

BIODIVERSITY: OUR PILLAR OF HOPE IN A

President's Council of Advisors on Science and
Technology



Honorable Dr. Jane Lubchenco

Under Secretary of Commerce for Oceans and Atmosphere & Administrator of NOAA
May 21, 2010

A vertical strip on the left side of the slide contains several underwater photographs. From top to bottom, it shows a diver's head and light, a small fish, a large yellow sponge, a brown starfish, and a close-up of a coral polyp.

Roadmap

Baseline Knowledge

Importance of Biodiversity

NOAA's Actions

Federal Coordination

International Engagement

Definitions

Biodiversity

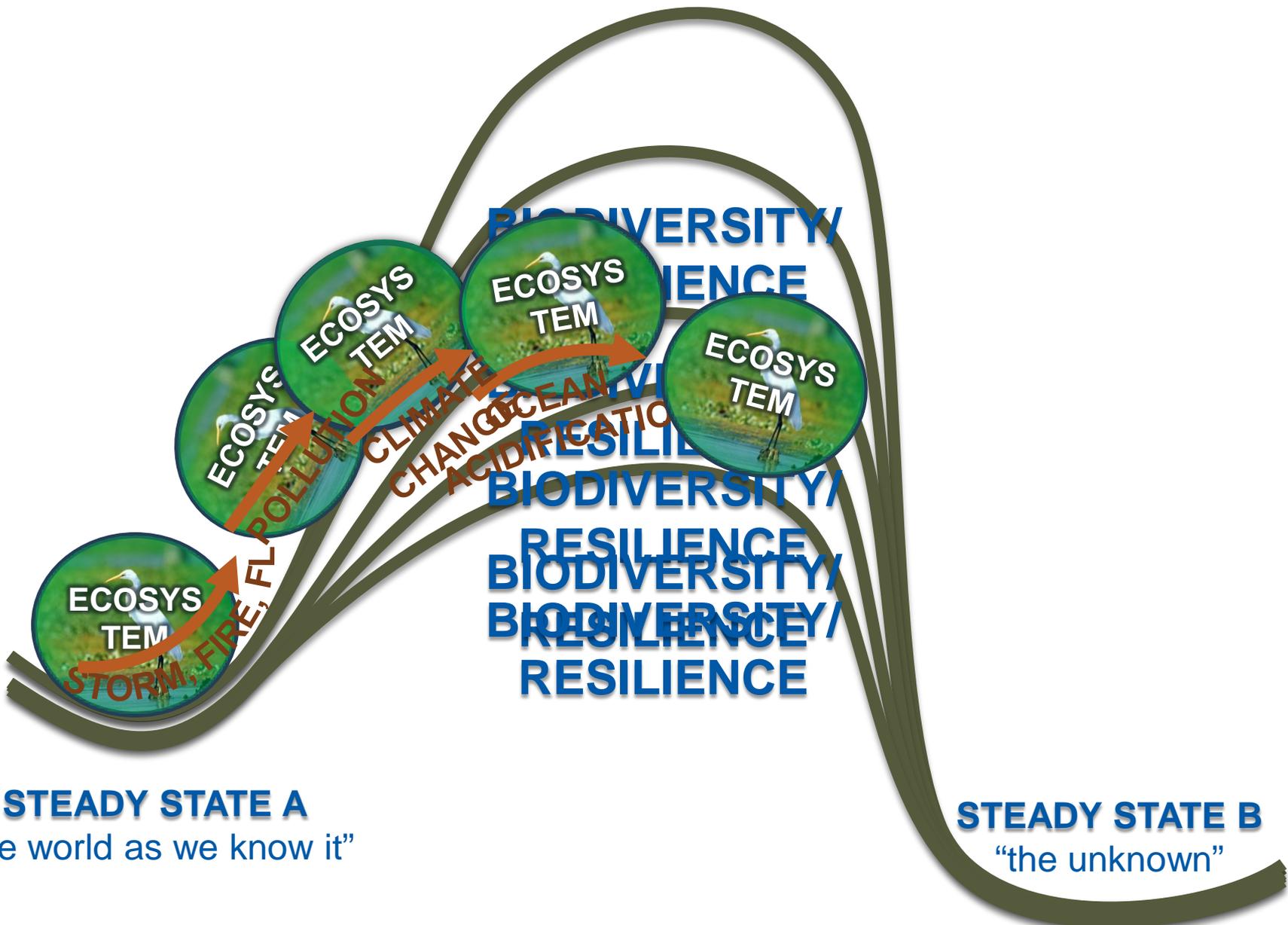
is the variation of life forms in an ecosystem, biome, or on the entire Earth.



