

NOAA's Channel Islands National Marine Sanctuary

Strategies to Promote Public Understanding, Support and Stewardship of the Channel Islands Marine Protected Areas/Initial Results of First 5 years of Monitoring

Laura Francis

Education Coordinator

Channel Islands National Marine Sanctuary





Channel Islands MPA Network



The overall goals of the Channel Islands National Marine Sanctuary Marine Protected Area education and outreach program are to raise public awareness and understanding of the MPA network within the sanctuary and to enhance compliance with MPA regulations.



Outline



- Importance of Education and Outreach
- Public Input & Needs Assessment
- Product Development
- Distribution Approaches
- First 5 Years of Biological Monitoring



Role of Education and Outreach



- Increase awareness to promote understanding and support of Channel Islands MPA Network
- Develop effective communication strategies for different audiences
- Enhance Compliance through interpretive enforcement
- Develop a personal sense of ownership and responsibility



- Create an interagency team of educators
- Develop a training program for staff and volunteers
- Integrate marine reserves educational materials into existing educational programs
- Develop interagency web site for Channel Islands Marine Reserves
- Develop a program for organized public educational visits



Nine activities are defined in the Channel Islands NMS management plan.

1. Work with Sanctuary Education Team to conduct Needs Assessment
2. Printed educational products
3. Public Service Announcements
4. Sanctuary cruises
5. Volunteer Scientist Programs
6. Interpretive Kiosks and Signs
7. Website
8. Public outreach and events
9. Recreational Boater Survey



Outreach Timeline



- 2001-02 Sanctuary Education Team (SET) conducts needs assessment in preparation for MPA outreach (before designation)
- 2002 SET Matrix Created
- 2003 Began creating different products to inform public about *rules and regulations* of newly designated state marine zones within CINMS.
- 2007 Began re-tooling products to include new Federal MPA map graphics



SET Matrix

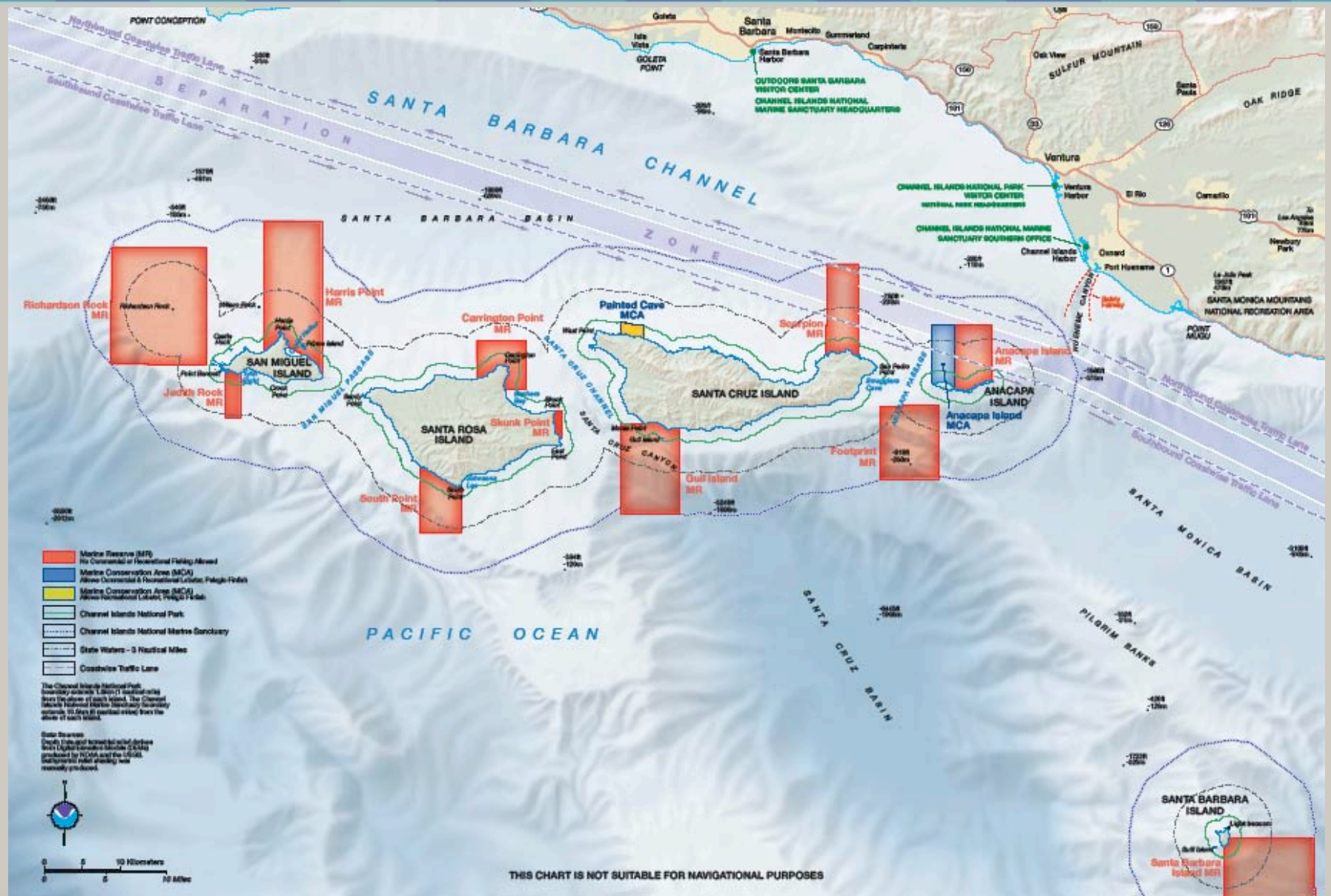


Rules and Regulations – Short-term Priority Assessment

User Groups		Materials and Products				Distribution Methods				
		Printed Materials	Charts & Maps	Signage	Video	Weather Kiosk & VHF	Media Radio TV Print	Internet	Outreach Lecture Workshop	Direct Mail
Private Boats	Fishing	1	1	3	N/A	4	3	1	2	?
	Diving	1	1	3	N/A	4	3	1	2	
	Non-Consumptive	1	1	3	N/A	4	3	1	2	
Charter Vessels (all types)	Operators	2	1	4	3	3	4	2	1	?
	Users/Passenger	1	4	2	3	4	3	1	2	
Commercial Fishing	Resident	1	2	3	4	3	5	2	4	1
	Transient	2	1	3	4	3	5	2	4	1
	Seasonal	2	1	3	4	3	5	2	4	1
Research	Agency Affiliate	2	1	N/A	3	5	4	1	3	2
	University Affiliate	2	1	N/A	3	5	4	1	3	2
	Private Group	2	1	N/A	3	5	4	1	3	2
Education	K - 12									
	Community College									
	University									
	Other									
Outreach Groups	YMCA									
	Boy/Girl Scouts									
	Junior Life Guard									
	Park Concessions									
	CG Auxiliary									
	Power Squadron									
	Dive Associations									
	Fishing Associations									
Military										
Average		1.5	1.4	3.0	3.4	3.9	3.9	1.4	2.7	1.5

