

Claiming, Defending, and Sharing Places in the Sea: Experiences from Pacific Mexico

For the Hakai Workshop, Visioning the
Future of Kelp Forest, Sea Otter &
Human Interactions. June 16-20, 2014
Bonnie McCay, Rutgers Univ.



in ecosystems

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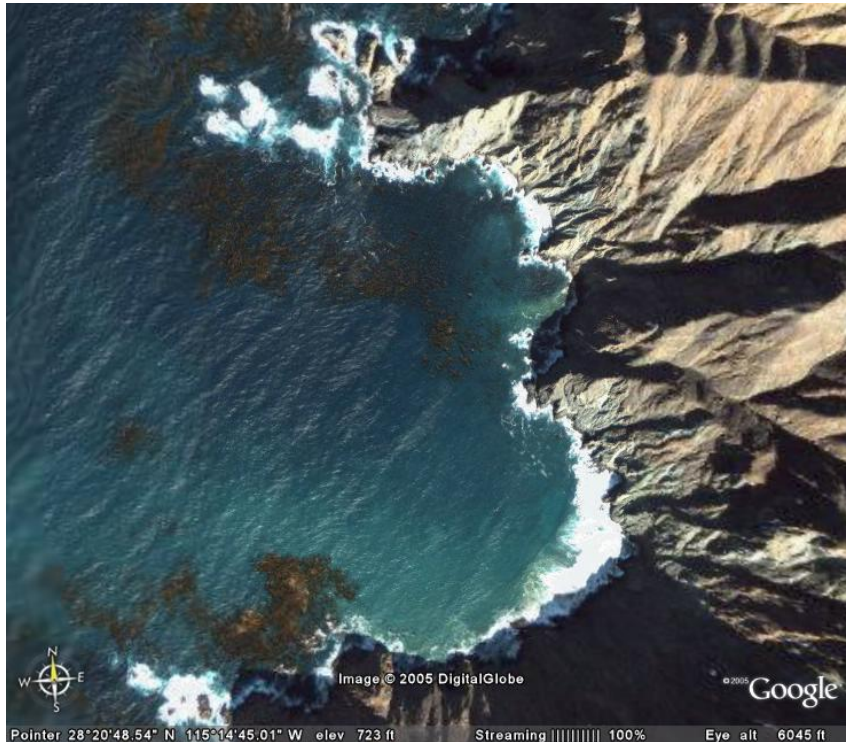
Design principles for commons management

- Smallness (numbers, spatial scale)
- Accountable leadership
- Fairness and transparency
- Ability to learn from, monitor, and interpret the natural environment
- High levels of ‘vigilance’
- “federated”—autonomy but linked and supported
- Window of opportunity for policy change (failure, emergencies)
- effective incorporation of scientific and technical knowledge
- Strong but flexible institutions, capable of corrective actions in response to change.

The Places

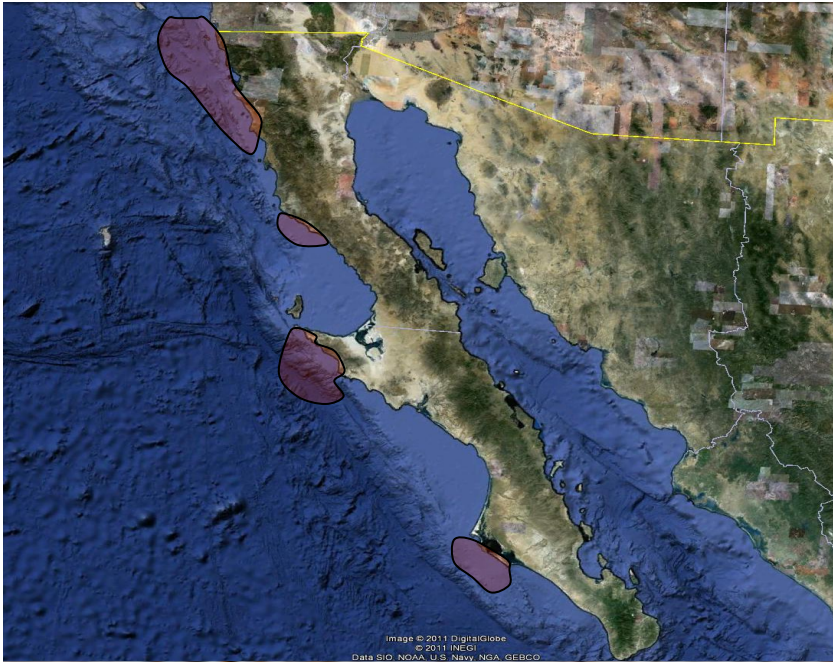
- Pacific coast of Baja California
- Very arid desert; sparse population
- Cold water upwelling, rocky coastal waters
- Small fishing villages & camps
- Poor infrastructure (roads, electricity, water)
- Rich marine environment: seaweeds, fishes, shellfish, mammals

