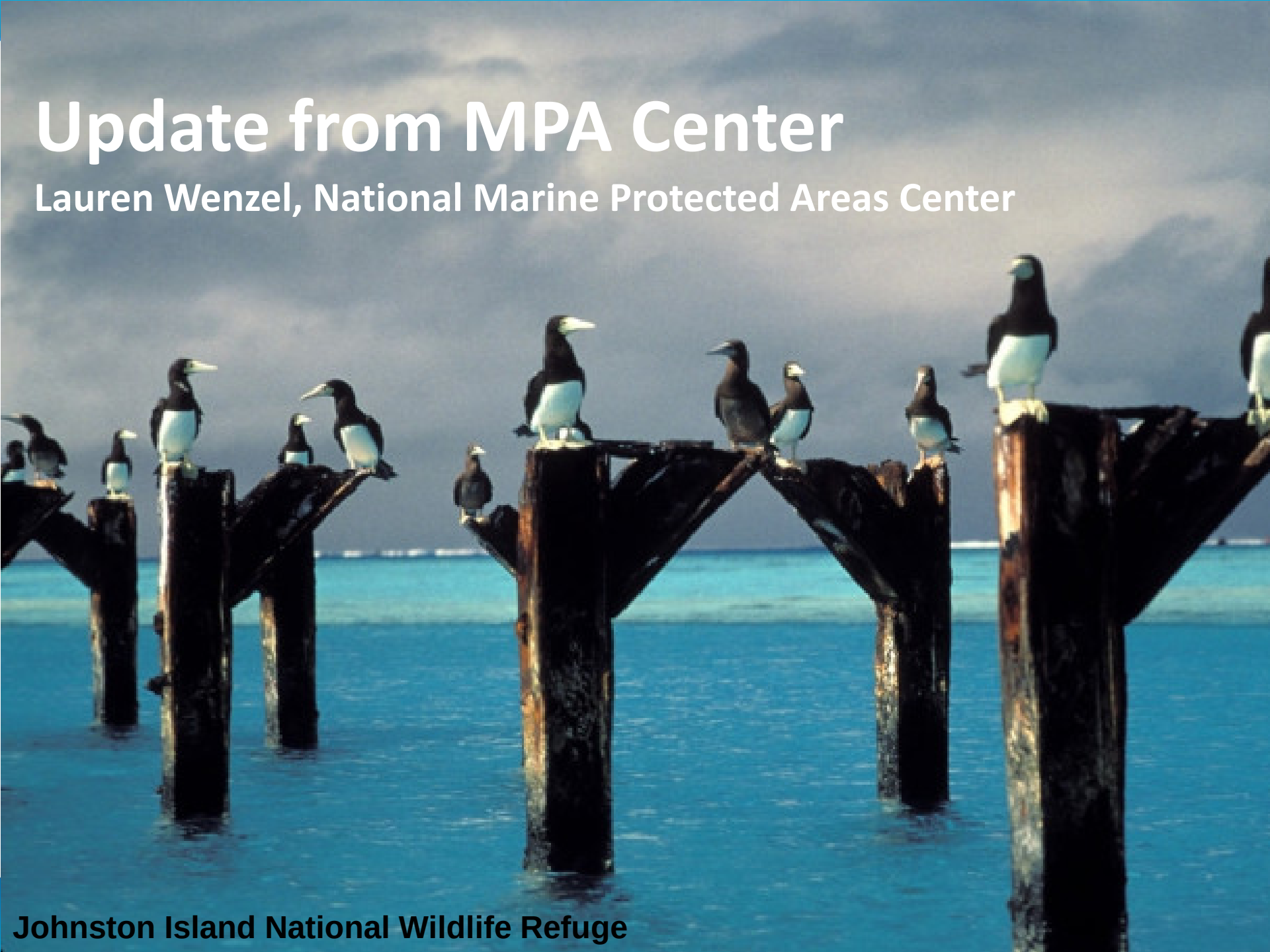
Update from MPA Center

Lauren Wenzel, National Marine Protected Areas Center



Johnston Island National Wildlife Refuge

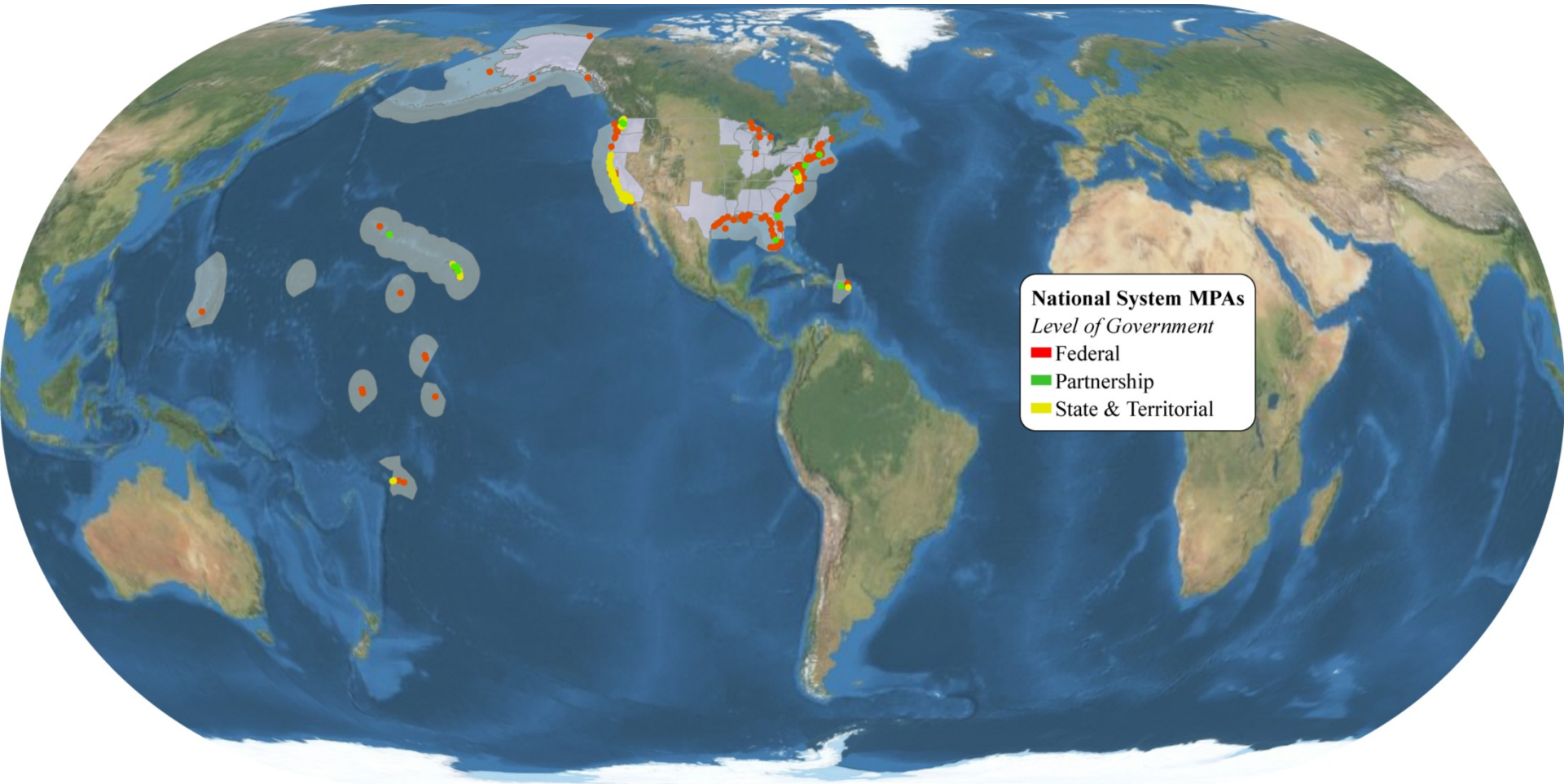
Overview

- Program initiatives
- FY12 Plans
- Budget Outlook

MPA Inventory Updates

- 1689 MPAs
- 297 National System Members
- Current Initiatives
  - Incorporate MPA Inventory into Google Earth
  - Integrate with Protected Areas Database of the United States (PAD-US) and World Database of Protected Areas (WDPA)