Resilience

is the capacity of a system to absorb disturbance and still retain its basic function and structure.





ECOSYSTEM SERVICES

SERVICE CATEGORIES

PROVISIONING

REGULATING

CULTURAL

SUPPORTING

SERVICES

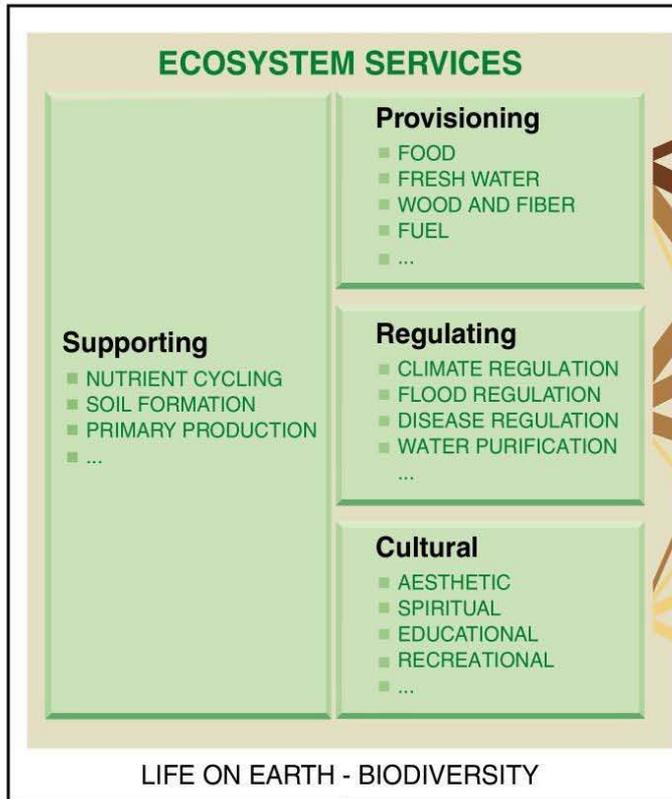
Food, water, timber, & fiber

Climate, floods, disease, wastes, and water quality

Aesthetic, spiritual, educational, recreational

Soil formation, photosynthesis, and nutrient cycling

Millennium Ecosystem Assessment



CONSTITUENTS OF WELL-BEING



Source: Millennium Ecosystem Assessment

ARROW'S COLOR
Potential for mediation by socioeconomic factors

- Low
- Medium
- High

ARROW'S WIDTH
Intensity of linkages between ecosystem services and human well-being

- Weak
- Medium
- Strong

Citizens Want To See...



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HEALTHY SEAFOOD



CLEAN BEACHES

GOOD JOBS

ABUNDANT WILDLIFE



VIBRANT COASTAL COMMUNITIES



RENEWABLE ENERGY RESOURCES



STABLE FISHERIES



FOR GENERATIONS & GENERATIONS...