California Current: Rocky Coasts, Kelp Forests, Cold-Water/ Upwelling



Isla de Cedros (Google Earth); Isla Natividad from Pta. Eugenia (B. McCay 3/05)

Productive and diverse ecosystems



Baia California



Vizcaino Peninsula



Vizcaino Biosphere Reserve



Caracols and Red Spiny Lobster

(B. Asuncion 3/05 Shester)



Caracoles and Cystoceira; Gorgonian Coral; Garibaldi; Octopus (B.Asuncion, 3/05 Shester)

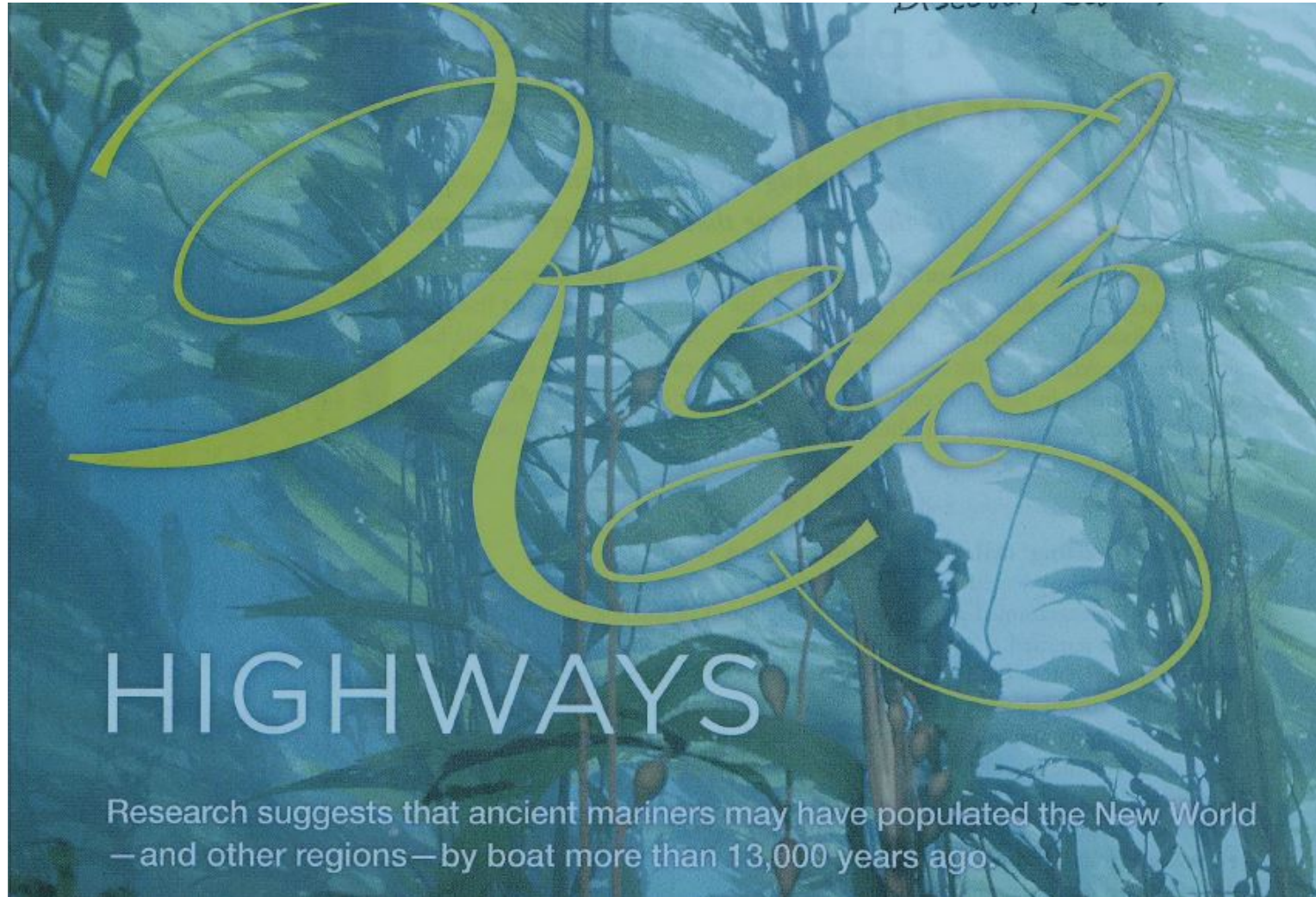


Marine Mammals



Sea Lions, Is. Asuncion; Gray Whales, Laguna San Ignacio,
3/05 (G. Shester)

Part of the “Kelp Highway”



Punta Prieta Site, I. de Cedros est. 10,000 B.P.



Pismo Clams and Chiton, Punta Prieta Site

10,000 years of exploitation; 1700s European missionaries, disease, resettlement, abandonment; 20th century rediscovery for whaling, fisheries.