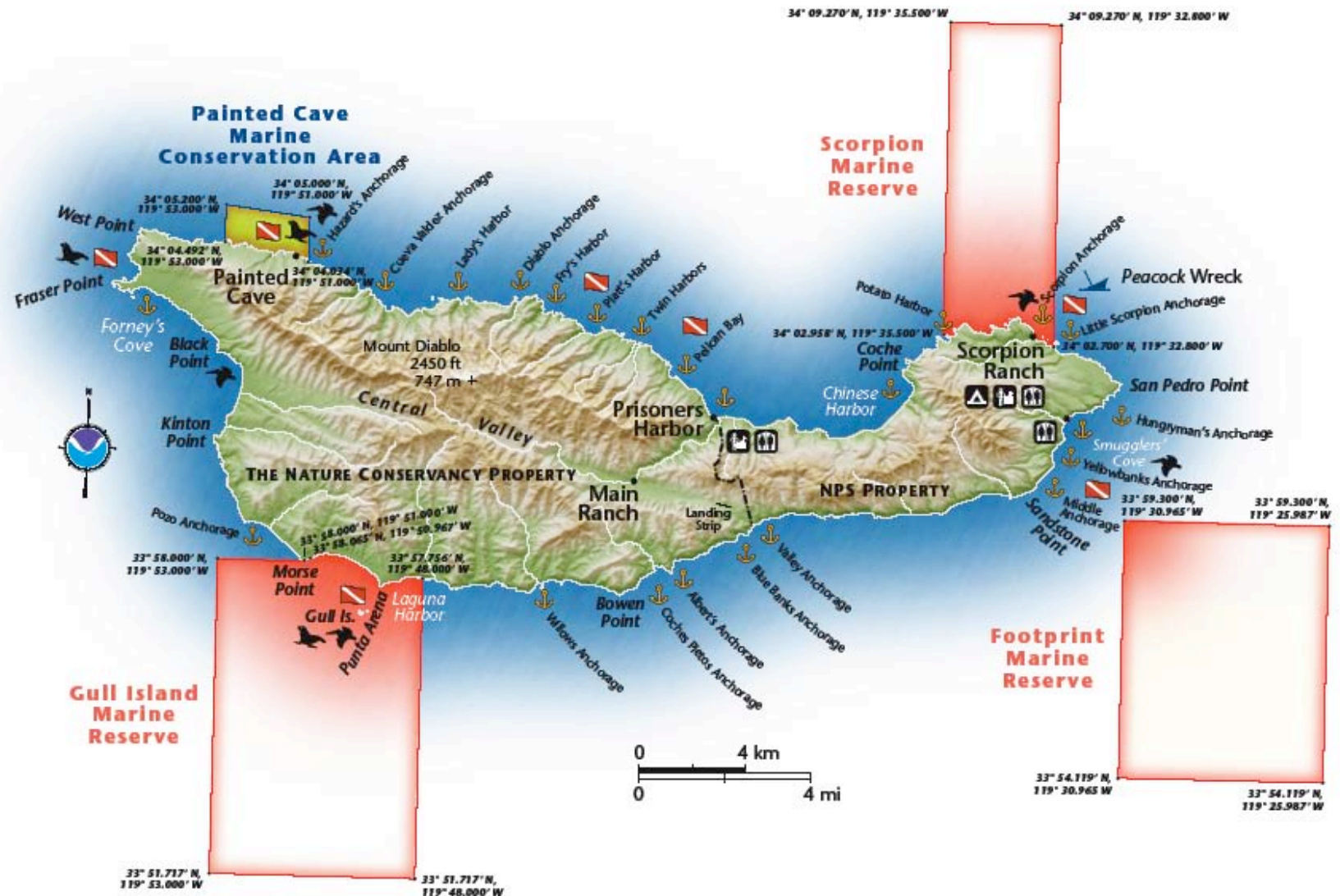


Channel Islands Map Graphics





Individual Island Graphics

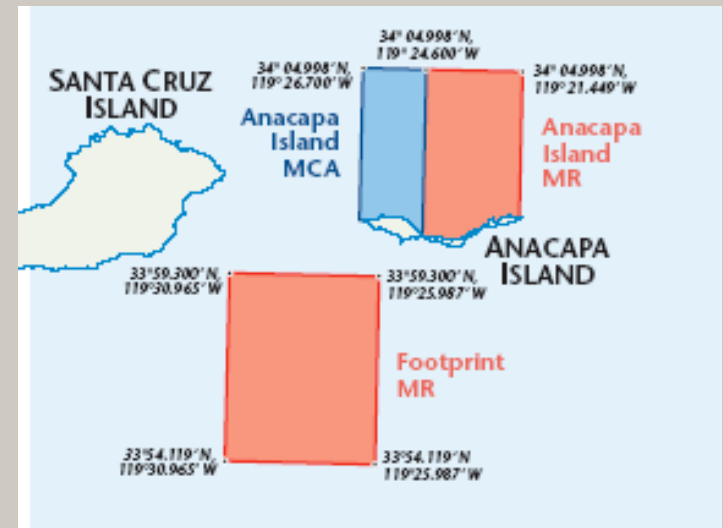




Inset Maps



- Inset maps created for each island to provide full view of each marine zone
- GPS coordinates are included for each marine zone





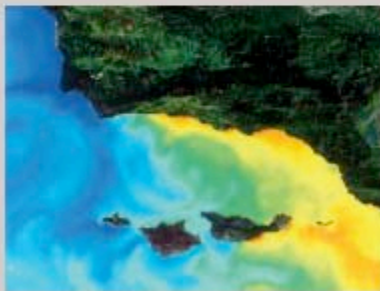
Protecting Your Channel Islands



WELCOME TO THE MAGNIFICENT AND DIVERSE CHANNEL ISLANDS NATIONAL MARINE SANCTUARY & NATIONAL PARK

Close to the California mainland, yet worlds apart, the Channel Islands National Marine Sanctuary and National Park encompass the ocean environment and five of the eight California Channel Islands (Anacapa, Santa Cruz, Santa Rosa, San Miguel, and Santa Barbara). The sanctuary and park bridge two biogeographical provinces, and in a remarkably small area, harbor thousands of species of plants and animals. One hundred and forty-five of these species are found nowhere else in the world. Cultural resources date back 13,000 years.

The islands' remote, isolated position at the confluence of two major ocean currents creates remarkable biodiversity. The mingling of cool, nutrient-rich waters from the north with warm currents from the south form a dynamic transition zone that is home to a myriad of sea life from microscopic plankton to blue whales.



This satellite picture shows the cool (blue) and warm (orange) surface temperature patterns that affect the northern Channel Islands.

Real-time Photo: Satellite Channel Islands © John D. Swartz
Image: 2011 Sea Surface Temperature patterns courtesy of Center for Coastal Studies, Scripps Institution of Oceanography. Satellite image courtesy of 2010 NOAA, Seattle, WA

GET INVOLVED

How You Can Have a Positive Effect on the Sanctuary and Park Environment

- Attend or host a local beach or creek cleanup.
- Plan or participate in an underwater cleanup.
- Participate in the Great Annual Fish Count.
- Educate yourself and others—
 - Enroll in a sanctuary adult education course
 - Attend lectures and films on the Channel Islands
 - Invite staff/experts to lecture at your club or school
 - Expose children to the wonder and beauty of the Islands
- Join the Channel Islands Naturalist Corps – learn how to educate the public while venturing to the sanctuary and park.
- Attend or join the Sanctuary Advisory Council and help provide advice to the sanctuary on how best to protect the sanctuary and your interests.
- Be observant – if you observe vandalism or damage to resources, injuries to marine life, or notice strange substances in the water, please notify the sanctuary or park.
- Get out there and boat, hike, and get wet!

Your efforts will help us all learn more about and protect the vital resources of the Channel Islands and Santa Barbara Channel. For more information on how to get involved, contact the Channel Islands National Marine Sanctuary or Channel Islands National Park offices listed in this brochure.



Channel Islands National Marine Sanctuary
113 Harbor Way, Ste. 150, Santa Barbara, CA 93109 (805) 966-7107
3600 So. Harbor Blvd., Ste. 111, Oxnard, CA 93035 (805) 382-6149
channelislands.noaa.gov

PROTECTING YOUR CHANNEL ISLANDS

EFFECTIVE JANUARY 2008





Protecting Your Channel Islands



San Miguel Island

San Miguel is the westernmost island and is located closest to Point Conception. This weather-beaten island supports an underwater haven in the form of granite covered with rainbow-colored sponges. The colder waters support a distinct group of fish and invertebrates that are not found on the southern islands. One of the most commonly found is the California Sheephead, which is an important commercial food fish for fish markets and fish processors. California sea lions, and harbor seals.

WESTERN BOBWHITE Scaevola taccada	BROWN BOBWHITE Scaevola taccada	RED BOBWHITE Scaevola taccada	BAY CHECKERBERRY Chamaecrista nana	ISLAND FLOWERS Lupinus	ISLAND PINE Pinus torreyana	ISLAND PALM Washingtonia filifera
ISLAND SHEEPHEAD Calyptopoma muriei	ISLAND SHEEPHEAD Calyptopoma muriei	ISLAND SHEEPHEAD Calyptopoma muriei	ISLAND SHEEPHEAD Calyptopoma muriei	ISLAND SHEEPHEAD Calyptopoma muriei	ISLAND SHEEPHEAD Calyptopoma muriei	ISLAND SHEEPHEAD Calyptopoma muriei

Santa Rosa Island

Santa Rosa is the second largest of the northern Channel Islands. The island is known for its rolling hills, coastal terraces, a historic lighthouse, and the island's rugged coastal landscape. The marine life associated with Santa Rosa Island is influenced by the cold California Current which is the San Miguel Island.

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Santa Cruz Island

The largest of the northern Channel Islands is the bioclimate zone for many currents from the south and colder surface currents. Offering a diverse assemblage of organisms in the Pointed Cove, one of the world's largest sea caves, it is found at the west end of Santa Cruz Island. All can come as close to landing.

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Anacapa Island

Anacapa Island is the westernmost island in the Anacapa Islands. It is a small, rugged island with a variety of marine life. The island is known for its rugged coastline, sea stacks, and tide pools. Marine life includes the California Sheephead, which is an important commercial food fish for fish markets and fish processors. California sea lions, and harbor seals.

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Santa Barbara Island

Santa Barbara Island is the largest island in the Santa Barbara Islands. It is a rugged island with a variety of marine life. The island is known for its rugged coastline, sea stacks, and tide pools. Marine life includes the California Sheephead, which is an important commercial food fish for fish markets and fish processors. California sea lions, and harbor seals.

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WORKING TOGETHER TO PROTECT THE CHANNEL ISLANDS

Examples of Inventory and Park Regulations

Inventory and Park Regulations are essential tools for protecting the Channel Islands. They help identify and manage resources, and ensure that visitors can enjoy the islands without causing harm to the environment.

- **Inventory:** Identifying and cataloging resources, including flora, fauna, and geological features.
- **Regulations:** Establishing rules for visitor behavior, such as staying on trails, not touching rocks, and not taking items from the island.
- **Education:** Providing information to visitors about the importance of the islands and how they can help protect them.
- **Monitoring:** Regularly checking resources to ensure they are being protected and to identify any threats.

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Targeted Audience Brochures



- Targets Boaters
- Mailed to all registered boaters in Ventura County (~25,000).
- Additional 3300 copies distributed to boaters in Santa Barbara Harbor
- Distributed at boat shows and by Park



VENTURA POWER SQUADRON OF
UNITED STATES POWER SQUADRONS,
SAIL AND POWER BOATING
www.ventura-usps.org
(888) 367-8777



NATIONAL MARINE
SANCTUARIES

CHANNEL ISLANDS
www.channelislands.noaa.gov

SANTA BARBARA HARBOR OFFICE
113 Harbor Way, Suite 150
Santa Barbara, CA 93109
(805) 966-7107

CHANNEL ISLANDS HARBOR OFFICE
3600 South Harbor Blvd., Suite 217
Oxnard, CA 93035
(805) 382-6149



COUNTY OF VENTURA
HARBOR DEPARTMENT
3900 Pelican Way
Oxnard, CA 93035
(805) 382-3001
www.countyofventura.org



CHANNEL ISLANDS NATIONAL PARK
ROBERT J. LAOUMARSINO
VISITOR CENTER
1901 Spinnaker Drive
Ventura, CA 93001
(805) 658-5730
www.nps.gov/chis

BOATING & SAFETY

The purpose of this brochure is to provide a quick reference guide for safe and enjoyable boating. It includes weather tips, safety reminders, and resource information. While there is a good deal of important information offered here, there is no substitute for common sense, local knowledge, and good seamanship practices.



It is recommended that boaters wear life jackets at all times while underway.

