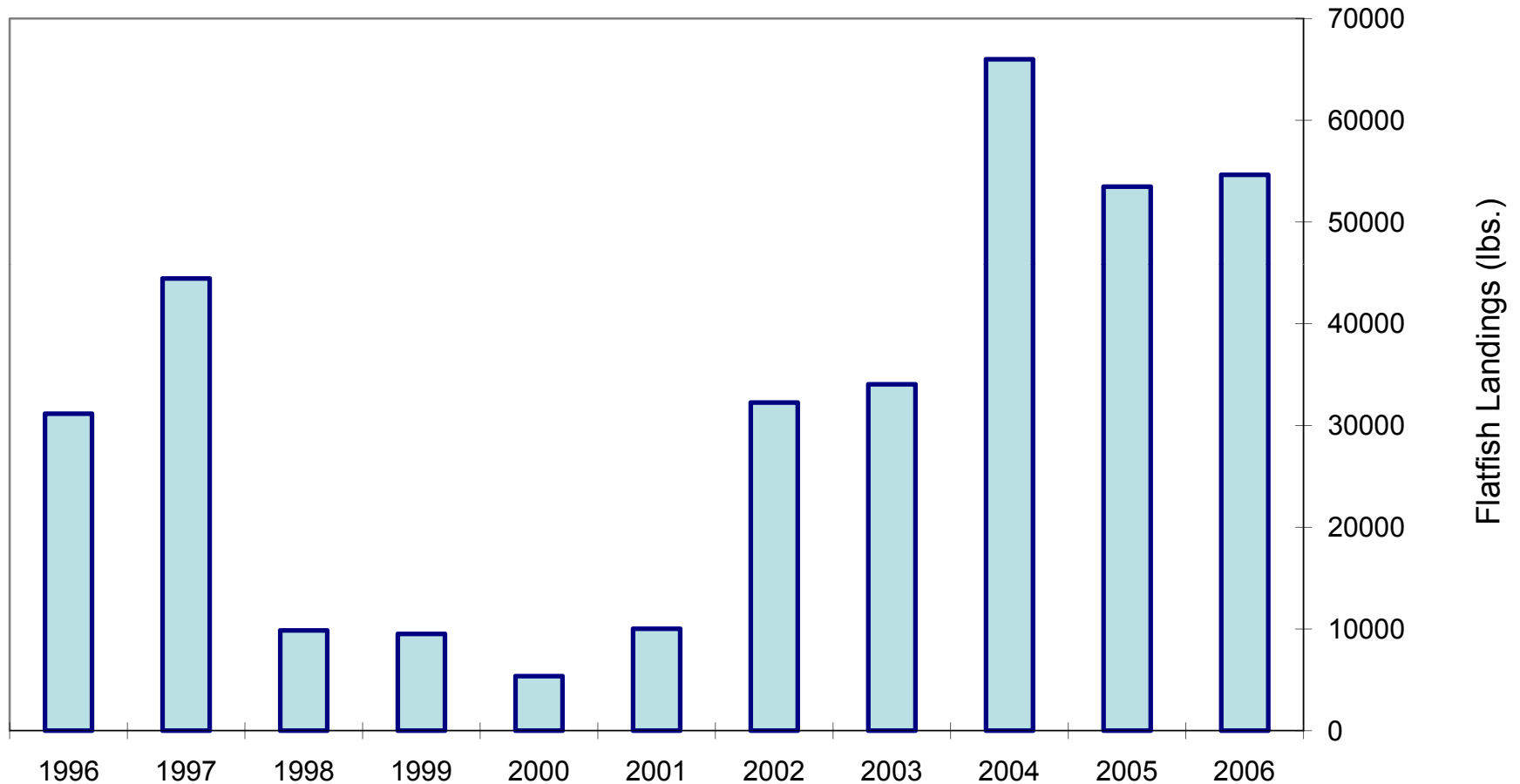
© Scott Norris

Restoration →  
Increased Days with  
Low O<sub>2</sub>?