Vizcaino timeline

- 10,000 B.P. + settlement on the kelp highway
- 1750s European encounter, depopulation (disease & resettlement)
- Early 1900s American & Japanese fisheries; small settlements
- 1930s Law of Cooperatives; concessions
- 1970s, Mexican coop members took control over fisheries;
- Early 1980s El Niño; govt. negotiation to keep abalone fishery open > co-mgmt & federation
- Early 2000s MSC process
 - MSC 2005; renewed 2011
 - Concessions renewed
 - Experimental marine reserves

Isla de Cedros (West Coast)



Cedros pueblo



Cedros Pueblo 3



ria del Carmen



Pesc. Nac. De Abulón, 3/20/06



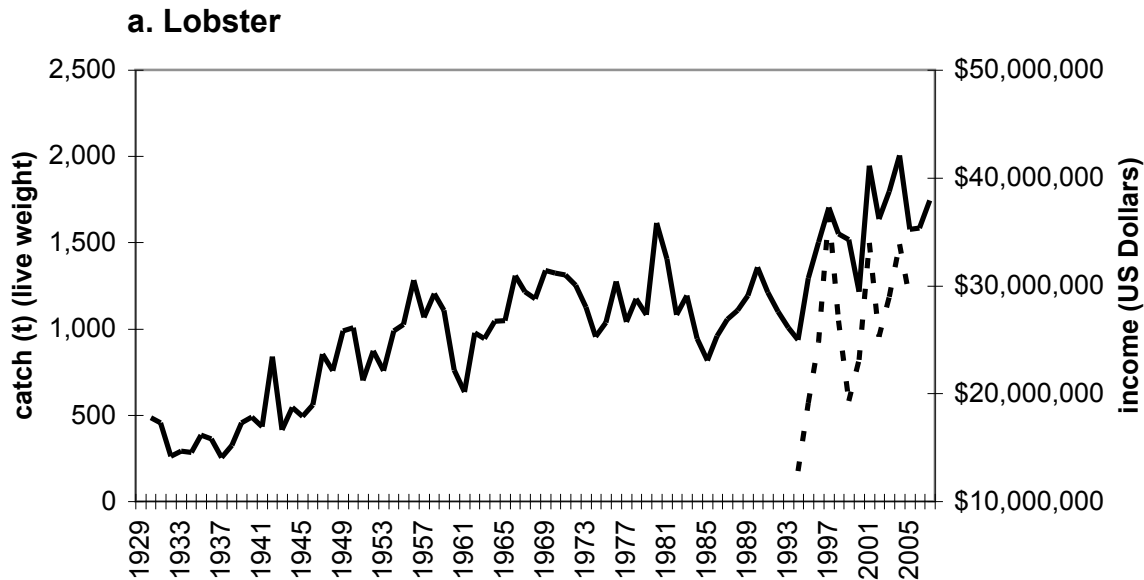
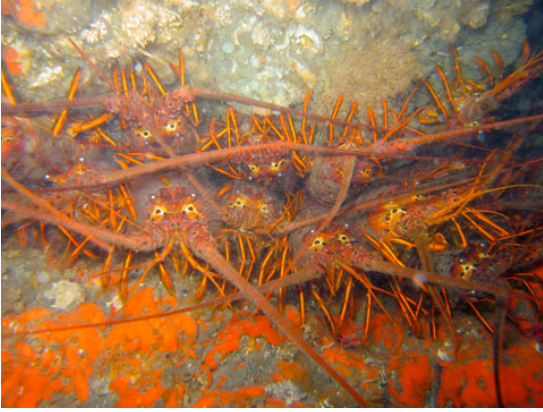
Adrian, Antonio, Arnulfo