Additional critical information about anchoring, cold water survival, and first aid for hypothermia can be found in the following free publications. These should be available for reference on your vessel.

- *ABC's of California Boating Law*
- *Federal Requirements and Safety Tips for Recreational Boaters*

These publications are available at most marine supply stores and online at www.dbw.ca.gov and www.uscgboating.org. See inside for additional helpful materials.

Santa Barbara Channel Weather

Before going boating, become aware of the dynamic weather patterns in the Santa Barbara Channel. There are many sources available to obtain this information. These sources include: newspapers, radio, TV, websites, information kiosks, the VHF/FM marine radio, and the Oxnard National Weather Service office.

www.mwsla.noaa.gov
NWS Public Information:
(805) 988-6610
Marine Weather Radio CH 3
for marine weather only

www.channelislands.noaa.gov
Weather Kiosks located at Santa Barbara and Channel Island Harbors



Always be aware that the weather in the Channel Islands is in a continuous state of change. Fog and winds are a challenge to the most experienced boaters. All year expect fog if visibility is decreasing or there is a sudden drop in temperature when the winds are light and the sky is clear.

From November through April, expect high winds with clear skies and good visibility when the wind is warm and out of the northeast. Also, when the wind shifts to the northwest, expect high winds. Generally, the sky will initially be cloudy with restricted visibility; look for a cold northwest wind to rise with clearing skies and good visibility.

The prevailing sea breeze wind blows from the west to northwest throughout the year. It typically blows between 11 A.M. and 8 P.M. The average speed is 10 to 20 mph.



Channel Islands MPA Signs



- Boat launch ramps at Channel Islands Departure Points
- Major Channel Island Landing Coves
- Channel Island Park Concessionaires

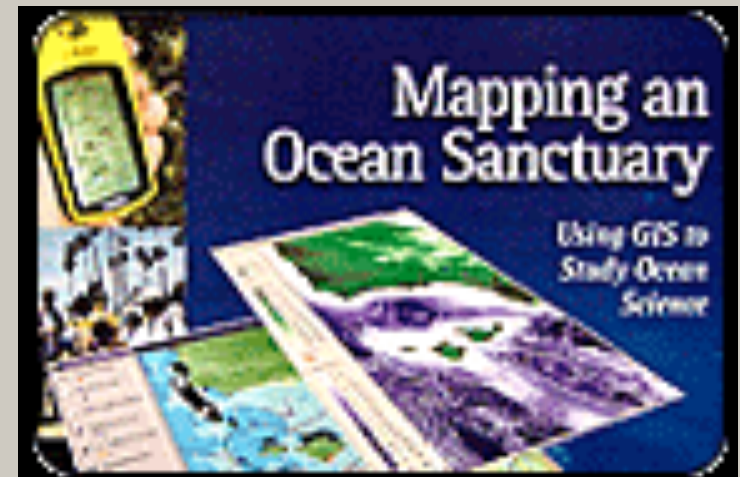
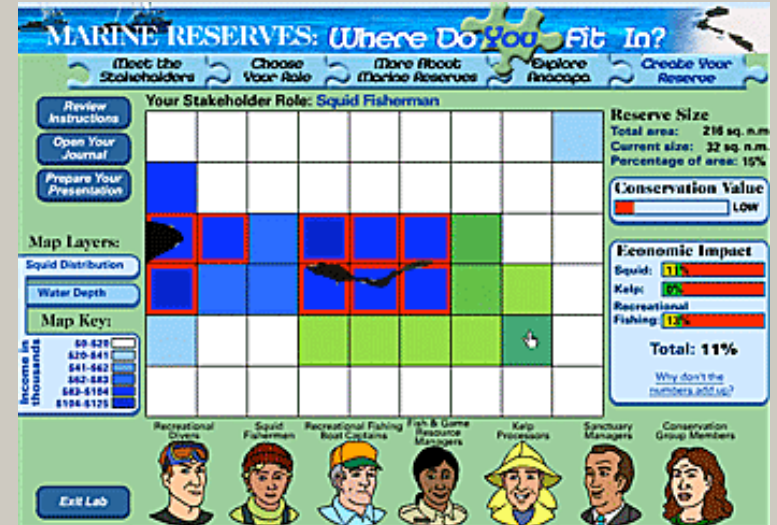




Science of Marine Reserves



- *Wild for the Future* Educational Poster
- *Mapping An Ocean Sanctuary* GIS Curriculum
- *JASON XIV From Shore To Sea* Curriculum and Marine Reserves Digital lab:
 - *Where Do You Fit In?*
- *Channel Islands Live!* Underwater Broadcast





Citizen Monitoring and Awareness



- **Reef Environmental Education Foundation (REEF) Fish and Invertebrate Surveys**
 - Volunteer divers annually conduct fish surveys inside and outside the MPAs.
 - Since 2006, over 1,444 surveys conducted. Invertebrate surveys now included.
 - CINMS provides vessel support and NOAA divers





Costs



Costs To Date:
\$708,800

Costs to Re-tool:
\$ 69,000

Channel Islands Marine Reserves
Wild for the Future!

WELCOME TO THE MAGNIFICENT AND DIVERSE CHANNEL ISLANDS NATIONAL MARINE SANCTUARY & NATIONAL PARK

GET INVOLVED
How You Can Have a Positive Effect on the Sanctuary and Park Environment

- Attend or host a local beach or creek cleanup.
- Plan or participate in an underwater cleanup.
- Participate in the Great Annual Fish Count.
- Donate personal gear and items.
 - Don't let a sanctuary visit without a camera.
 - Don't let a sanctuary visit without a pair of binoculars.
 - Donate clothes to the weather and beauty of the Islands.
- Join the Channel Islands National Coast - learn how to protect the people understanding of the sanctuary and park.
 - Meet leaders and live on the Channel Islands.
 - Be a part of the Channel Islands National Park and help provide advice to the sanctuary on the best to protect the sanctuary and our islands.
- Be observed - if you observe violations or damage to resources, please call the office or report through the hotline in the water, please notify the sanctuary if you can.
- Get out there and look, fish, and get lost!
 - Your efforts will help us all learn more about and protect the vast resources of the Channel Islands and Santa Barbara Channel. For more information on how to get involved, contact the Channel Islands National Marine Sanctuary or Channel Islands National Park offices listed in this brochure.

Channel Islands National Marine Sanctuary
11100 Santa Barbara Blvd., Suite 100, Santa Barbara, CA 93103-1000
Phone: 805.964.6100 Fax: 805.964.6101
www.channelislands.gov

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Channel Islands Marine Protected Areas

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NATIONAL PARK SYSTEM
1000 East Washington Ave., Sacramento, CA 95833
Phone: 916.344.7000 Fax: 916.344.7001
www.nps.gov



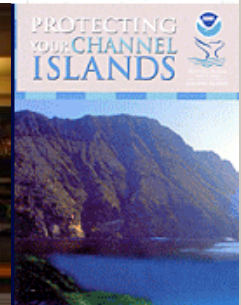
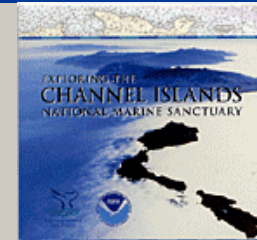
Methods to Deliver Information



- Most printed materials are downloadable from the CINMS web site, along with the digital lab.

<http://channelislands.noaa.gov>

- distribute brochures at public forums, teacher workshops and public events.
- Adopt A Business Program