National System Members



National System Nominations

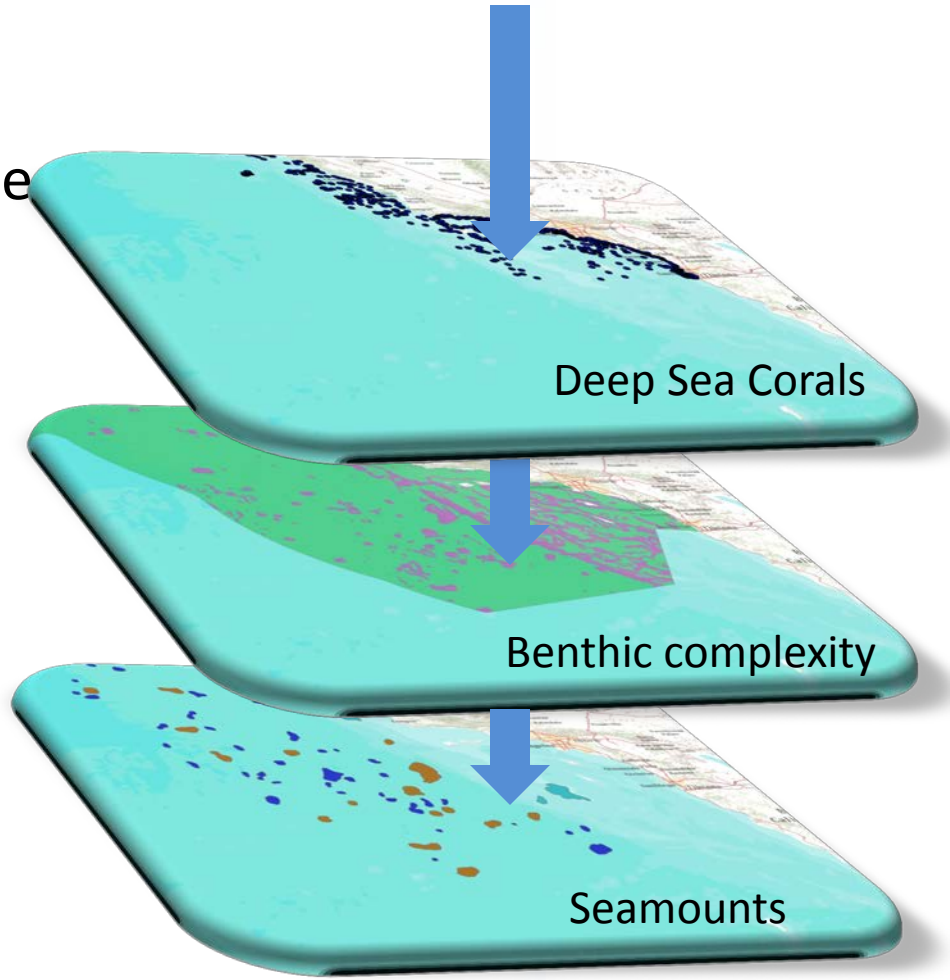
- 5th round of nominations to National System
  - National Park Service (2)
  - National Wildlife Refuges (1)
  - American Samoa (3)
  - Massachusetts (40)
  - Puerto Rico (5)
  - South Carolina (1)
  - US Virgin Islands (1)
  - Washington (3)
  - Alaska (1 – tribal)

National System Nominations:

- Significant expansion of cultural heritage sites
- First submission of tribal site (AK)

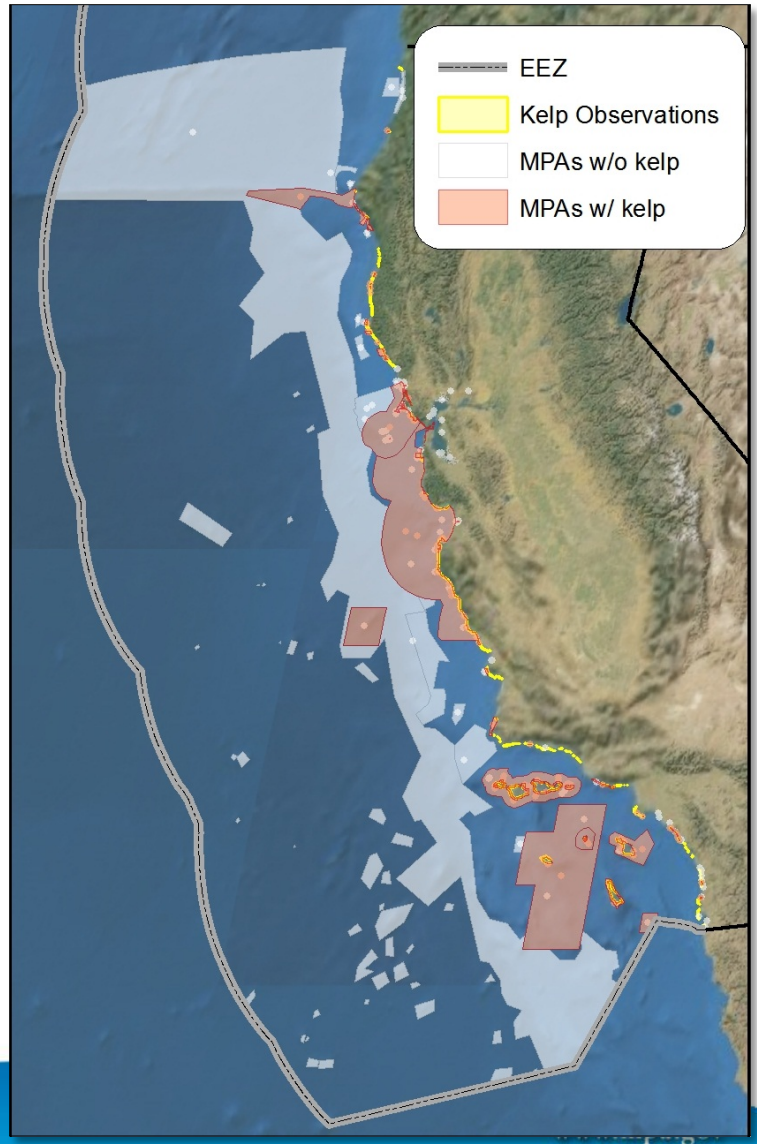
SPatial Assessment Resource Characterization Tool (SPARC)