Abalone (*Haliotis fulgens* and *H. corrugata*)



Spiny lobster (*Panulirus interruptus*)



Marine Stewardship Council

- Certified 2005
- First Latin-American
- First “artisanal”
- First “community-based”
- *Not* first lobster; West. Australian spiny lobster



Claiming places

- Mexican constitution: “freedom to fish” –all citizens
- Mexican law: privileges of fishing cooperatives
 - Exclusive concessions for shrimp, lobster, abalone (export value)...

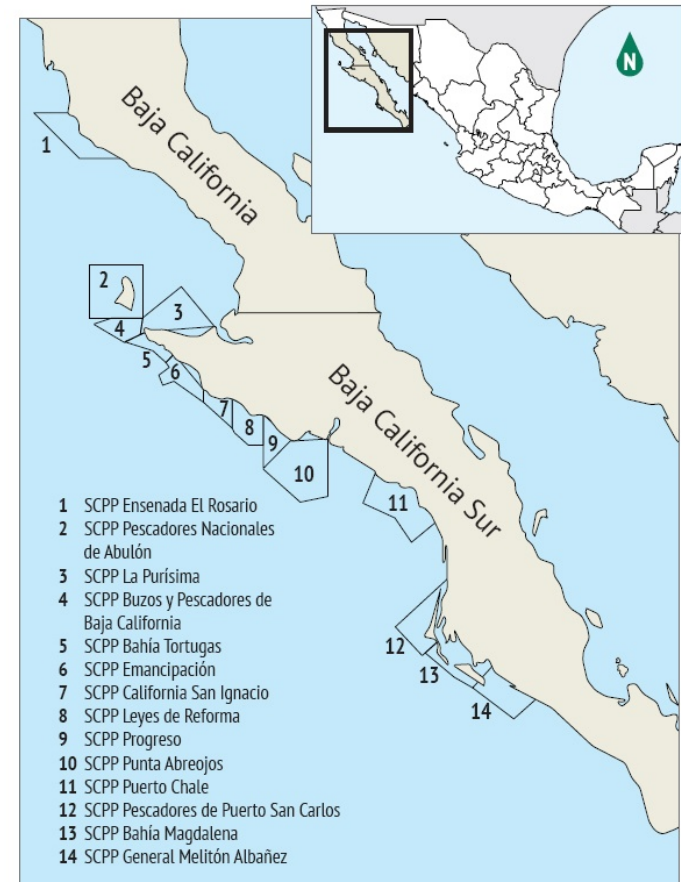


Figure 2. Main abalone concessions in Baja California

Zona Pacífico Norte, Áreas Concesionadas a cada Cooperativa



Investment in Monitoring and Enforcement

[Pta. Eugenia]



Measuring Lobsters, Coop. Leyes de la Reforma, B. Asunción.

Photo: W. Weisman



Co-management examples

Federal Fisheries (CONAPESCA)

- Minimum size limits
- Max. # abalone/reef; annual quota; season
- Formal protection to “reserves”
- Defining boundaries; granting concessions

Cooperatives

- More conservative size limits
- When to actually harvest;
- When, whether to leave “reserves”
- Enforcing boundaries

Key features and factors

- Productive and benthic resource base
- Co-management
- Smallness (or ability to control size)
- Clearly defined boundaries
- Leadership, fairness & transparency
- High-quality knowledge & decision-making
- Vigilance
- Exclusive concessions & incentives
- Strong sense of community

First Day of Spring Parade, Bahia Asuncion



- Embedded in local communities, which depend on cooperatives—isolated and poorly served by government
- Incentives to engage in co-management and respond to environmental changes:
 - High value of major fisheries
 - Exclusive access and use rights
 - High level of dependence on resources
 - Ability to claim and sustain autonomy to make and act on important fishery decision.