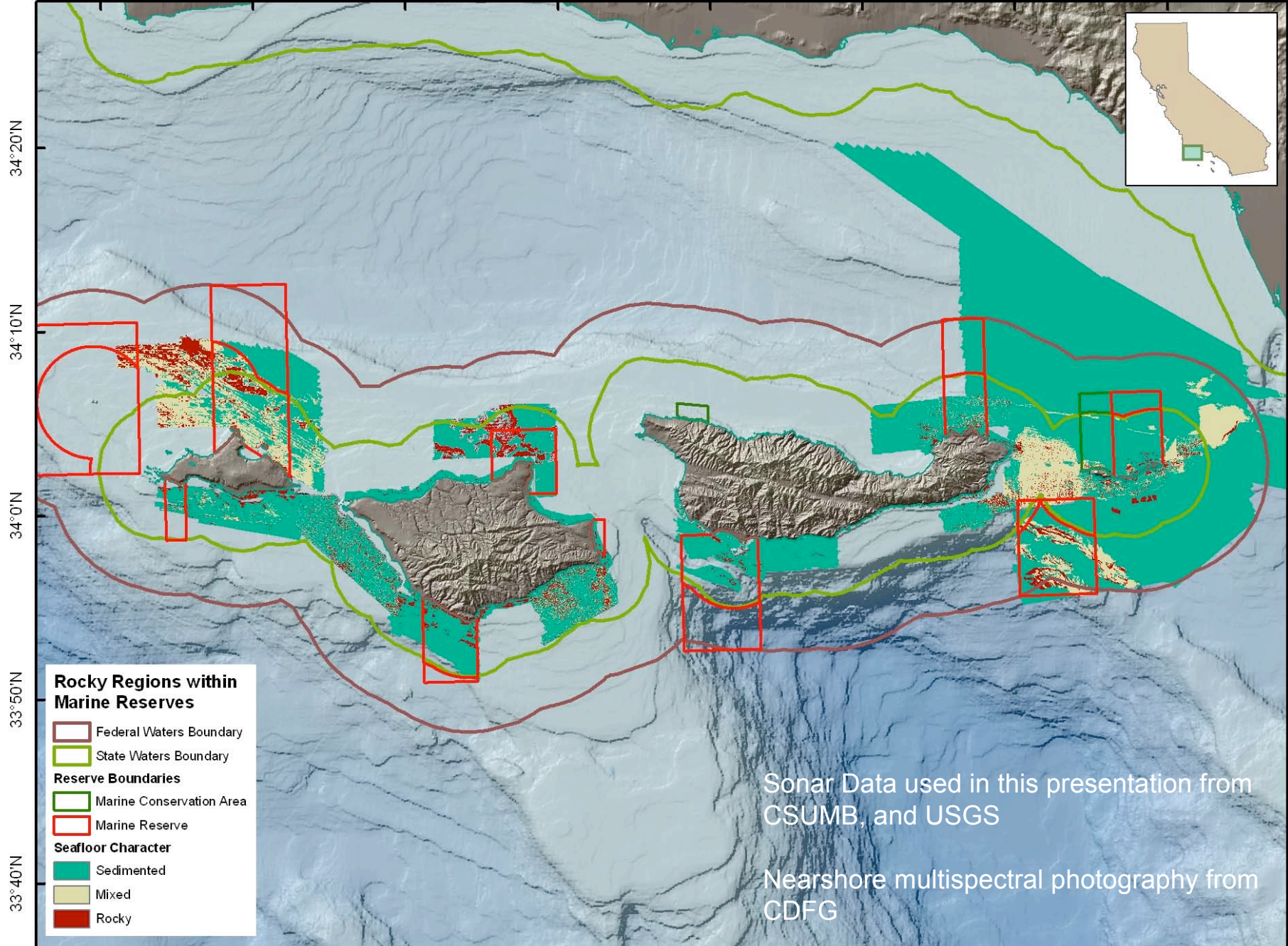


Summary



- Public Input Important
- Conduct a Needs Assessment and Prioritize Audiences
- Long-term Investment
- Develop Multi-pronged Distribution Approaches

120°30'W 120°20'W 120°10'W 120°0'W 119°50'W 119°40'W 119°30'W 119°20'W



Rocky Regions within Marine Reserves

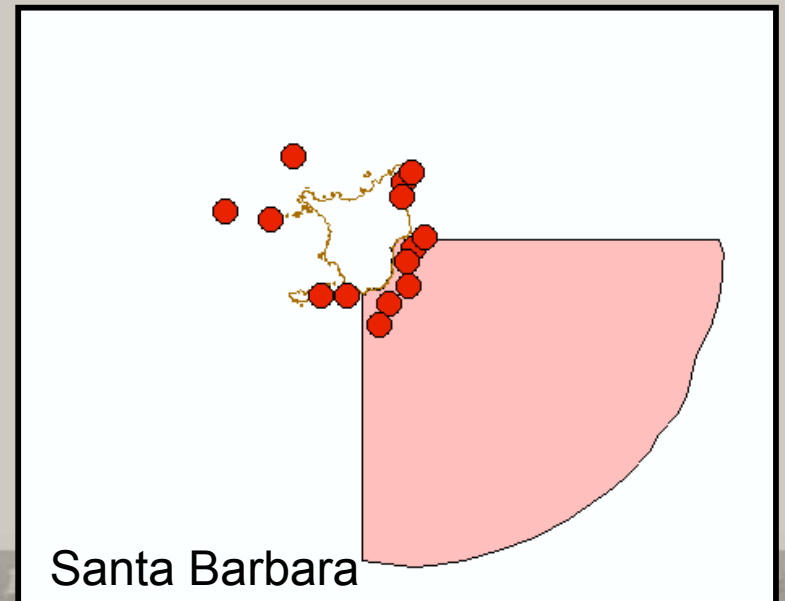
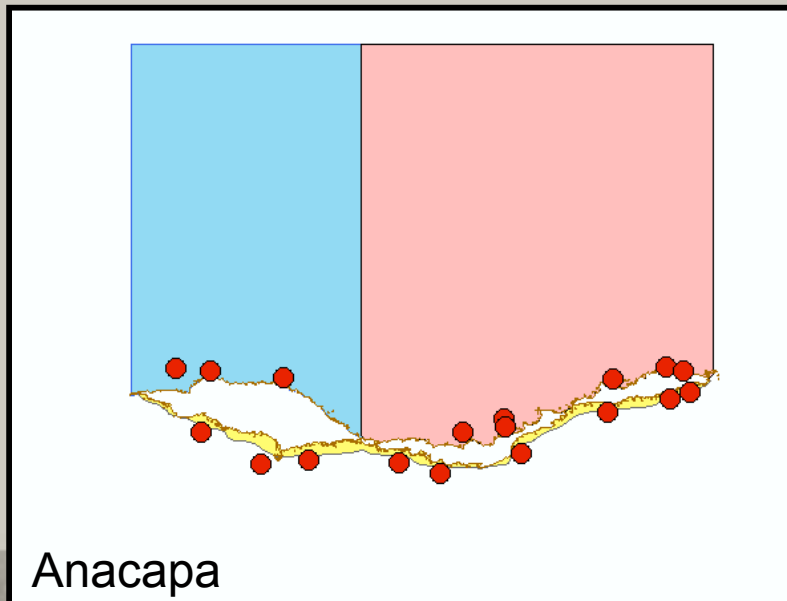
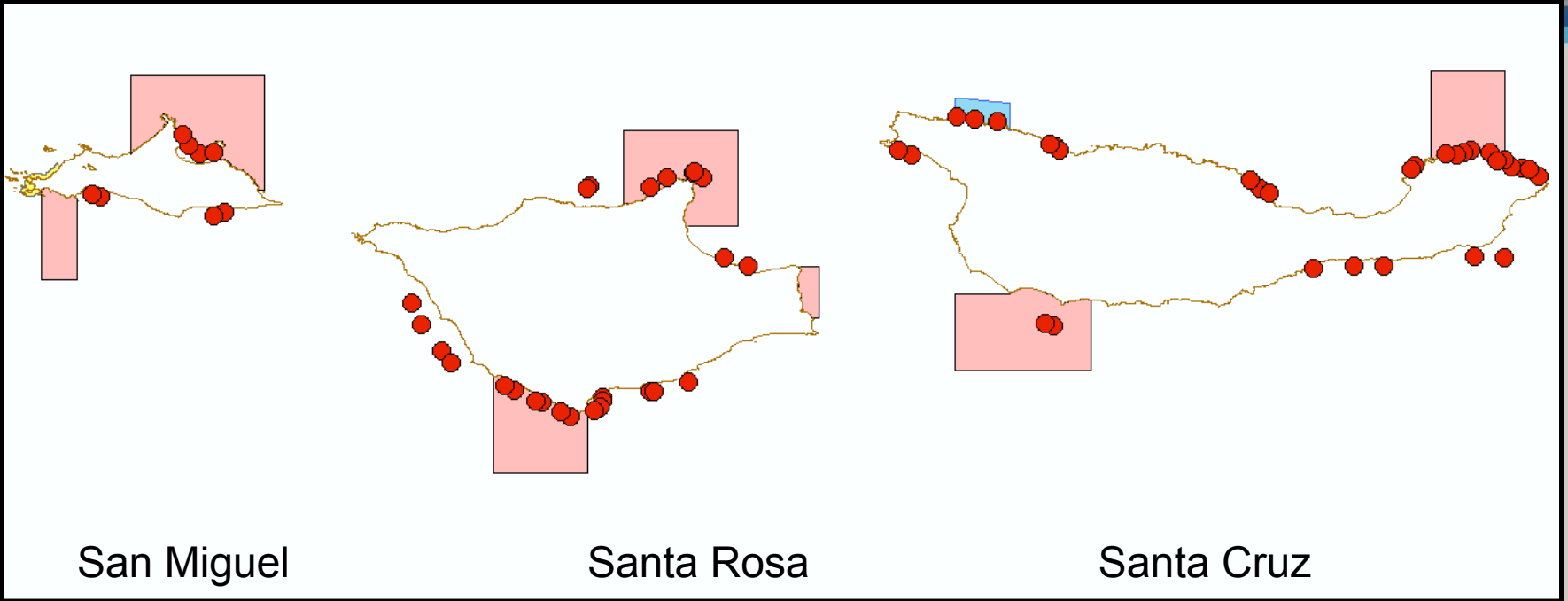
- Federal Waters Boundary
- State Waters Boundary
- Reserve Boundaries**
 - Marine Conservation Area
 - Marine Reserve
- Seafloor Character**
 - Sedimented
 - Mixed
 - Rocky

Sonar Data used in this presentation from CSUMB, and USGS

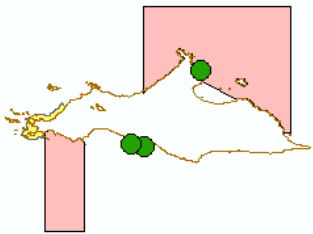
Nearshore multispectral photography from CDFG