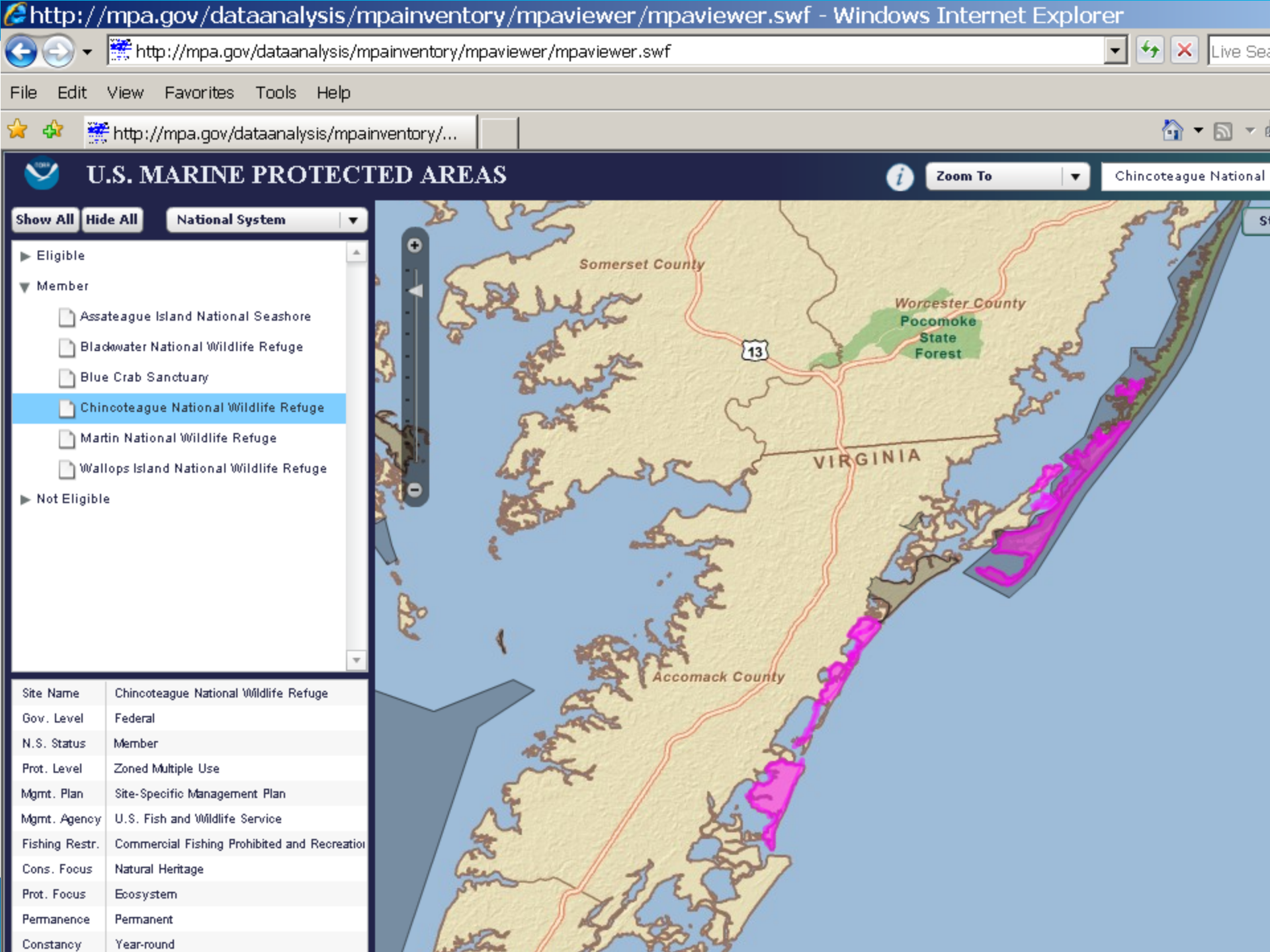
- Partnership with NOAA National Centers for Coastal Ocean Science
- GIS Decision Support Tool
- Select MPA Areas of Interest
  - Select Comparison MPAs
  - Compare With All MPAs
- Analyze Resource Distribution
  - Area of resource in MPAs
  - Area of resource outside MPAs



SPatial Assessment Resource Characterization Tool (SPARC)

- Sample Results
  - Kelp is present in 124 km^2 of California waters
  - Of the 213 California MPAs, 109 (51%) have kelp resources
  - Kelp covers 0.03% of MPA area
  - 66 km^2 (53%) of kelp area is within MPAs
  - 28 km^2 (23%) of kelp is within no-take MPAs
- Use Considerations
  - Needs reliable resource data
  - Results require interpretation

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U.S. MARINE PROTECTED AREAS
Zoom To
Chincoteague National
Show All
Hide All
National System
Eligible
Member
Assateague Island National Seashore
Blackwater National Wildlife Refuge
Blue Crab Sanctuary
Chincoteague National Wildlife Refuge
Martin National Wildlife Refuge
Wallops Island National Wildlife Refuge
Not Eligible
Somerset County
Worcester County
Pocomoke State Forest
13
VIRGINIA
Accomack County
Site Name Chincoteague National Wildlife Refuge
Gov. Level Federal
N.S. Status Member
Prot. Level Zoned Multiple Use
Mgmt. Plan Site-Specific Management Plan
Mgmt. Agency U.S. Fish and Wildlife Service
Fishing Restr. Commercial Fishing Prohibited and Recreatio
Cons. Focus Natural Heritage
Prot. Focus Ecosystem
Permanence Permanent
Constancy Year-round

MPA Inventory Expansion - Resources

Project Aim:

- Add ecological and cultural resources info to the Inventory
- Ecological and Cultural resources captured by 74 resource groups

Current Status:

- 30% (471) of Inventory complete (CA, OR, WA and current national system sites)
- Completion May 2012

Type of analysis (west coast):

Fig 1. 94 (30%) sites have anadromous fish

Fig 2. 140 (45%) sites have kelp

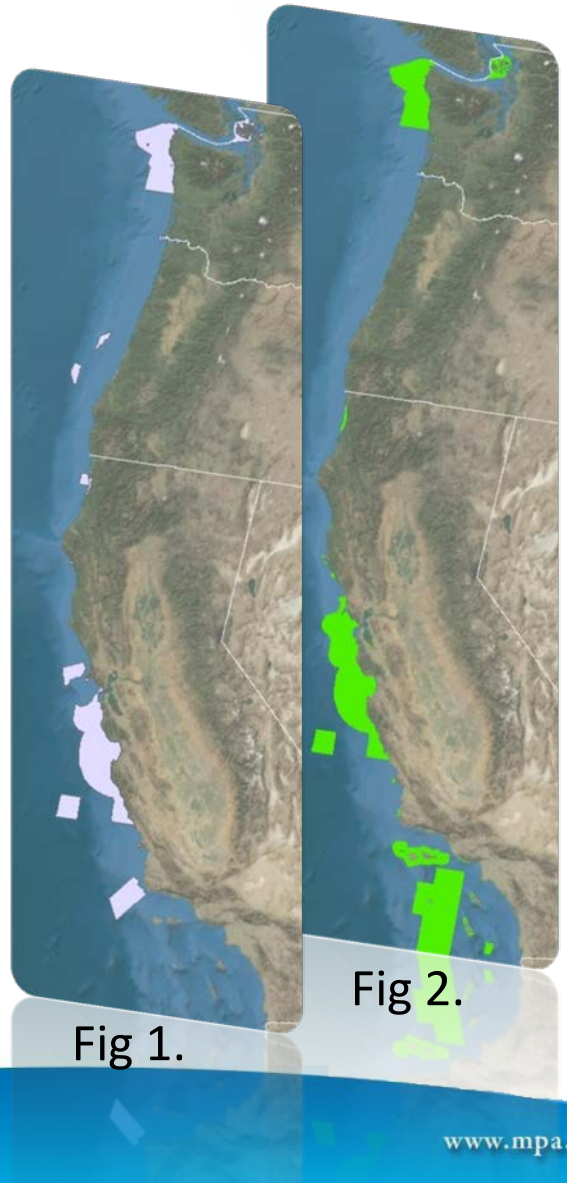


Fig 1.