FROM ERS TO OUR PLANET OF HOPE IN A CHANGING WORLD

TRADEOFFS IN ECOSYSTEM SERVICES



INTACT MANGROVE: nursery & adult habitat, traps sediment, detoxifies pollutants, protects shoreline

CONVERTED MANGROVE: food, housing

Consequences



Dead Zones



Harmful Algal Blooms



Coral Bleaching



Polluted Beaches



Endangered Species



Depleted Fisheries



Diseases, Pests



Seafood Safety Concerns



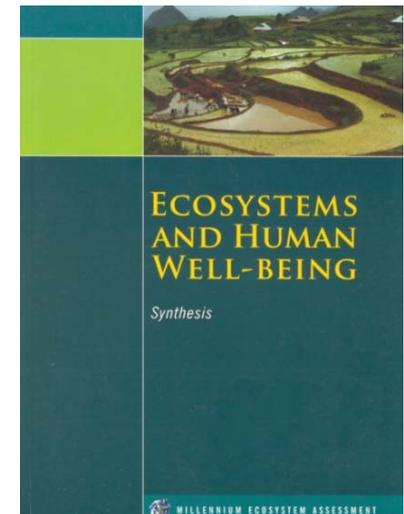
Loss of Top Predators

**DEPLETION & DISRUPTION
LOSS OF RESILIENCE**

Millennium Ecosystem Assessment:



1. 60 % of services have been lost or are currently at risk
2. Provisioning services have been favored at the expense of other valuable ecosystem services
3. Current drivers of ecosystem degradation are mostly constant or accelerating
4. Reversing the degradation while meeting increasing demands for services will require significant changes in policies, practices, and institutions





Grand Societal Challenge

Improve Human Well-Being
While Preserving and
Restoring the

Planet's Life Support
System

NOAA's Contribution

Restoring and preserving biodiversity, habitat, and ecosystem function

Improving and expanding available science



Ft. McHenry Cleanup



Chesapeake Bay Marsh Replanting



Narragansett Bay Eelgrass Beds Restoration

Habitat Restoration



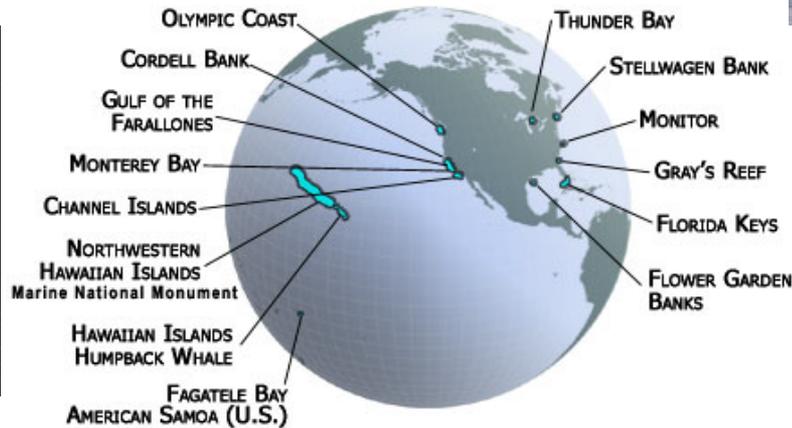
Long Beach, CA Habitat Restoration
Pine Ponds, OR Invasive Species Removal
Derelict Crab Pot Removal, OR



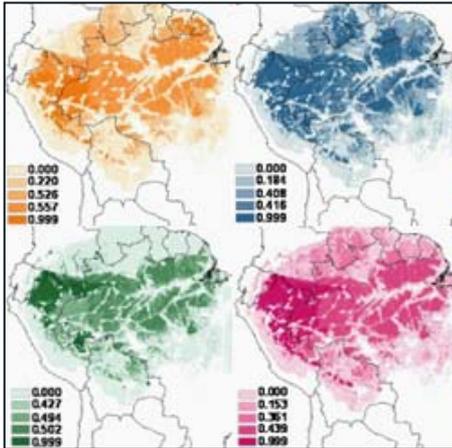
Oyster Reef Creation/Enhancement, NC
Reef Ball Deployment, Coffee Island, AL