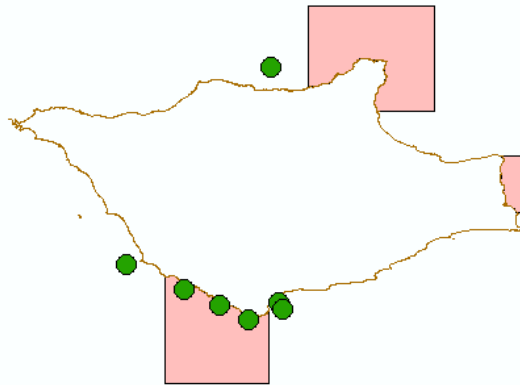
PISCO Sites



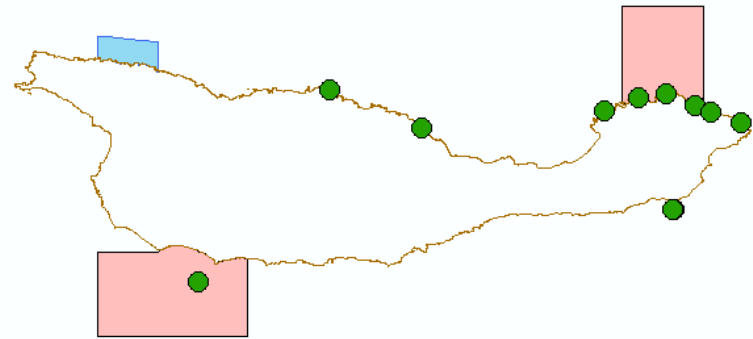
KFM Sites



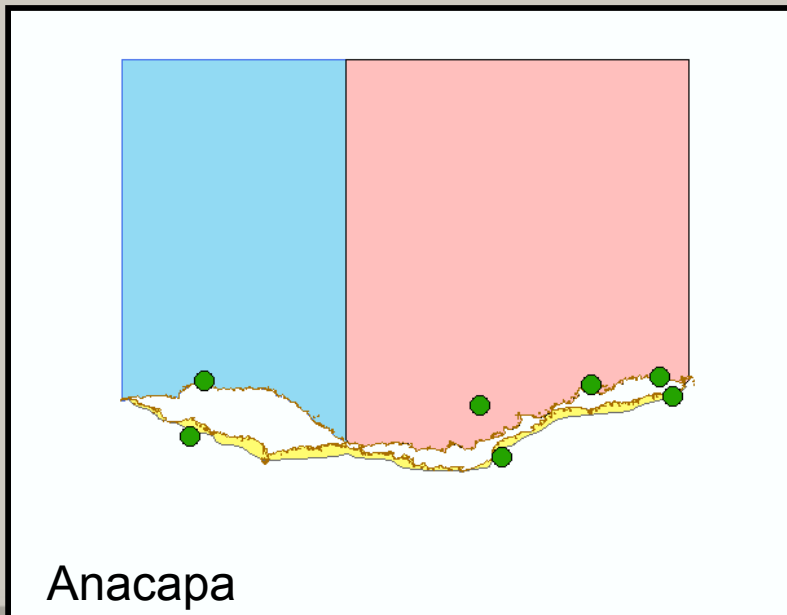
San Miguel



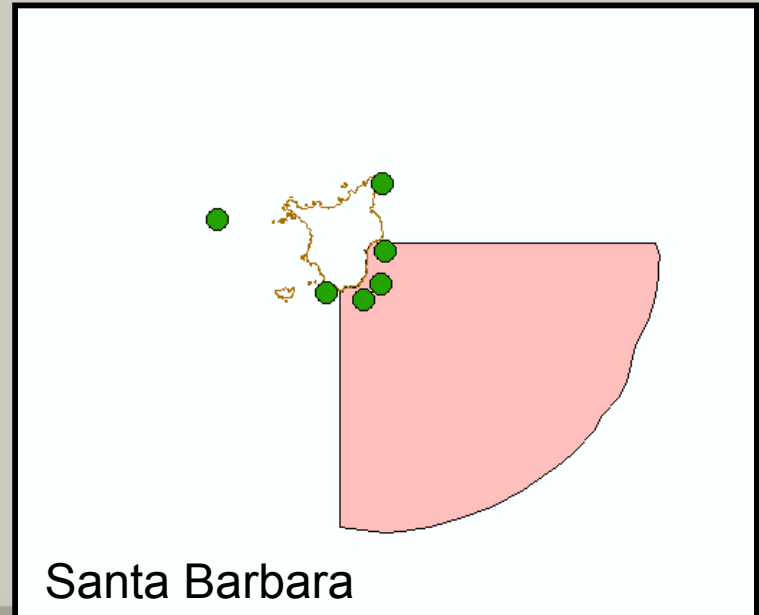
Santa Rosa



Santa Cruz



Anacapa



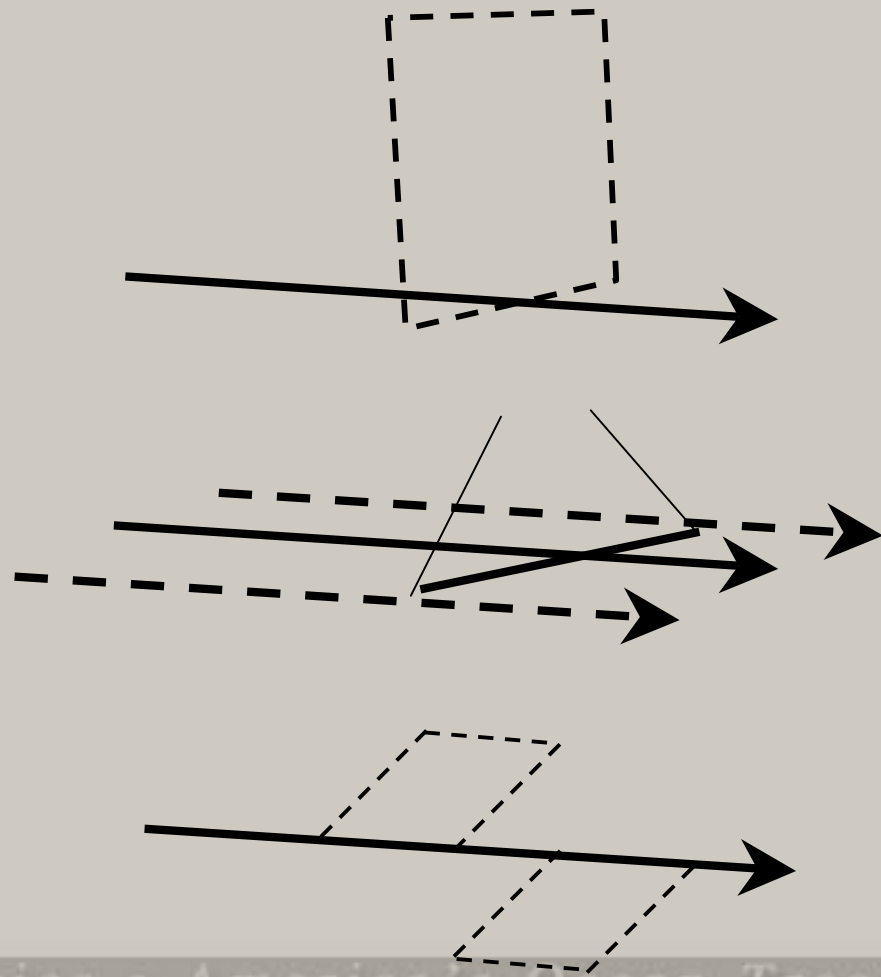
Santa Barbara



SCUBA surveys

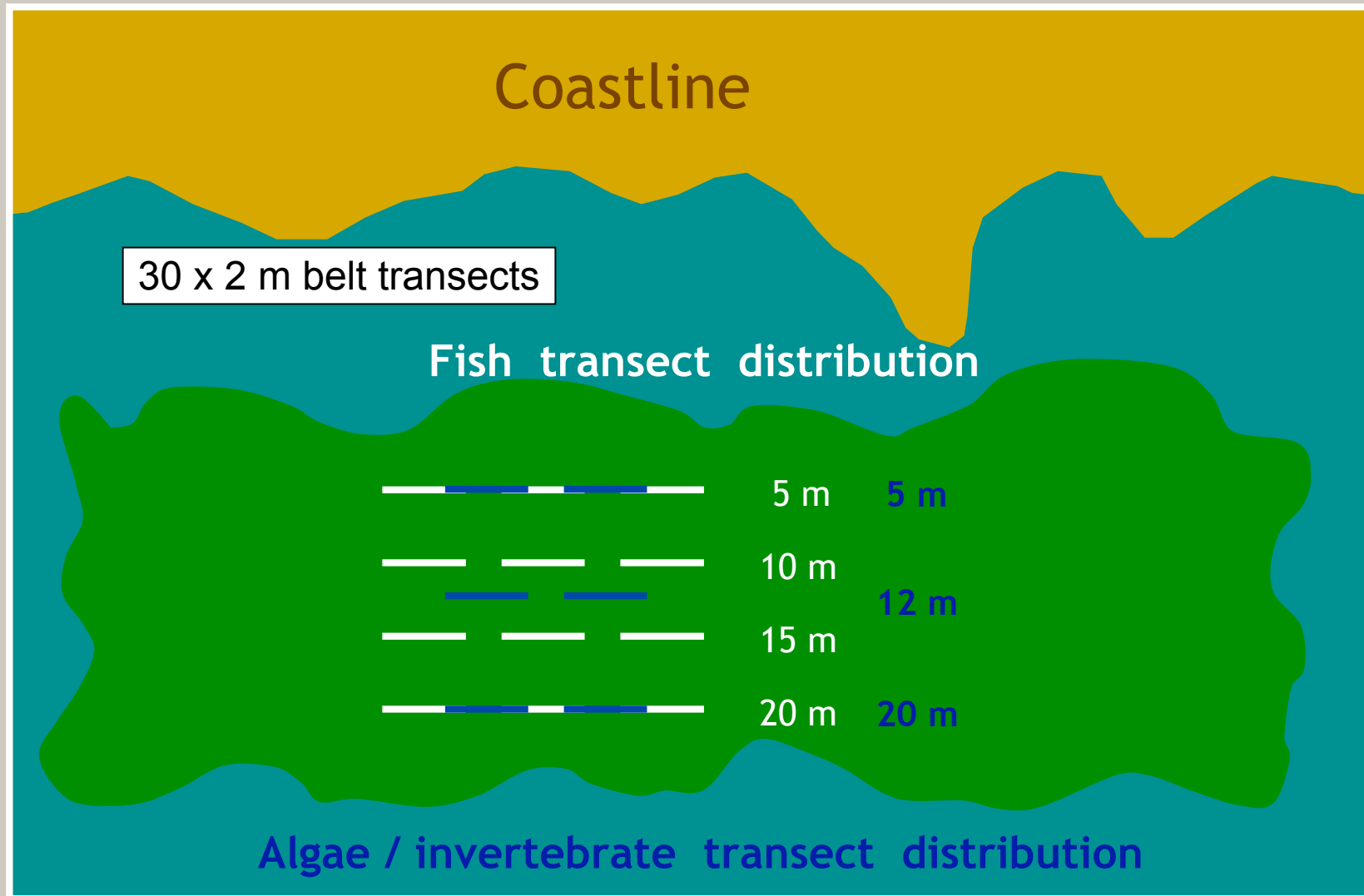


Fish: density and sizes
Kelps and mobile inverts: density
Algae and inverts: % cover