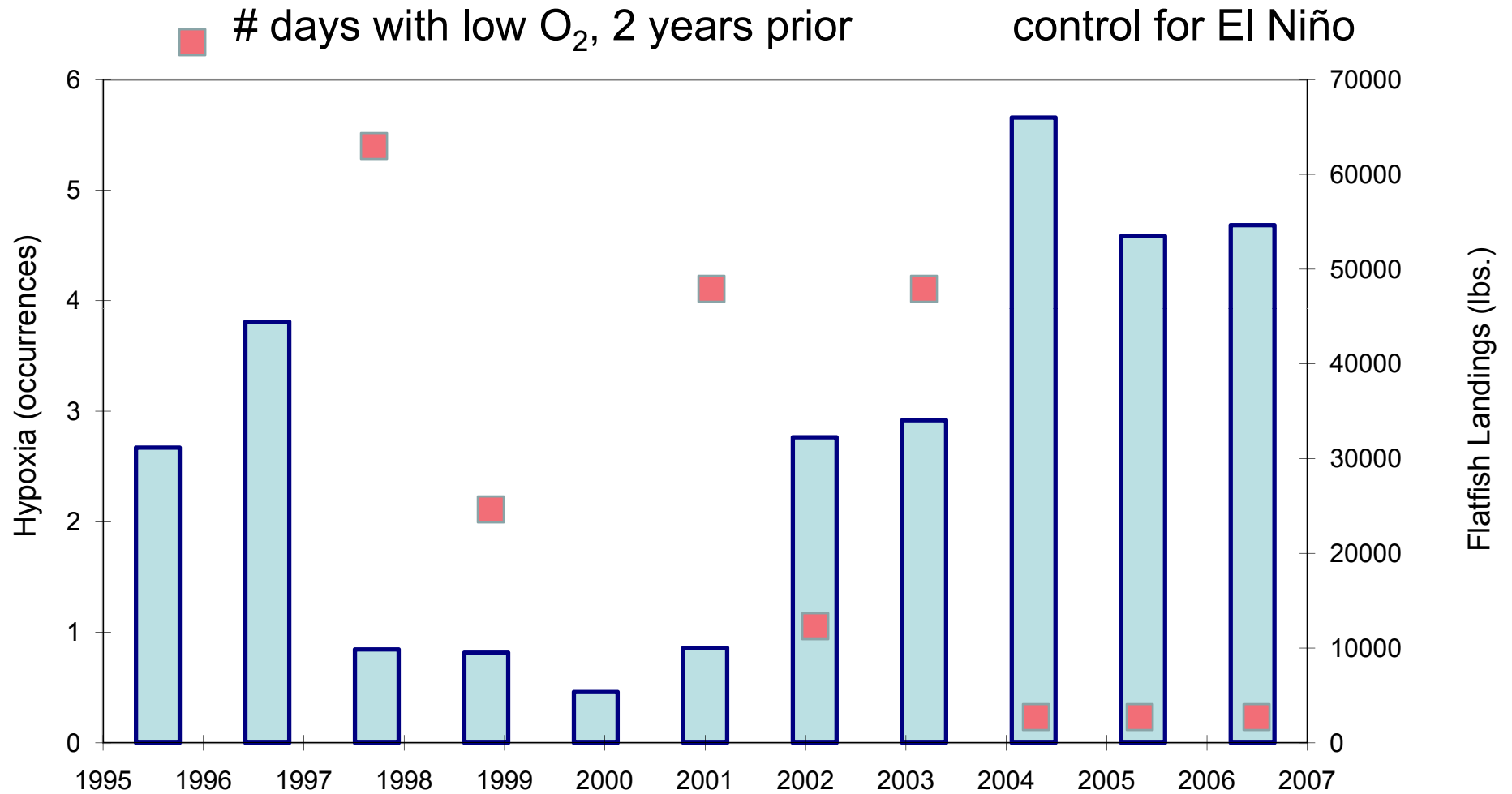
California Halibut  
Starry Flounder  
English Sole