Sharing places & Innovation

- “Free Fishermen”
 - Sea mammals & birds
 - Loups de mer; sea lions
 - Bellenos; whales
 - Recreationists
 - Divers
 - Sailors & Fishermen
 - Whale watchers
 - Scientists & Enviros.
- Comunidad y Biodiversidad (COBI); WWF;
 - Innovative programs
 - Guerrero Negro: 10 coops (sans concessions), no fishing during whale season
 - I. Natividad, with COBI, experimental marine reserves.
 - El Rosario, Ensenada, 3 new marine reserves

10 coops sharing the Guerrero Negro estuary and salt flats with industry, whales, and whale watchers.



Abalone challenges.

El Niño. Poaching. Anoxia



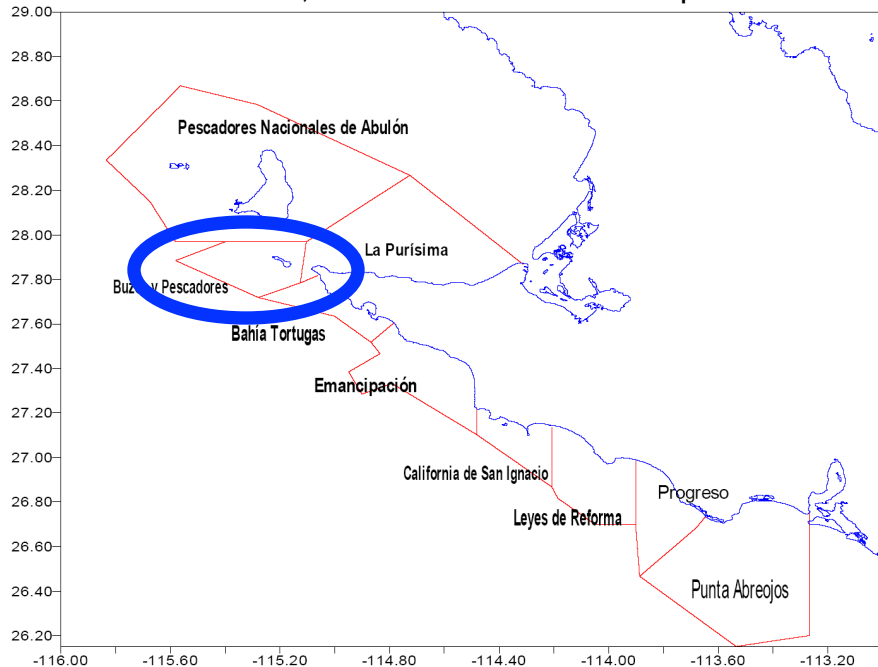
Ongoing projects: El Rosario case (COBI)

- Program at El Rosario cooperative: 3 marine reserves. Discovery of white abalone (collapsed 1990s)
- COBI and Stanford U.
- Private contract proposed.
- Problems with non-coop fishers
- Asking government to create a harvest refuge under fishery regulations