Muskegon Lake Habitat Restoration, MI

Marine Sanctuaries



Natural Capital Project

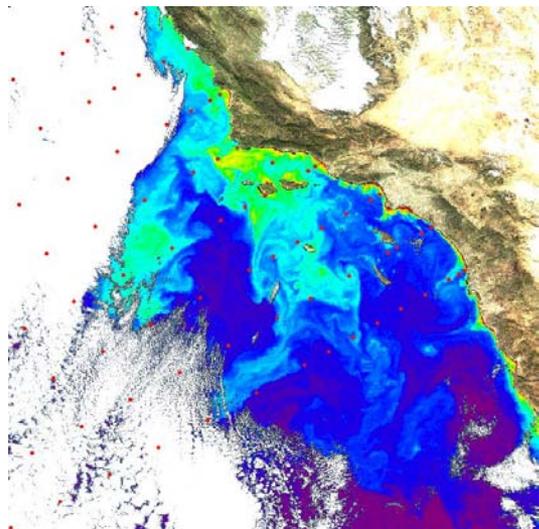


Stanford University, University of Minnesota, TNC, WWF, NOAA

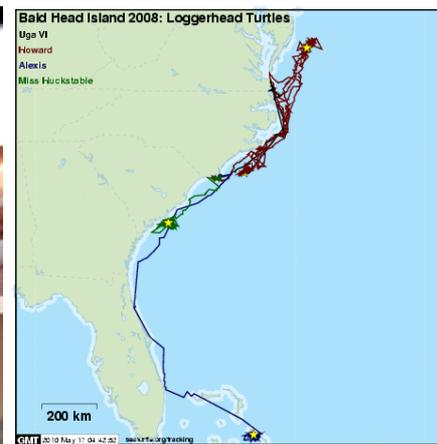
Developing a tool: InVEST = Integrated Valuation of Ecosystem Services and Tradeoffs

- ☑ To model and map the delivery and value of ecosystem services into the future
- ☑ To allow for visualization of impacts and tradeoffs associated with potential decisions

Next Generation of Biodiversity Study



AQUA satellite image of harmful algal bloom, CA



Loggerhead sea turtle satellite tracking, NC



Satellite image of San Francisco Bay & Estuary showing salmon research stations

Science Advisory Board Findings



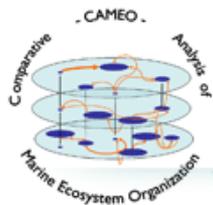
“Marine biodiversity is a bigger topic than NOAA
NOAA must coordinate with other federal agencies
on marine biodiversity, particularly in the area of
data (e.g., USGS and OBIS) and with respect to
the Integrated Ocean Observing Systems”

Federal Coordination



Joint Subcommittee on Ocean Science and Technology's Ocean Partnership

“Comparative Analysis of Marine Ecosystem Organization” Memorandum of Understanding between NOAA and NSF



CAMEO
COMPARATIVE ANALYSIS OF MARINE ECOSYSTEM ORGANIZATION



Ocean Policy Task Force

PROPOSED VISION & NATIONAL OCEAN POLICY



THE WHITE HOUSE COUNCIL ON ENVIRONMENTAL QUALITY

Interim Report Of The Interagency Ocean Policy Task Force

September 10, 2009



INTERIM REPORT OF THE INTERAGENCY OCEAN POLICY TASK FORCE

PROPOSED NATIONAL POLICY FOR THE STEWARDSHIP OF THE OCEAN, OUR COASTS, AND THE GREAT LAKES

I. Vision

An America whose stewardship ensures that the ocean, our coasts, and the Great Lakes are healthy and resilient, safe and productive, and understood and treasured so as to promote the well-being, prosperity, and security of present and future generations.