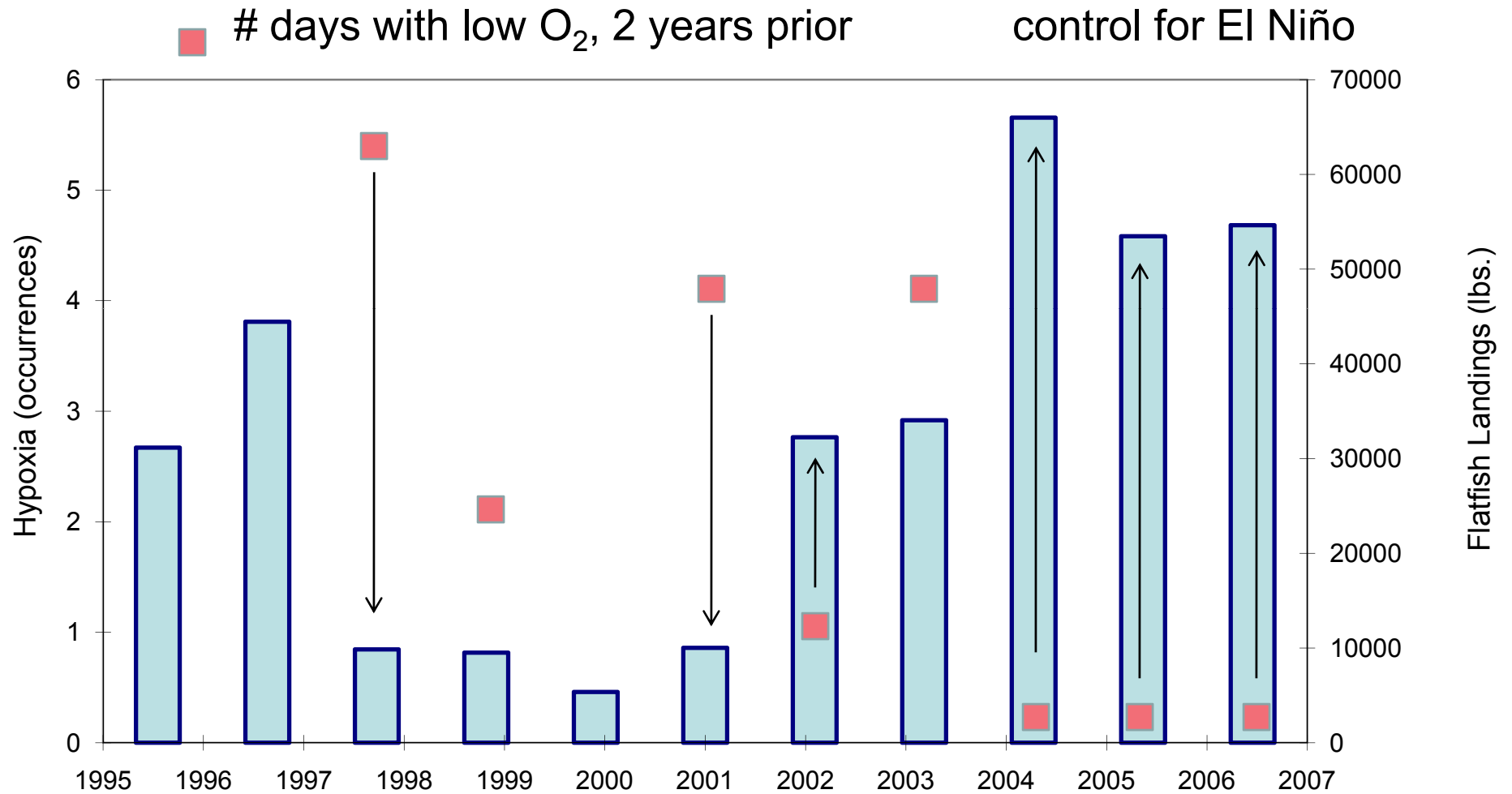
# Near Shore Commercial Catch of Flounder, Halibut, Sole in Moss Landing



# Affect of Hypoxia on Commercial Flatfish Catch



# Hypoxia Associated w/ Reduced Flatfish Catch



# Comparative Analysis:

Many factors affect human uses.

Control for multiple factors:

environment

population growth

policy

Compare with and without policy/environmental change.

Before and after.



# Does Coastal Restoration Affect Visitation: Zuma Lagoon



Site Grading, April 1998

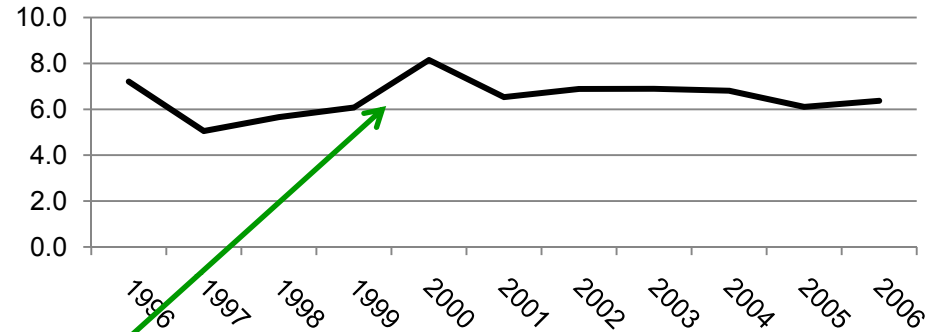


**bay restoration commission**  
STEWARDS OF SANTA MONICA BAY



August, 2001

**Zuma Beach Attendance  
(million visits)**



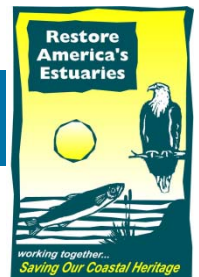
Before/After  
With/Without  
Control for

Population Growth,  
Water Quality,  
Weather, ...