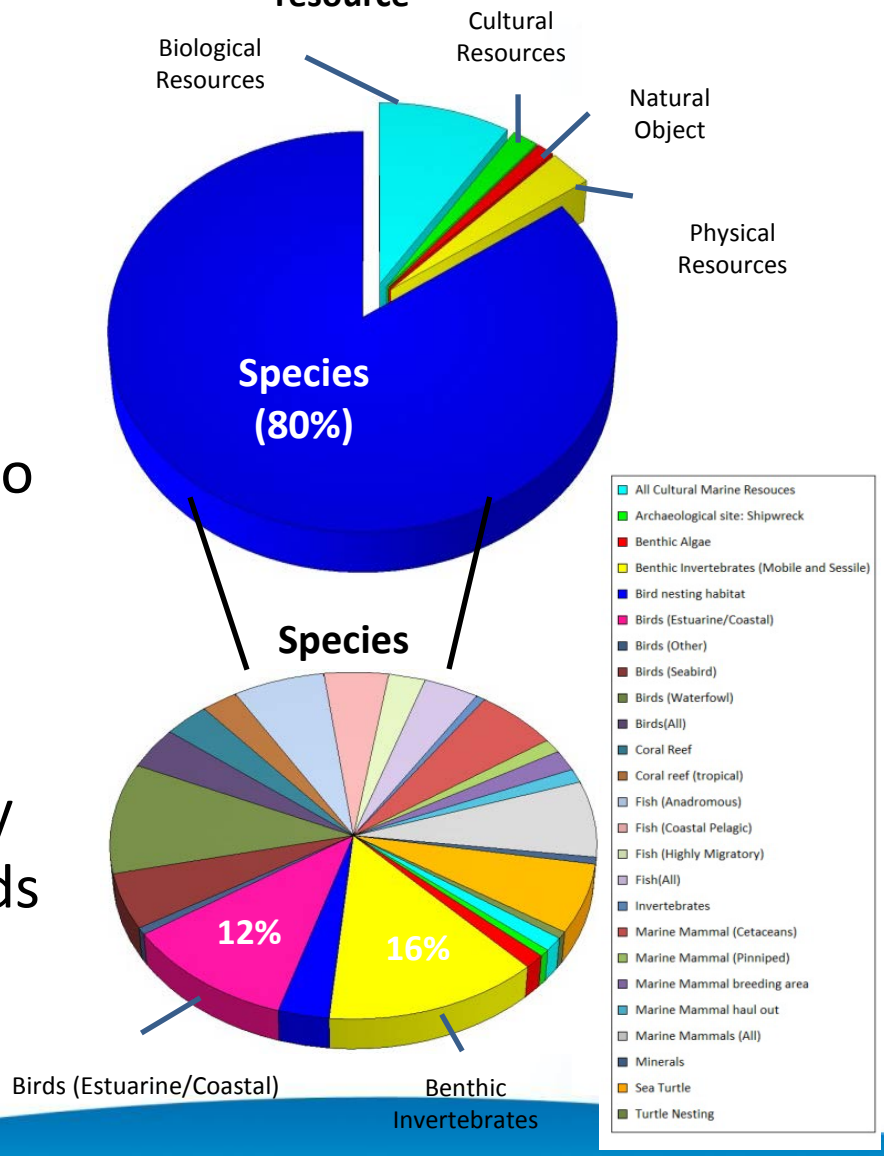
Fig 2.

MPA Inventory Expansion - Regulations

- Characterize the resources legally protected within national system sites
- Characterize methods used to protect resources using 139 standardized regulation bins
- Compare/contrast regulatory methods to determine trends in resource protection and identify potential gaps

Resource Findings:

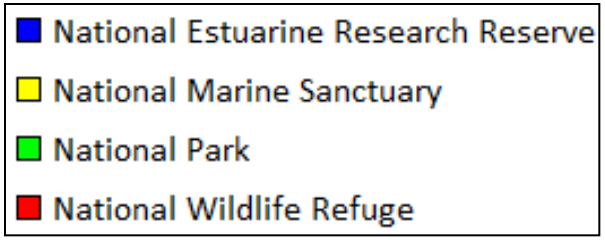
- 22% (185 of 847) of collected site regulations explicitly state a focal resource