II. National Policy Context

The Value of the Ocean, Our Coasts, and the Great Lakes

America is intricately connected to and directly reliant on the ocean, our coasts, and the Great Lakes. Each of us – whether living and working in the country's heartland or along its coasts – affects and is affected by these places. Their beauty inspires us, and their bounty contributes to our national well-being and security. Nearly half of our population is located in coastal counties. Our rich and productive coastal regions and waters account for the great majority of the national economy, totaling trillions of dollars each year, and support distant communities that may not even be aware of the connection between the land and sea. Millions of visitors enjoy our Nation's seashores each year, contributing not only to the economy, but also to personal and communal satisfaction and fulfillment. The sea is both a refuge for spiritual reflection and a powerhouse of excitement for educating students of all ages and interests.

Ocean Policy Task Force

BENEFITS OF CMSP

Aims to maximize benefits of existing and emerging uses while minimizing conflicts and sustaining ecosystem services

Ensures all uses and stakeholders have 'seat at the table'

Creates a greater degree of certainty for investment and development

Streamlines permitting, regulation + governance

Makes decision-making transparent to all

International Engagement

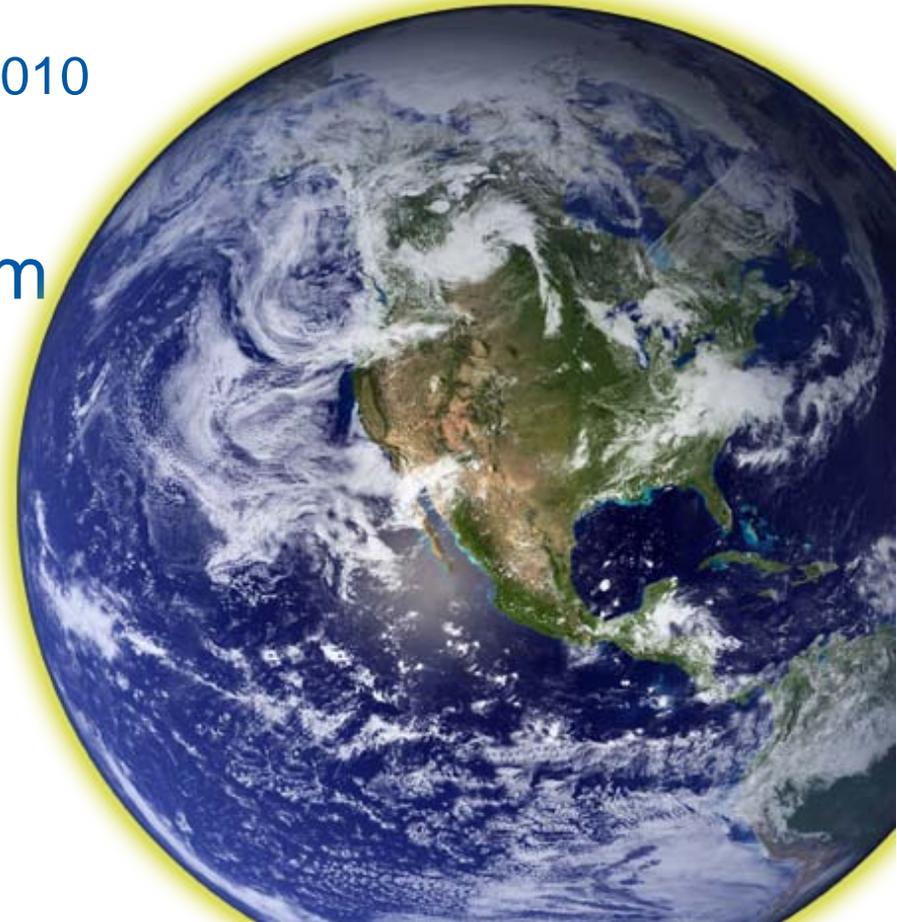


Census of Marine Life

- Coming to a close in October 2010

International Platform for Biodiversity and Ecosystem Services

- Should be a Priority for the United States



THANK YOU



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