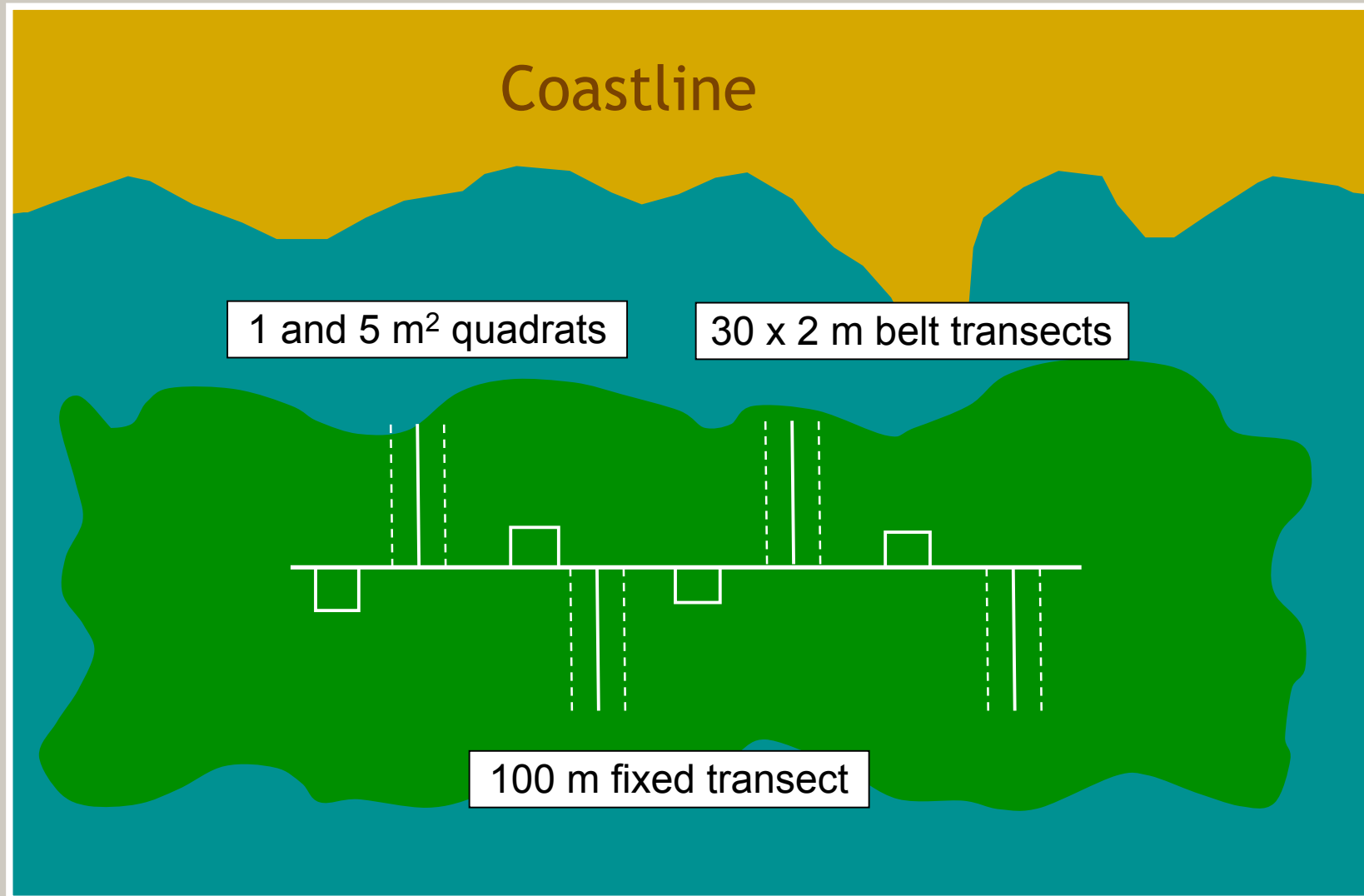


PISCO sampling design



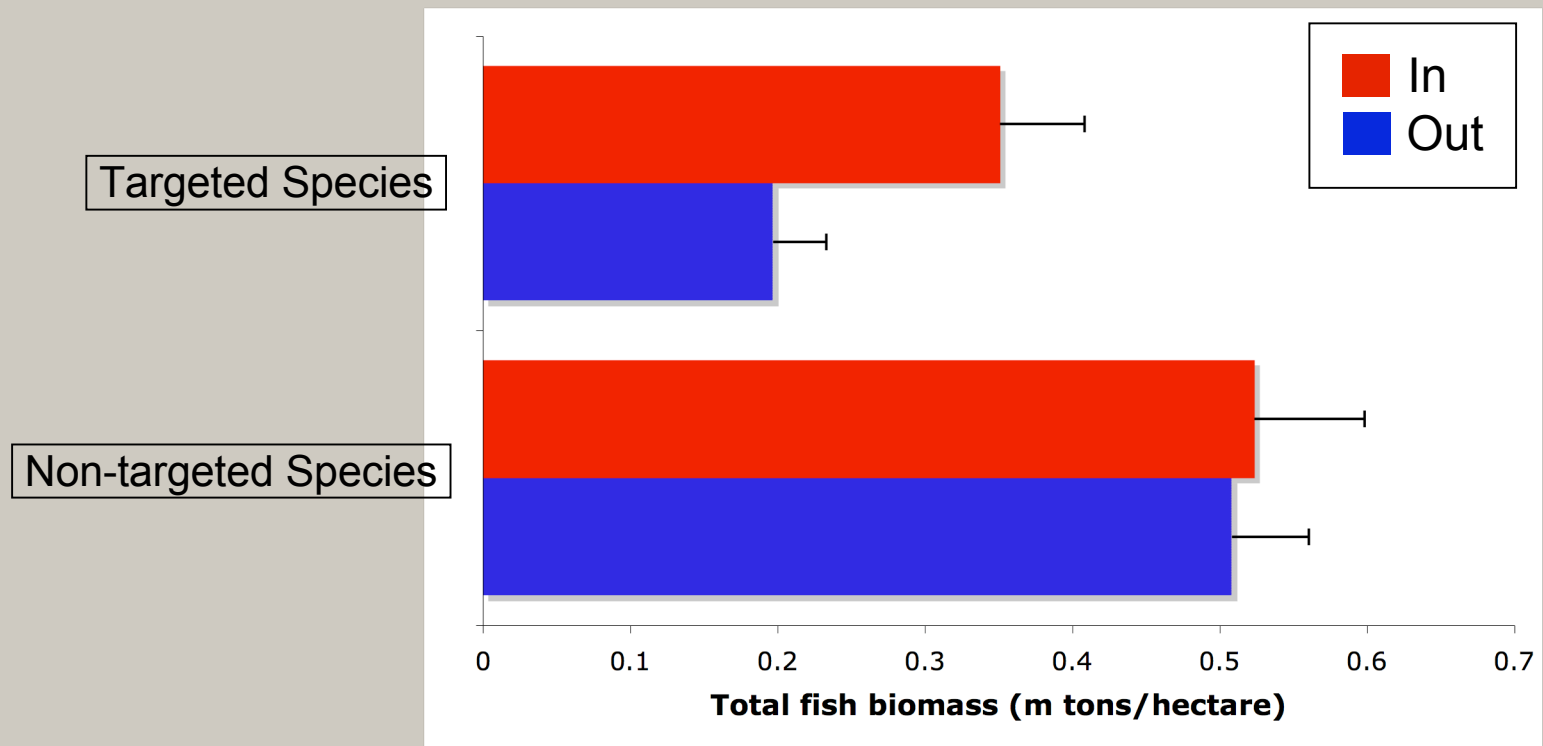


NPS Kelp Forest Monitoring





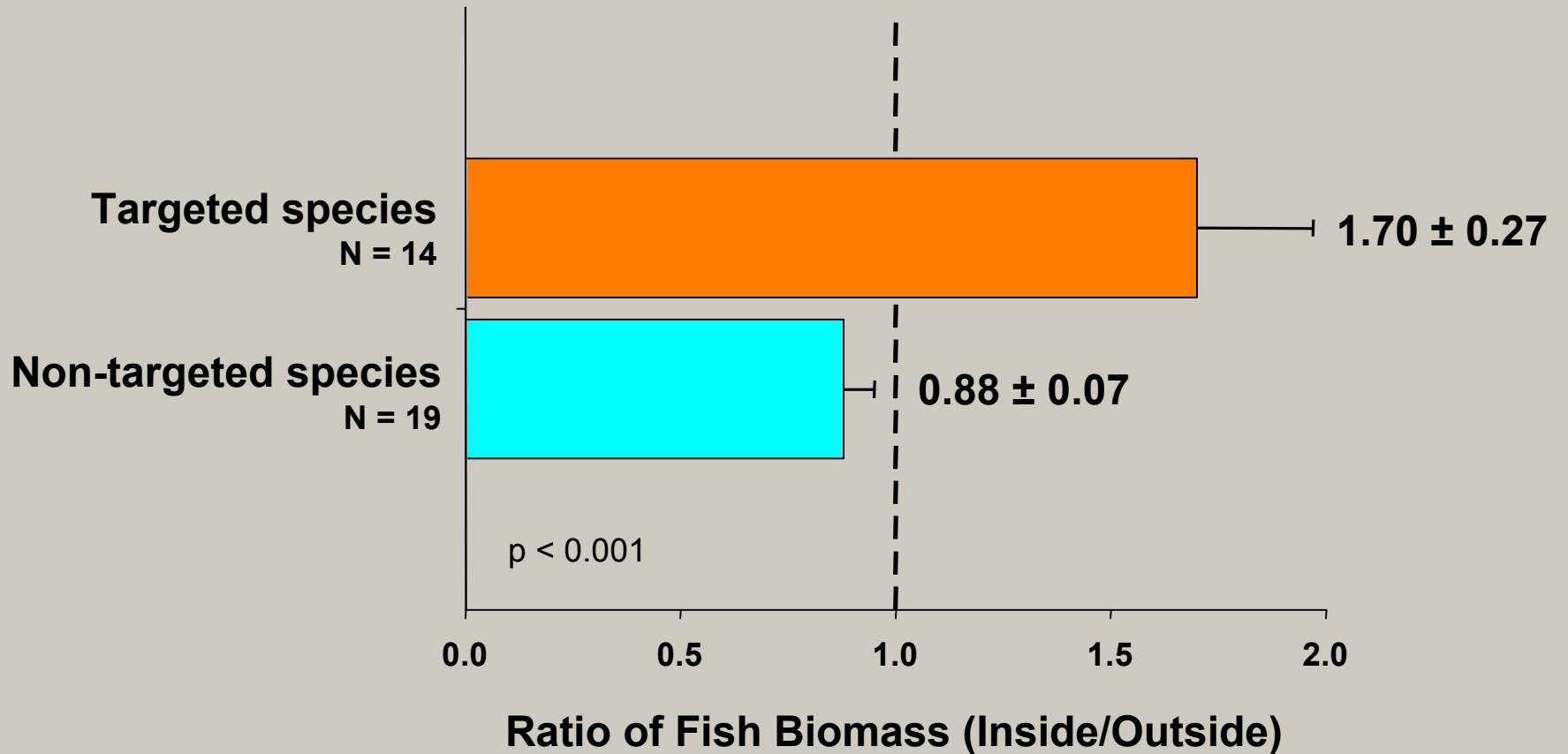
Total biomass of targeted fish species is greater in reserves