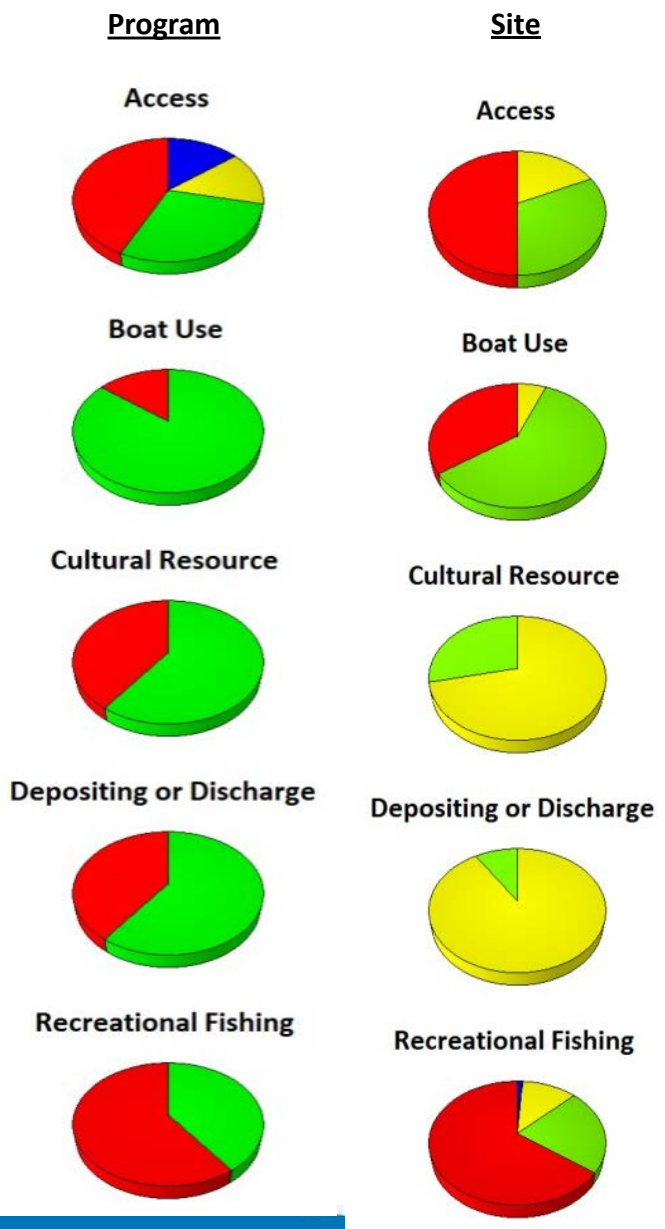
MPA Inventory Expansion - Regulations

- Federal program regulations: 68% (173 of 256) relate to human uses

- Federal site regulations: 96% (538 of 565) relate to human uses



Percent (%) of Federal Program and Site regulations related to select uses



Building Ecological Networks

- Representativeness
- Replication
- Resilience
- Viability
- Connectivity

Mapping Ocean Uses

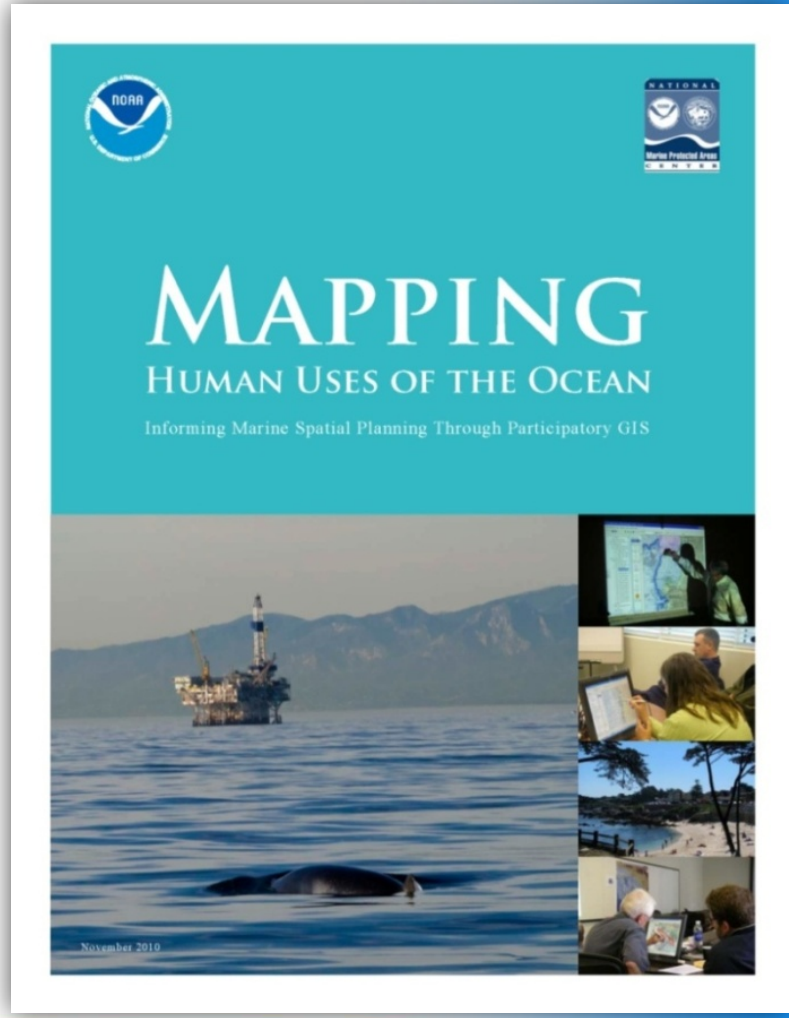
- Working in:
  - California (2009)
  - Hawaii (2010-11)
  - Washington (2012)
  - USVI (2012)

- Consulting with state CZM and CMSP leads in other regions

- Creating analytical ocean uses data and products

- Exploring use conflicts and compatibilities

- Building partnerships to fill data gaps



California Ocean Use Atlas

View uses individually

Science

- Working with International Council for the Exploration of the Seas (ICES) on guidelines for MPA design and management based on expected climate change impacts
- High seas MPAs – identifying vulnerable ecosystems
- Developed “Science Briefs” to communicate MPA science

MPA Science Brief: What Does the Science Say?

DO FISH SWIM OUT OF MARINE PROTECTED AREAS?

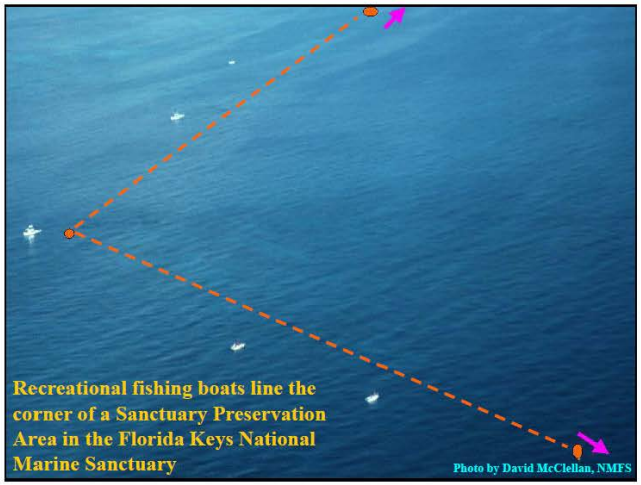
Benefits of "no-take" MPAs: What happens inside and outside these areas?

Over the past decade, many environmental groups, politicians, and scientists have called for large-scale implementation of marine protected areas (MPAs) in which fishing is restricted or prohibited altogether (e.g., "no-take" or fully protected MPAs). Globally, the abundance of fish has continued to decline despite using conventional fishery management tools like changes in gear used, use of short-term closures, and the reduction in fishing effort and catch of non-targeted species. It is thought that by removing fishing pressure completely from key areas, such as spawning or nursery habitats, targeted fish stocks will be able to rebound (NRC 2001). Monitoring results from 89 no-take MPAs around the world where fishing is prohibited has been assessed and it was found that, on average, fish density, biomass, size, and diversity all increased within no-take MPAs (Halpern 2003). However, fishermen often ask "what good is it if the abundance and size of fish increases inside a no-take MPA if these fish are off limits?" MPA proponents note that MPAs can create "win-win" situations where an increase in the number of fish inside a no-take MPA results in better fishing in areas adjacent to the no-take MPA, as fish are free to move back and forth across the boundary. But, how do we know if fish from inside any MPA really do swim out to adjacent areas?

How can fish movements be tracked?

Various methods are currently used to track the movements of fish. Small external tags are attached to fish so that they can be visually identified when they are caught by fishermen or seen during SCUBA or snorkeling surveys. Transmitters are placed on or surgically implanted in fish that put out an acoustic signal that can be detected by stationary receivers (e.g., hydrophones) or by someone actively following the fish either from a boat or by SCUBA diving. Large pelagic fish such as sharks, billfish (e.g., swordfish, marlin), and tunas are given individually identifiable electronic tags and tracked via satellite telemetry (Lowe and Bray 2006). Understanding where, when, and why fish move is important in choosing locations for MPAs to meet specific conservation goals such as protecting critical habitats and fish stocks from overfishing.

Do fish "spill over" into unprotected areas?



Recreational fishing boats line the corner of a Sanctuary Preservation Area in the Florida Keys National Marine Sanctuary

Photo by David McClellan, NMFS

Fish spillover is defined as the active movement of fish swimming out of MPAs into adjacent areas. There are many examples of fish that have been tracked moving out of MPAs and what happened in adjacent areas. In tropical coastal habitats in Cuba, the establishment of no-take MPAs resulted in twice as many fish swimming to neighboring areas as swam into the MPA (Amargós et al. 2010). This likely occurred because fish left the no-take MPA as it became too crowded and competition for food and shelter increased. In the Philippines, there was a 3 to 4.5-fold increase in fish biomass in no-take MPAs in the 18 years after they were established (Alcala 2005). In areas outside the no-take MPA, trap and gillnet catches increased by about 27% over this same time period, suggesting that spillover of fish out of the MPA was probably occurring. Elsewhere in the Philippines, the biomass of surgeonfish tripled inside a no-take MPA (Russ et al. 2003). Just outside the no-take MPA (within 200m), biomass of surgeonfish increased by a factor of 40. The number of fish caught (expressed

Share


About MPAs
Definitions, criteria, classification system and description of MPA programs


National System
Members, goals and objectives of the National System of MPAs


Data & Analysis
Databases, MPA analysis reports and mapping products


Resources
MPA Virtual Library, educational materials, publications and multi-media products


Science & Stewardship
Mapping ocean uses, MPA effectiveness, navigating MPAs, climate change impacts, and ecological gap analysis


Advisory Committee
Members, bios, upcoming meetings and meeting minutes from the MPA Federal Advisory Committee

Quick Links

MPA Mapping Tool

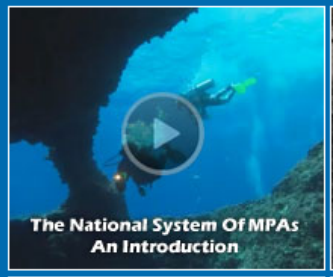
MPA Inventory

National System of MPAs

MPA Virtual Library

Fact Sheets

New! Videos on the National System of MPAs



Marine Protected Areas

The National System of Marine Protected Areas

The U.S. is implementing a comprehensive, science-based and effective national system of MPAs. The national system will include existing MPAs across all levels of government to protect important habitats and resources.