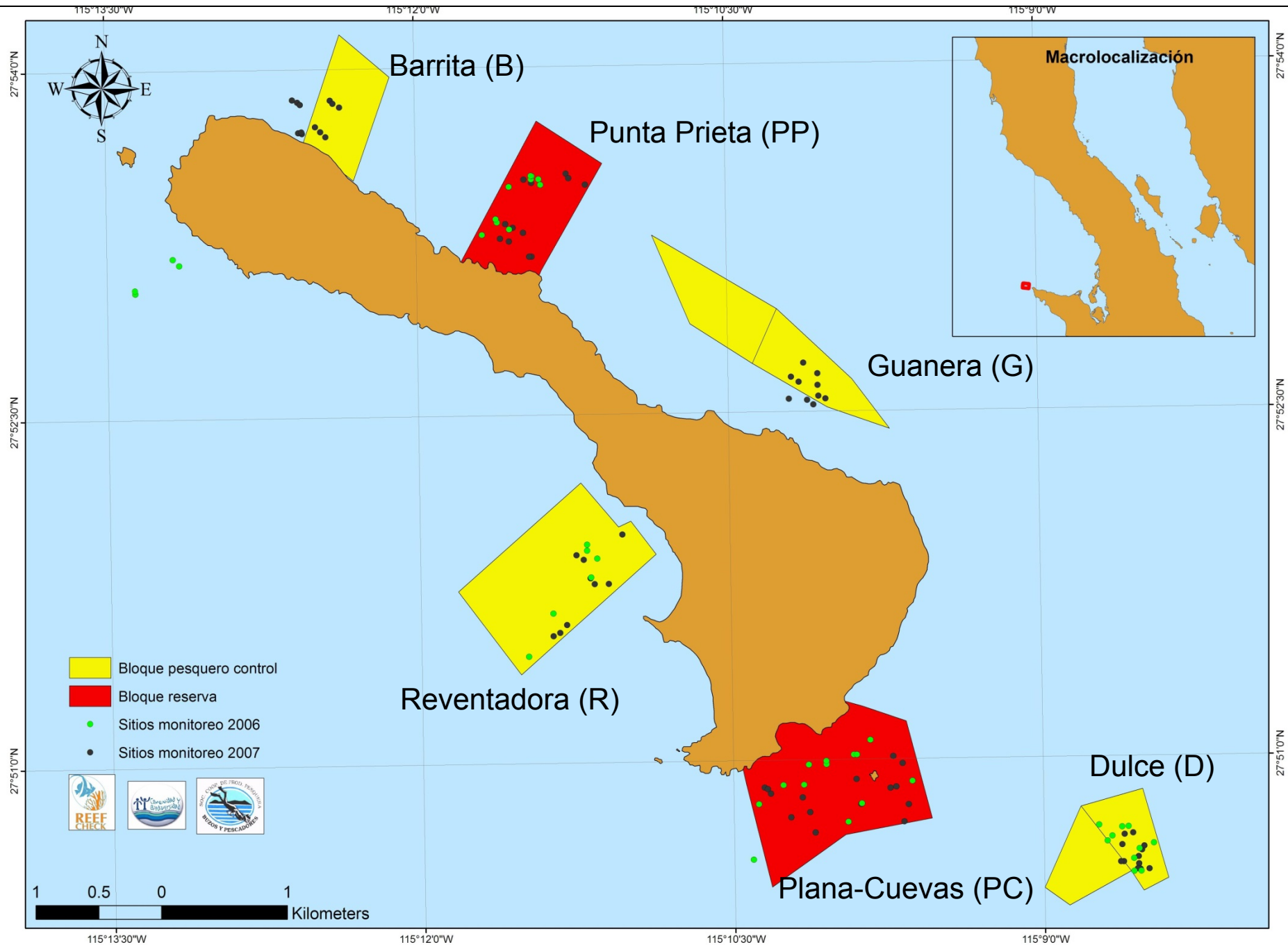
Experimental marine reserves: Isla Natividad



Zona Pacífico Norte, Áreas Concesionadas a cada Cooperativa



No-take reserves (red) and control areas (yellow)



Reserve Monitoring



Marine reserves and resilience at Isla Natividad

- Pink and green abalone
- Spring 2009 high mortality of abalone, urchins, etc. 70% (50% in reserves). 2010 hypoxia observed.
- Value of reserves for resilience of abalone: better recruitment, reproduction, recovery.
- exclusive access rights to coastal resources and thus their capacity to establish and enforce marine reserves
- Key to resilience in dealing with unprecedented events.
- Micheli et al. 2012, Plos One.

Lessons learned and shared...



Special conditions

- High level of productivity
- High abundance of valuable species
- >>investment in science and enforcement
- >>commitment to institutions.
- Isolation
- Cultural and political traditions:
 - Cooperatives
- windows of opportunity
- experience with environmental change (el Ninos)
- development of strong and adaptive capacities for co-management

Lessons

- Close tie to local communities, poorly served by govt.
- Scale: small size, adjacency
- High dependency on fisheries
- Coordination: federation of coops; co-management with government
- Long-term commitment to sharing and developing knowledge, data, programs
- Exclusive privileges that are defensible and defended > incentives, resources, feedback.

A photograph of a vibrant rainbow arching across a cloudy sky over a dark blue ocean. A small boat is visible on the horizon line. The text "THANK YOU." is overlaid in white on the lower right portion of the image.

THANK YOU.

boat going for fresh water for the Coop
plant and for the community,
Isla de Cedros