Data and analysis: PISCO

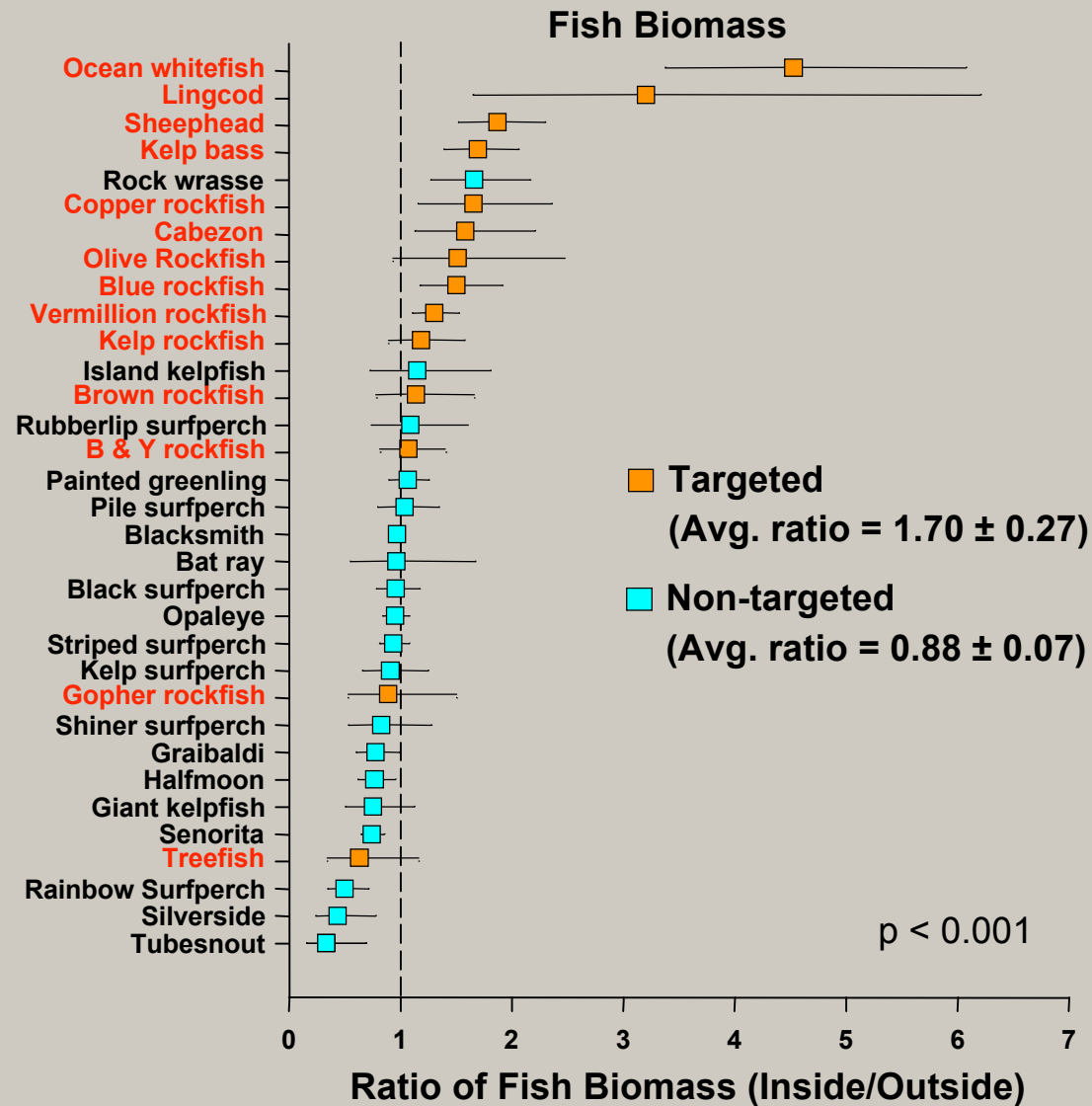


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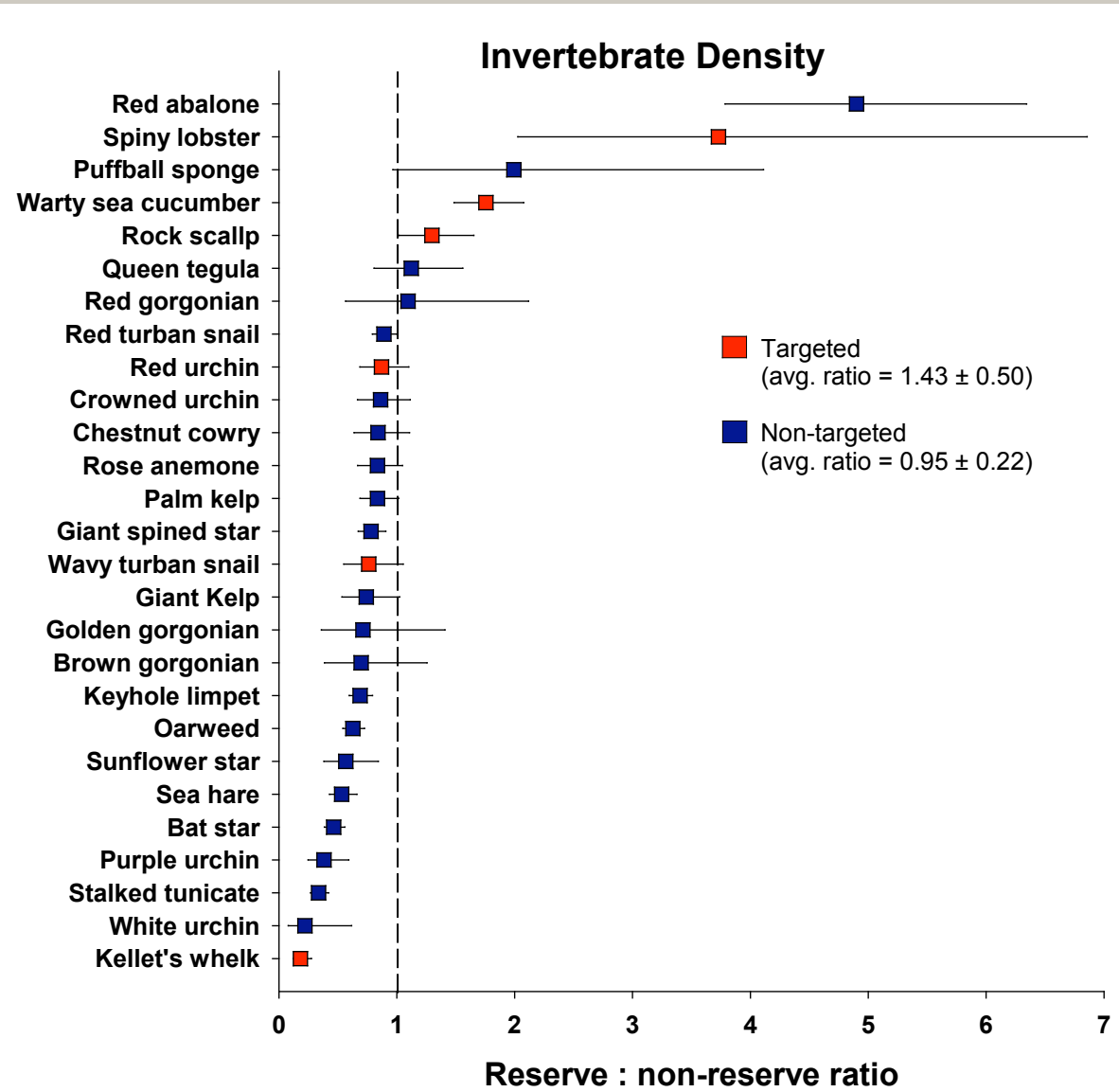
SCUBA Surveys (2005-2007)