The List of National System MPAs

The List of National System MPAs is the official inventory of all MPAs

Like Us On Facebook

What's New

New! Publication on Marine Reserves in the United States

MPA Center and NFWF Announce MPA Partnership Grant Recipients

Snapshot of Gulf of Mexico MPAs

Updated MPA Mapping Tool and MPA Inventory

Ask The MPA Center

How do I nominate sites to the national system?

What is an MPA?

What are the benefits of a national system of MPAs?

MPA of The Month

Maine- Rachel Carson National Wildlife


Rachel Carson National Wildlife Refuge was established in 1966 in cooperation with the State of Maine to protect valuable salt marshes and estuaries for migratory birds. The proximity of the refuge to the coast and its

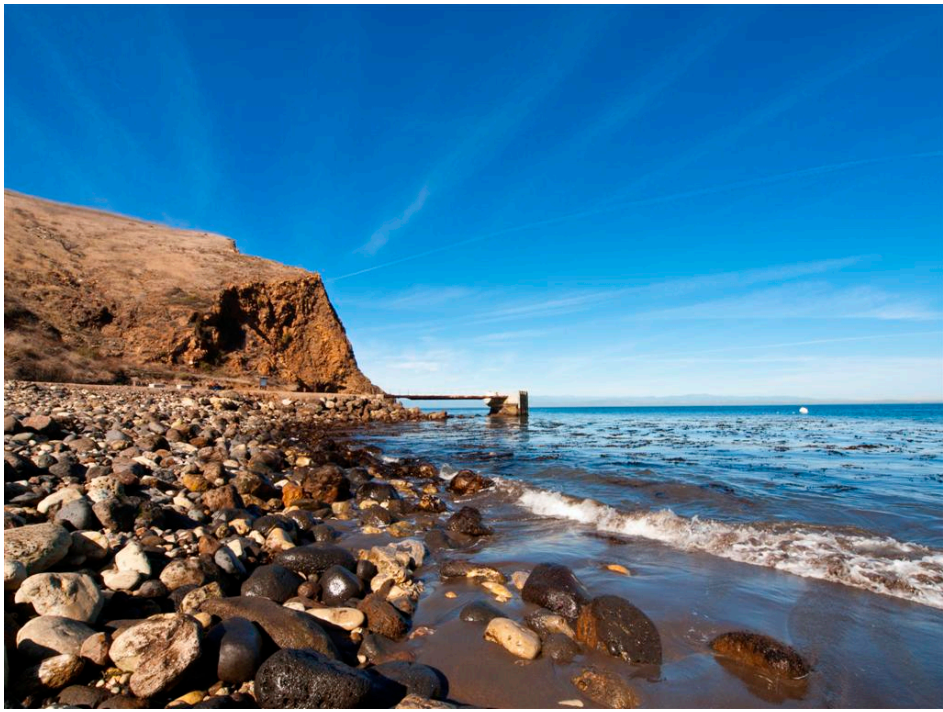
Outreach

- North American MPA Network
  - Partnership with aquaria on MPA videos
  - Coordinated event for World Ocean Day 2012
- Communications Plan for National System


Federal Advisory Committee

Federal Advisory Committee

- FY11
  - Met once in person
  - worked virtually to complete CMSP recommendations and advance others
  - First experience with Workgroup



Federal Advisory Committee

- FY12
  - Transitioning to 20-member Committee
  - Sixteen members departing; six new members to be added soon
  - New charge
  - Opportunities for partnerships


Training

MPA Fund

- Partnership with National Fish and Wildlife Foundation
- Tangible incentive for MPA national system partners
- Fosters collaboration among MPA programs
- Strengthens stewardship, planning and System membership
- Hope to continue & expand in FY11 and beyond
- Awarded 9 MPA partnership grants in FY10 & FY11

