Science, policy, and people: Shifting the coastal zone management paradigm

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California’s population and economic centers are concentrated along the coast.

Source: U.S. Global Change Research Program, National Climate Assessment, 2014
California’s Ocean Economy contribution by sector

GDP, 2012
- Marine Transportation: 32%
- Tourism & Recreation: 39%
- Minerals: 24%
- Ship & Boat Building: 2%
- Construction: 2%
- Living Resources: 1%

Percent of Employment, 2012
- Tourism & Recreation: 75%
- Marine Transportation: 19%
- Minerals: 2%
- Ship & Boat Building: 2%
- Construction: 1%
- Living Resources: 1%

Multiple uses can challenge coastal ecosystems.

Tomales Bay, California
Good ocean policy

Social

Economic

Cultural

Ecological
Increasing carbon dioxide in our atmosphere is causing climate change.

Source: Victoria Fabry Lab, CSU San Marcos
Coastal Ecosystem Services

- Reduce impacts from floods
- Buffer from storm surge and waves
- Provide nursery habitat for fish and other species
- Water filtration
- Carbon storage
- Opportunities for recreation and enjoyment (human well-being)

Source: U.S. Global Change Research Program, National Climate Assessment, 2014
Working together on energy, climate, ocean health....
Senate Bill 1363, Monning, 2016

Ocean Acidification and Hypoxia Reduction Program

Source: iStock

Source: National Park Service
Sustainable management of marine resources
The Gold Rush
Easterners pour into SF Bay

Commercial oyster fishery
Began in SF Bay (Olympia oysters)

Oyster pirates
~1850s

Oystermen
San Francisco Bay

Courtesy: Library of Congress
California Environmental Quality Act of 1970; California Coastal Act of 1976; Rivers and Harbors Act of 1899; Clean Water Act of 1972; California Eelgrass Management Policy; California Aquaculture Development Act (1979); Senate Bill 1917 (1982); Assembly Bill 1589 (1987); California Aquaculture Promotion Act (1995); Senate Bill 245 (2003); Senate Bill 201 (2006); Senate Bill 1363 (2016)...........

Crowder et al. 2006, Science
Resolving Mismatches in U.S. Ocean Governance
How do we use coastal resources without using them up?
Problem:
How do we use coastal resources without using them up?

Solution?
Ecosystem-based management
“Holistic Ocean Care”