**NOAA FISHERIES:  
Restoration Center**

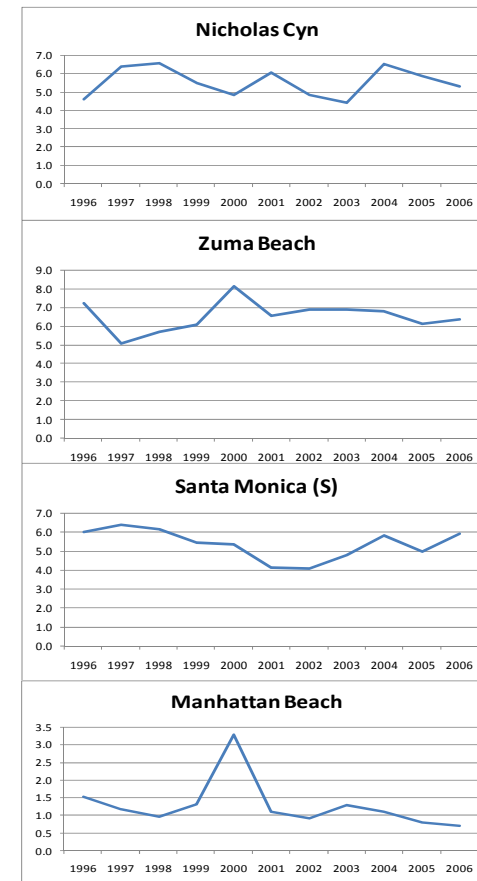
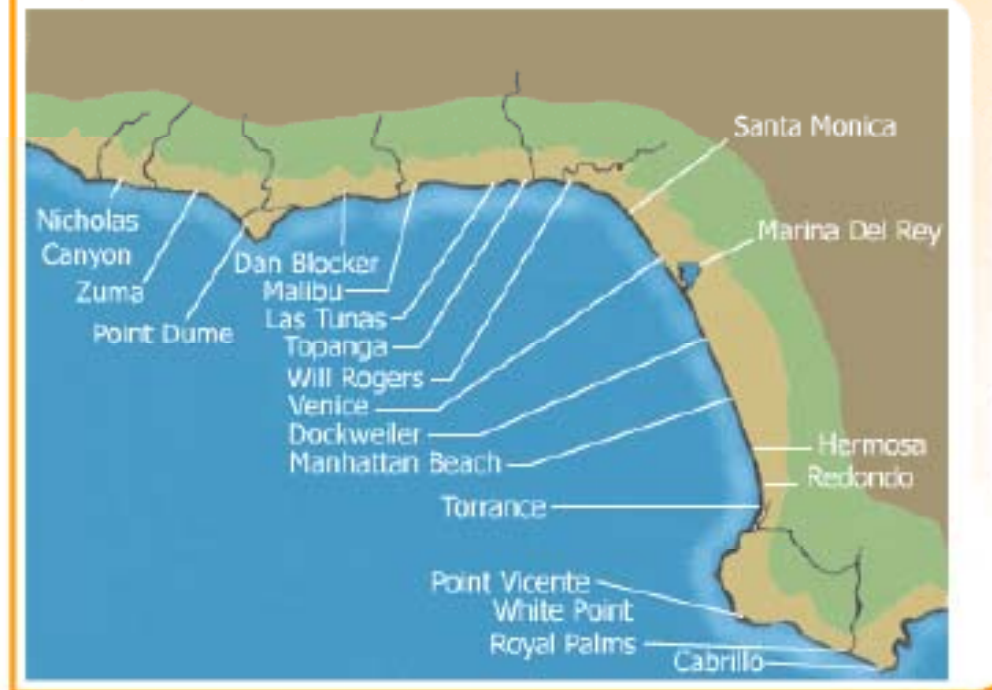


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# 27 Beaches, 10 Years of Data

## Los Angeles County Beaches



# Restoration Associated with Increase in Visitation



Control for other factors  
many years  
many sites

[Copyright © 2006 Kenneth & Gabrielle Adelman.](#)

Restoration → 1,200,000+ more visits than elsewhere  
(99% confidence)



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# Conclusion

- People pay for coastal management.
- People are affected by environmental change.
- Need long term data, at many sites, to understand local impacts of coastal policy.
- Pacific coast effort to collect basic human use data for coastal systems.