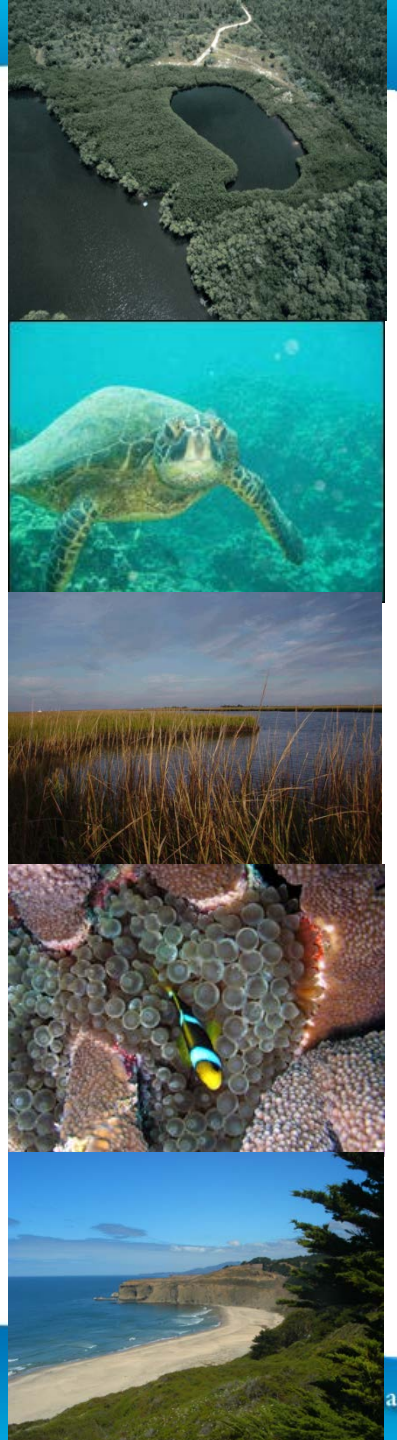
National Fish and Wildlife Foundation

CELEBRATING 25 YEARS

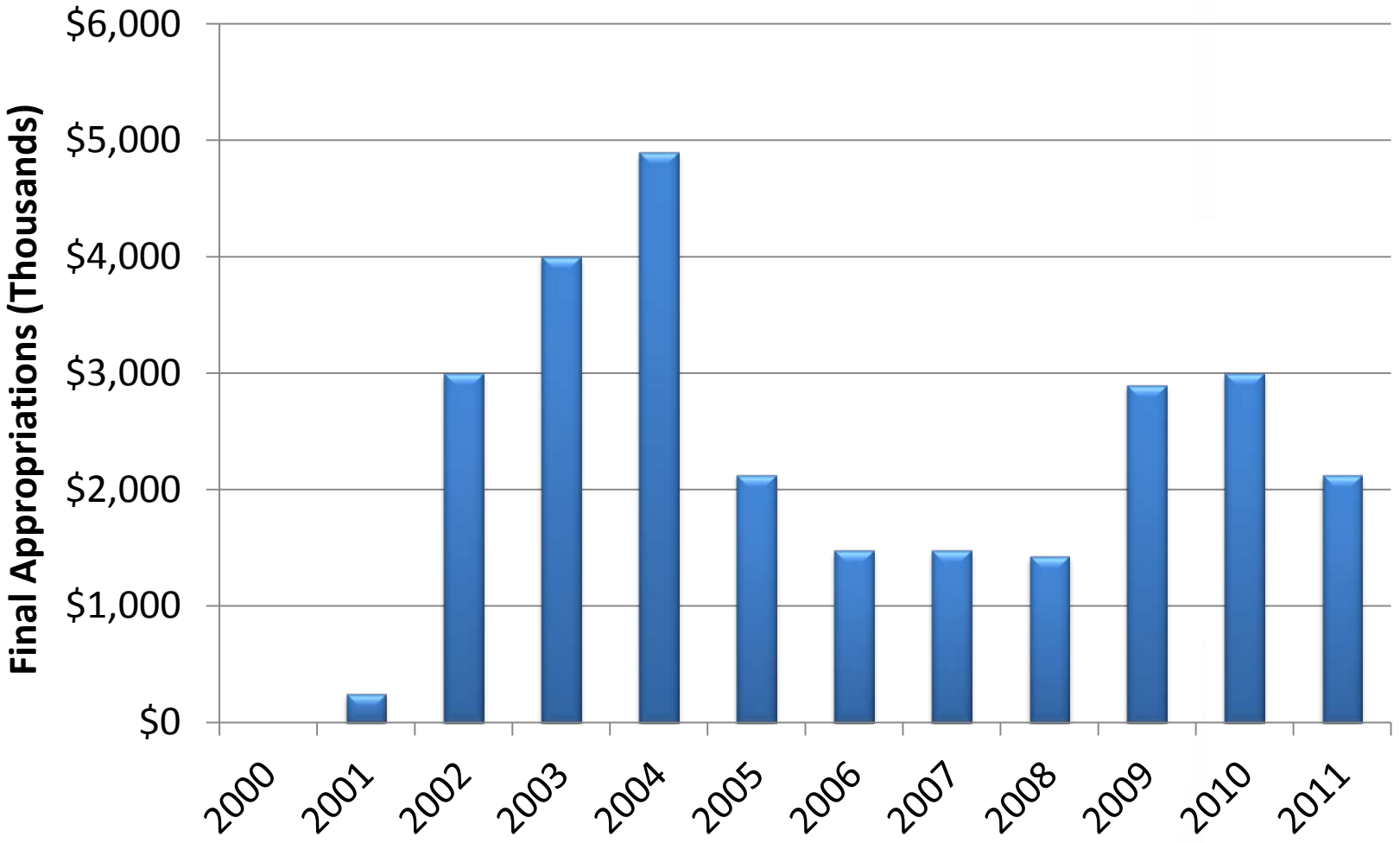
NATIONAL Marine Protected Areas CENTER

MPA Fund Projects – FY11

- Implementing Regional MPA Plan for the Gulf of Mexico (Friends of Rookery Bay)
- Channel Islands Chumash MPA Stewardship Education Project
- Optimizing Monitoring and Surveillance in MPAs
- Development of MPA Coordination Framework in the U.S. Virgin Islands
- Oyster Habitat in the Cape Romain Refuge



MPA Center Budget History



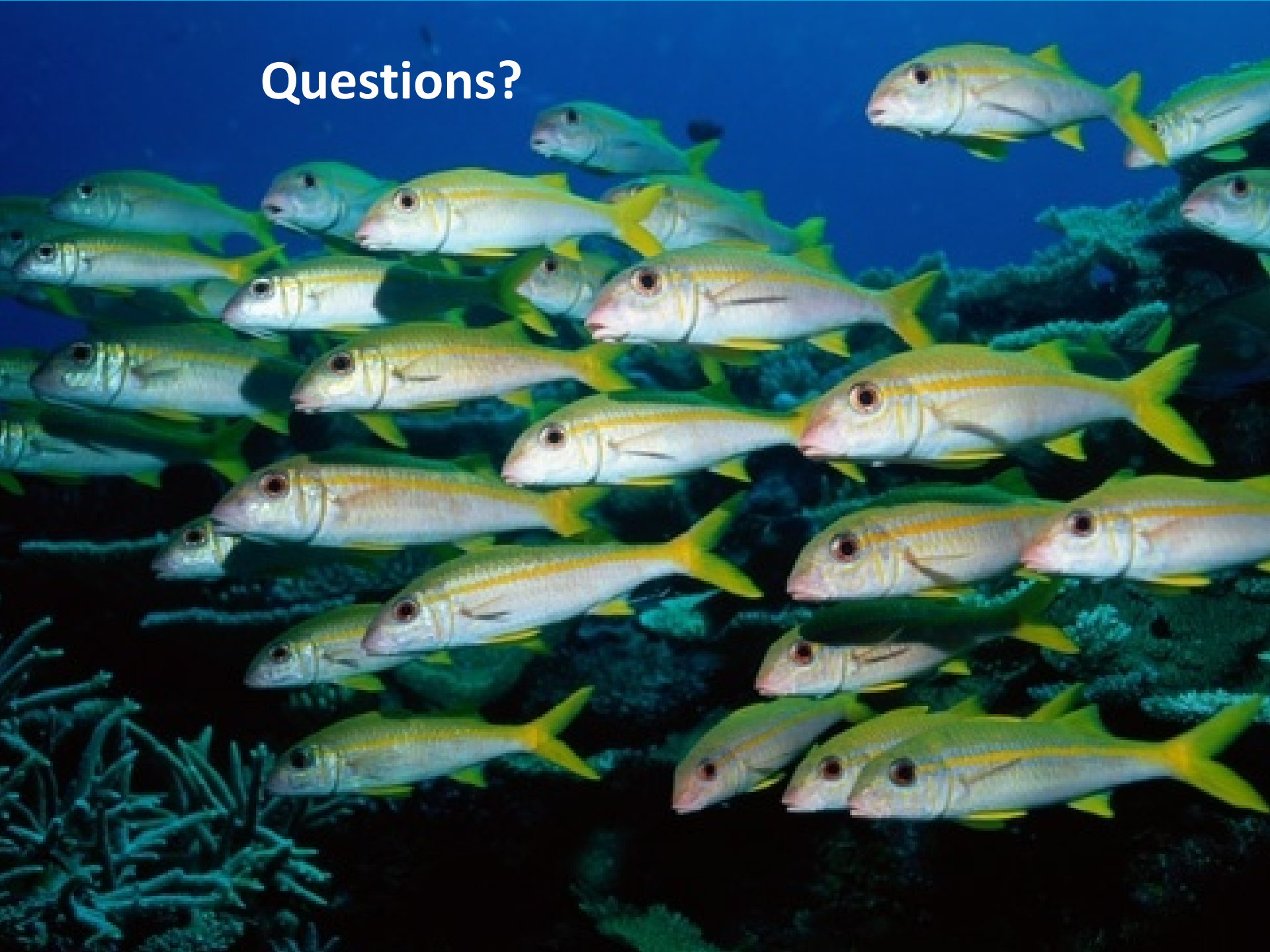
The Big Squeeze:
Outlook for FY12 and Beyond

- FY12:
  - House mark: $1.46M
  - Senate mark: $1.98M
- FY13:
  - OMB and Congress signaling significant cuts across many federal programs

Opportunities for Input

- NOS Assessment
  - Seeking organizational efficiencies; improved messaging
- MPA Center External Review
  - Seeking external assessment of past performance and future priorities and directions
  - Will publish Federal Register notice seeking public input (Dec-early Jan 2012)

Questions?