Data and analysis: PISCO



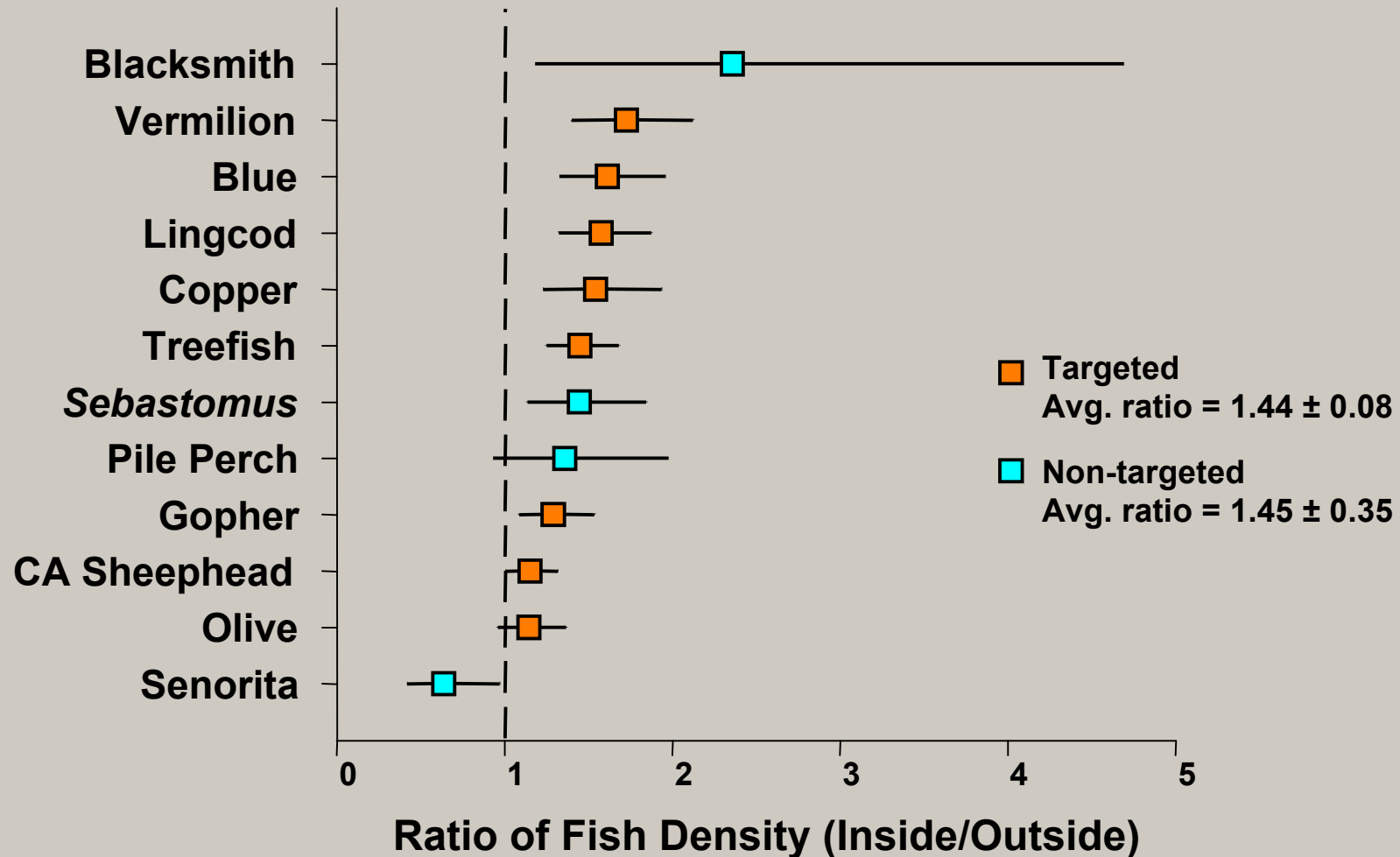


Densities of algae and invertebrates show similar patterns





Fish Density from ROV Surveys in Deep Water



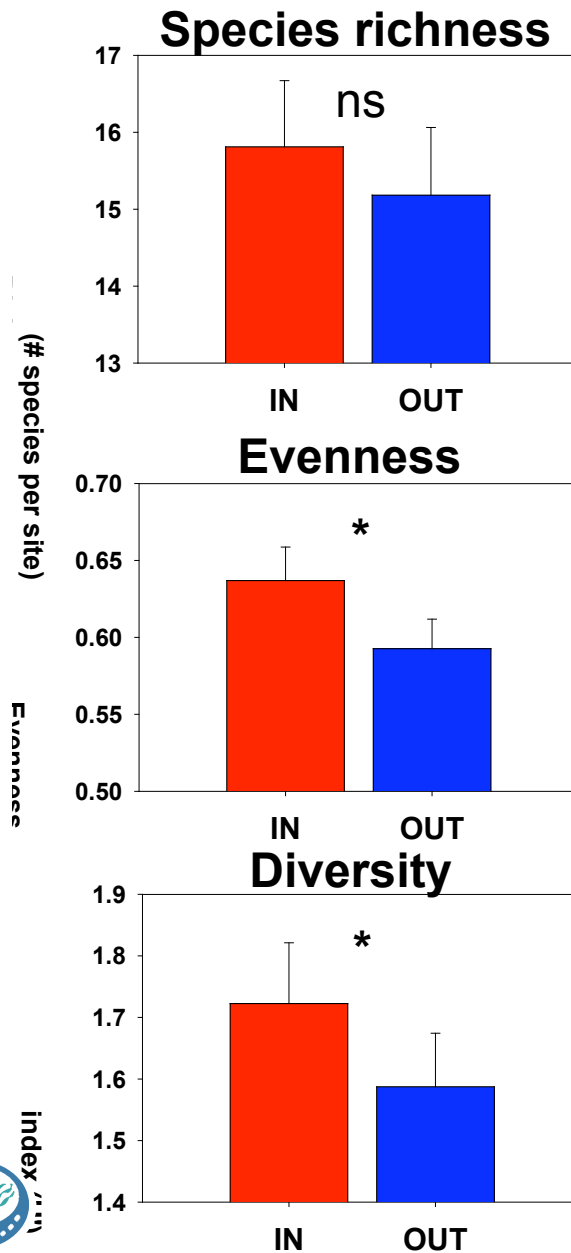
ROV Surveys (2005-2007)





Fish biodiversity differs in reserves

San Miguel and Santa Barbara Islands are important drivers of these patterns



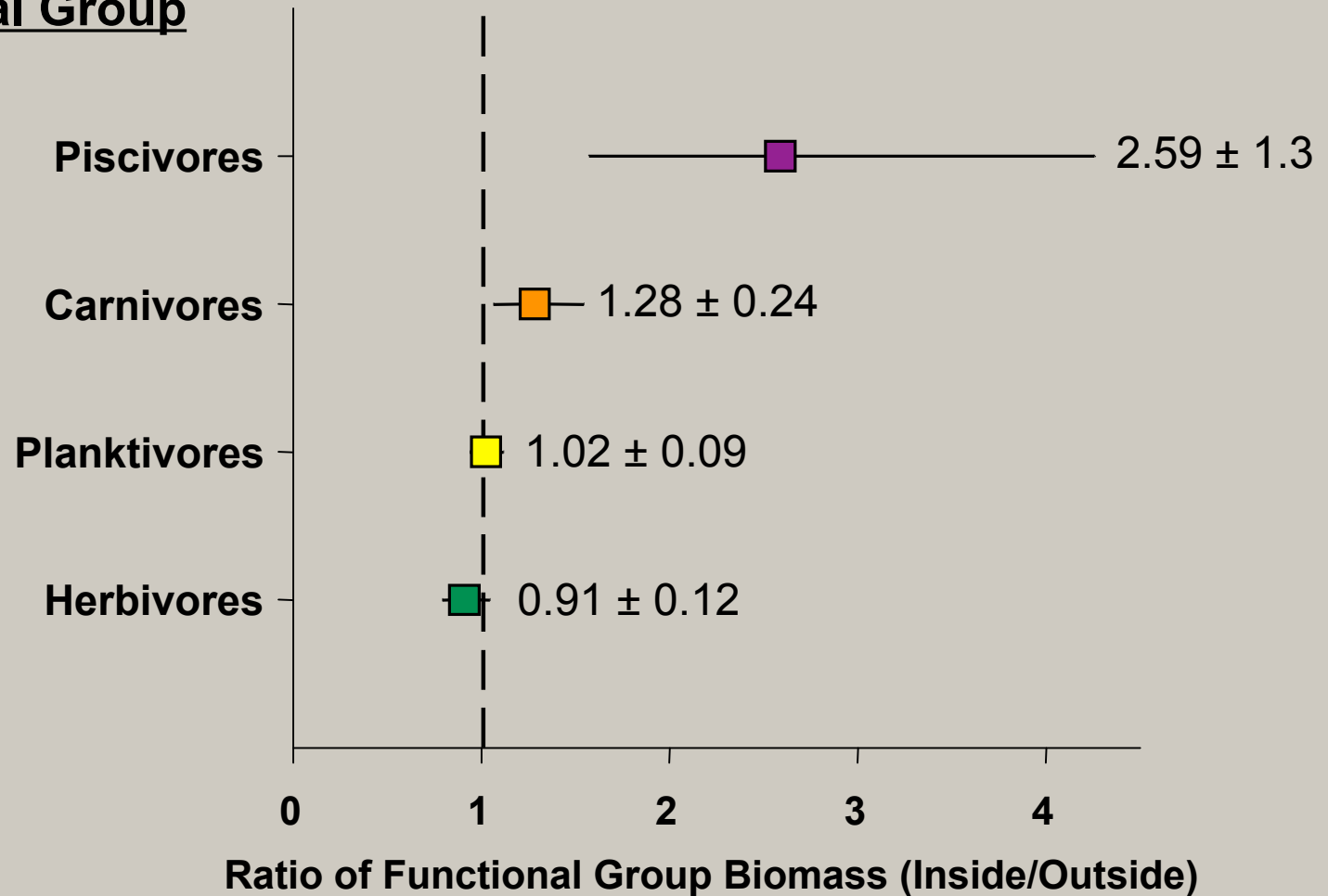
Data and analysis: PISCO



Piscivores and carnivores show the strongest response to reserve protection

Functional Group

Biomass



Data and analysis: PISCO