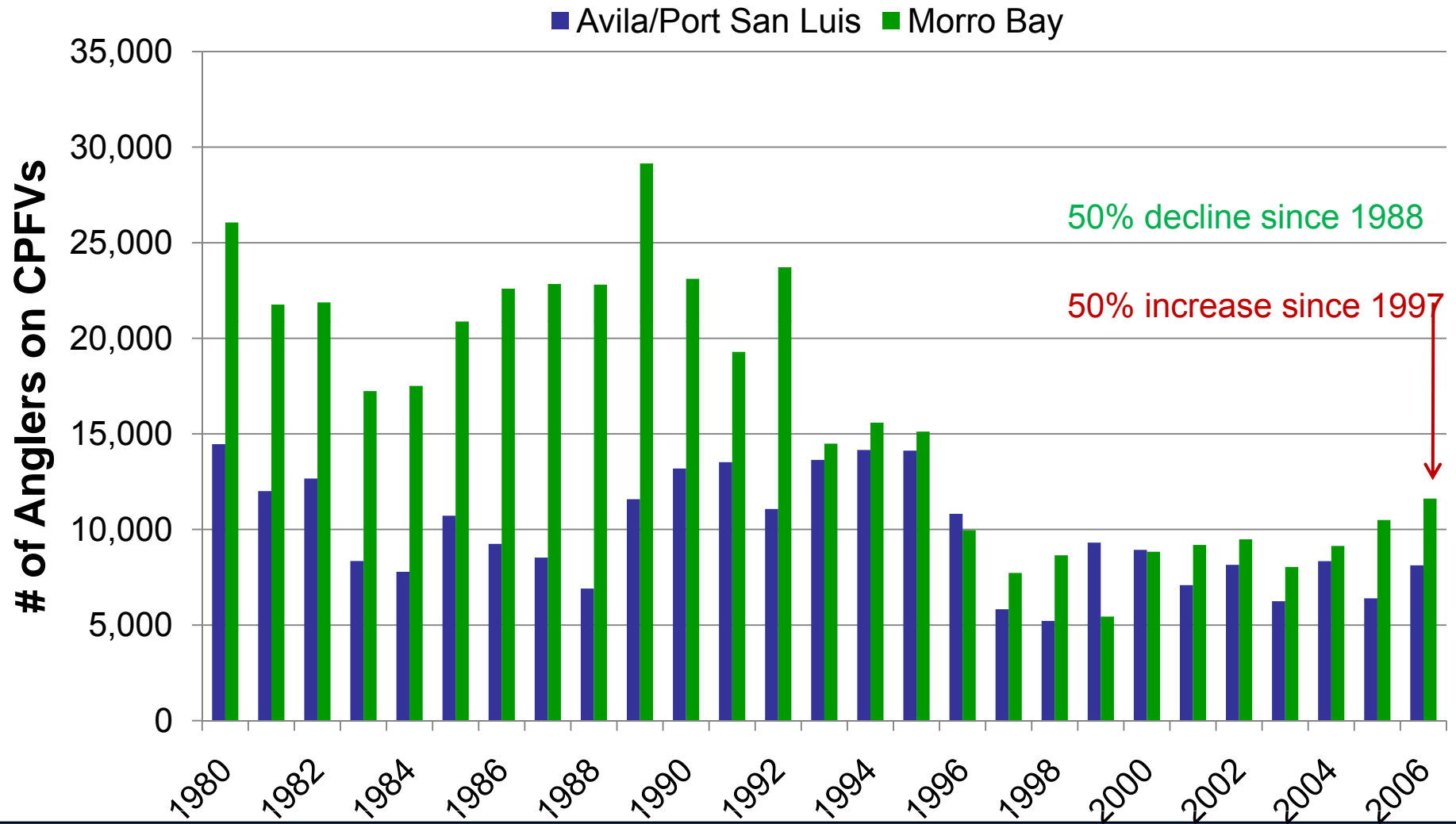


# Back-up Slides



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# # of Party Boat Anglers/Year in Morro Bay & Pt San Luis



Year

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