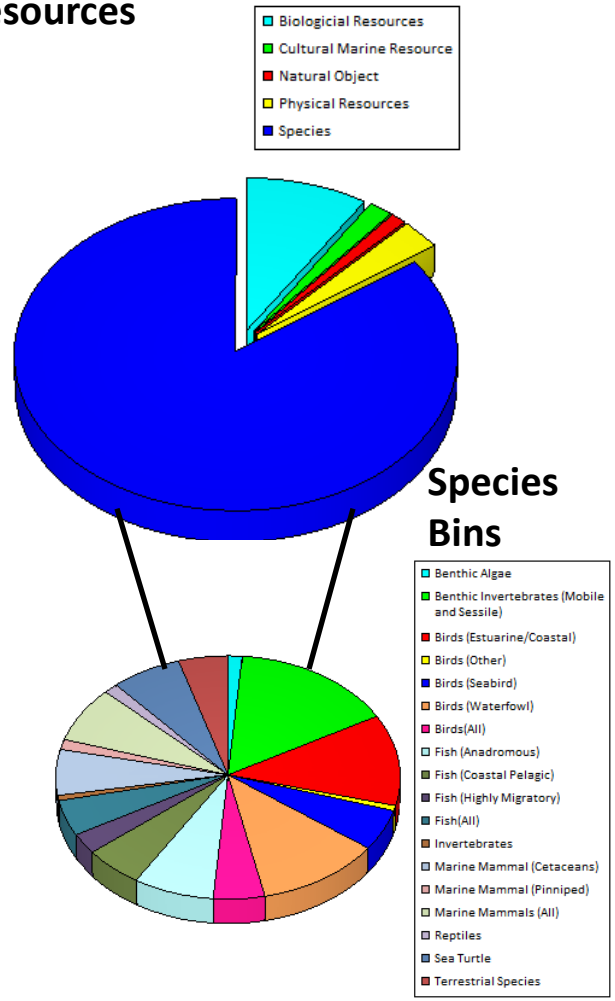


Avoid Harm

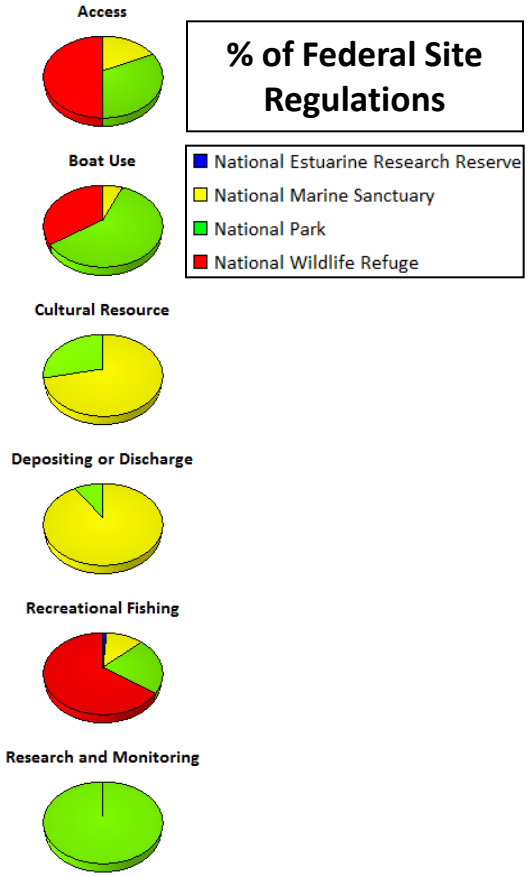
Goals

- Characterize the resources legally protected within NS Sites
- Characterize methods used to protect resources using 140 standardized regulation bins
- Compare/contrast regulatory methods to determine trends in resource protection and identify potential gaps

Findings:
185 of 847 (22%) collected regulations relate to specific resources



Findings:
A majority of regulations (~75%) collected regulations relate use activities



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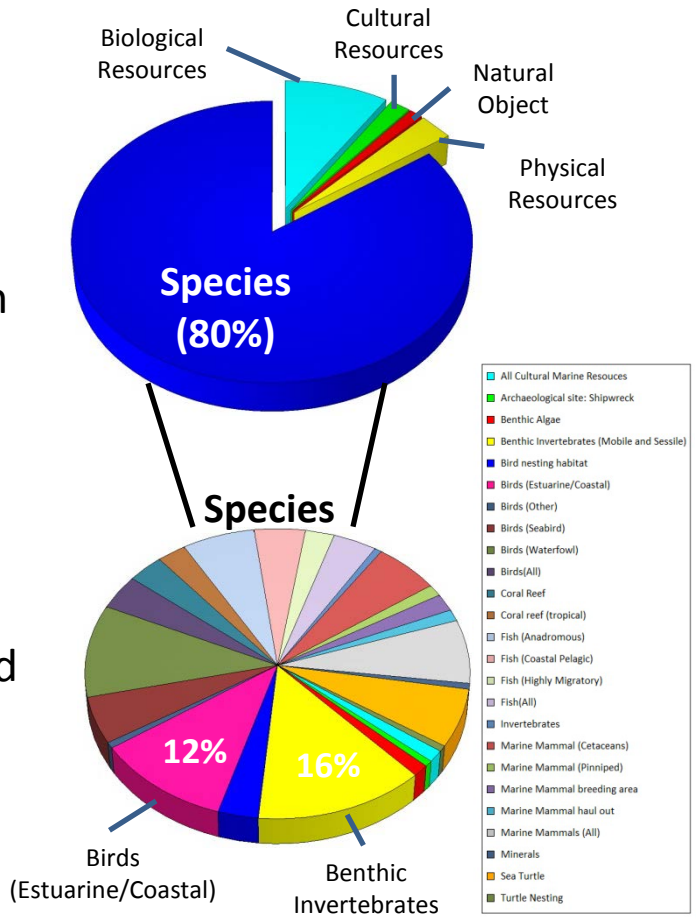
- Of 185 focal resource regulations, 80% are related to a Species group



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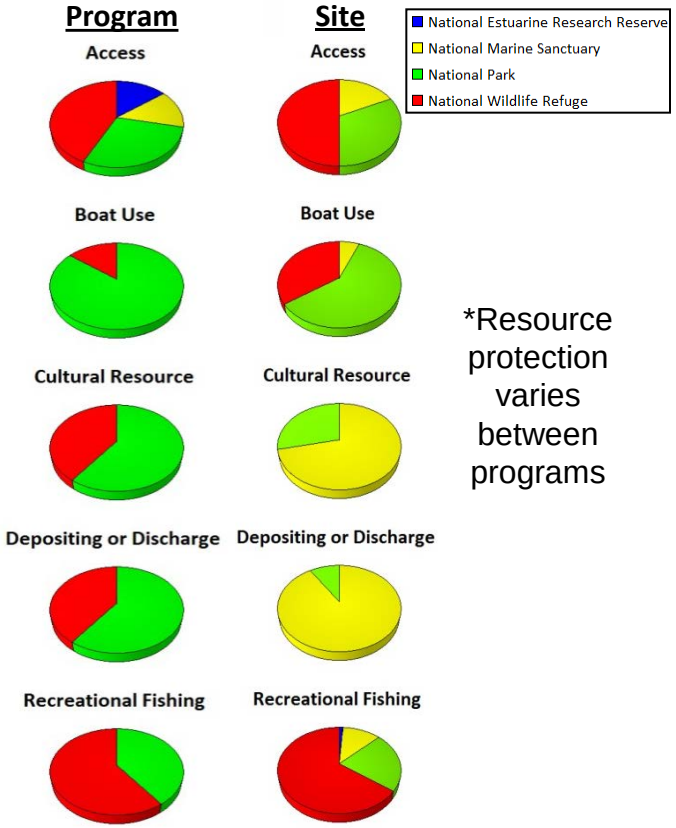
Percent (%) of Federal Program and Site regulations related to select uses



*Resource protection varies between programs