

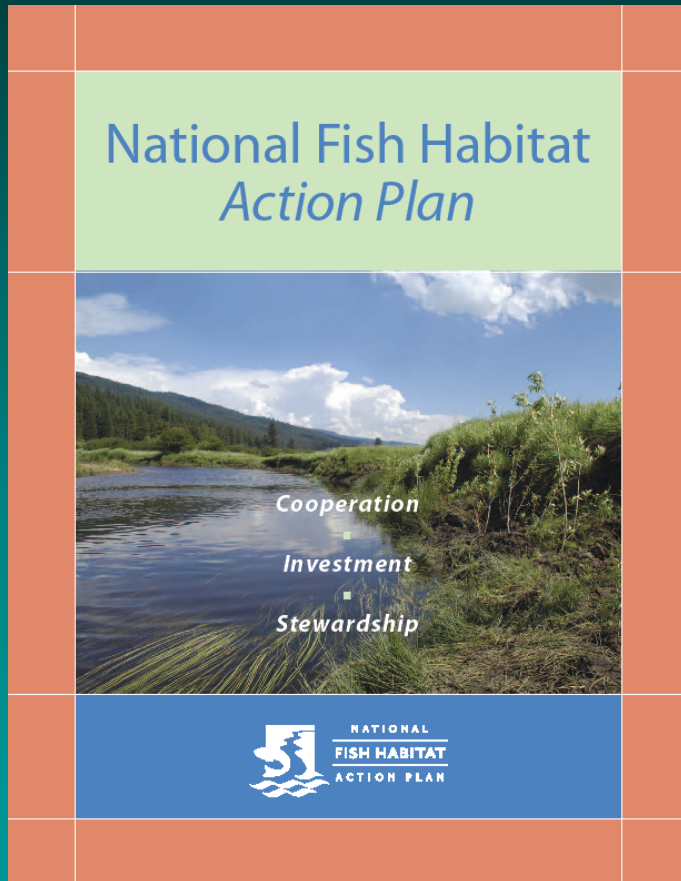
Sustaining Fisheries and Human Communities: Refining the Vision of the National Fish Habitat Action Plan: ACFHP Summary



Paul Pajak, U.S. Fish and Wildlife Service, Hadley, MA
Andrea C. Ostroff, U.S. Geological Survey, Reston, VA

National Fish Habitat Action Plan

MISSION



“...to protect, restore and enhance the nation’s fish and aquatic communities through partnerships that foster fish habitat conservation and improve the quality of life for the American people.”



**SUSTAINABLE FISHERIES
& HUMAN COMMUNITIES**



Where are we?

ASSESSMENT



**Where should
we go?**

PLANNING



PLANNING
&
***PERFORMANCE
MANAGEMENT***

**Did we
make it?**

**EVALUATION &
ADAPTATION**



How will we get there?

IMPLEMENTATION

Symposium Objectives:

- 1) Assess **progress** toward 2006 NFHAP goals
- 2) Examine **scientific efficacy** of 2010 national habitat condition analysis and status report
- 3) Explore efforts of **FHPs** to build on and contribute to a **nationally integrated approach**
- 4) Review major **limiting factors** to sustainable fisheries in North America and implications for the NFHAP
- 5) Provide **insights** to **update 2011 Action Plan**

Where are we?

ASSESSMENT

NFHAP Objectives: 2011 PROGRESS

- ✓ National habitat condition analysis
- ✓ Priority fish habitats identified
- ✓ 17 Fish Habitat Partnerships
- ✓ “Status of Fish Habitats in the U.S.” report
- 5) **Protect** all healthy and intact fish habitats by **2015?**
- 6) **Improve** the condition of **90%** of priority habitats and species targeted by Fish Habitat Partnerships by **2020?**



Where should we go?

PLANNING

“BIG PICTURE” REMINDER: The “Case for Action” in 2006

“Healthy waterways and robust fish populations are vital to the well-being of our society. They provide clean water and sustainable fisheries. They also are vital for less tangible reasons ...”



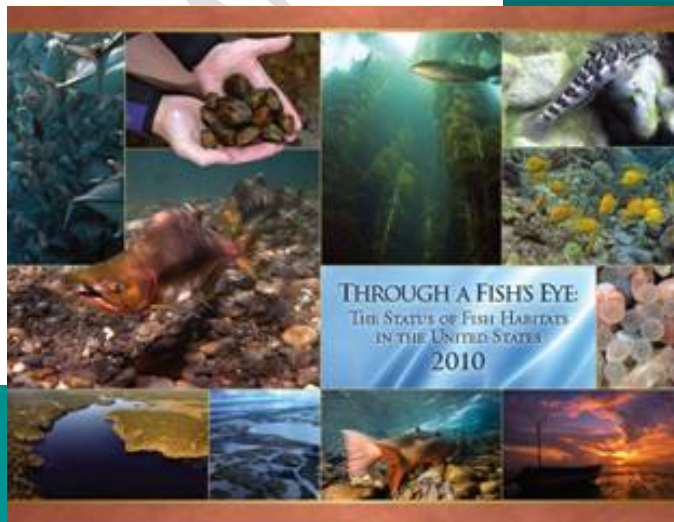
Symposium questions & insights ...

SCIENTIFIC EFFICACY?

National Assessment & Reporting

An initial assessment of relative landscape disturbance levels for river fish habitats of the conterminous United States

Peter C. Esselman^{1,2}, Dana M. Infante¹, Lizhu Wang², Dayong Wu¹, Arthur Cooper^{1,2}, William W. Taylor²

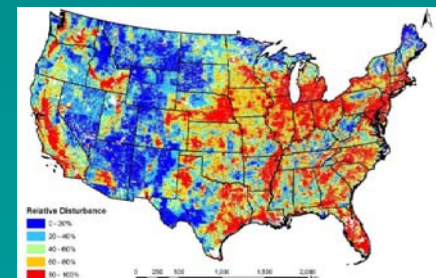


- Not one, but five methods; driven by data availability; AK & HI separate
- Underestimates degradation in some areas
- Need to relate ecological process variables to fish & habitat conditions
- Need additional data & coverage (e.g. NHD+, fish, AK, etc.)
- Improve public access & understanding for decision-making

Regional Fish Habitat Partnerships

NATIONALLY INTEGRATED APPROACH?

- Differences in species/habitat focus; & data availability, quality & methods
- Need agreed upon variables and sampling, data acquisition strategies
- Need greater investment in information science to:
 - bridge local & national assessments
 - improve data sharing & link assets
 - reduce duplicate efforts & costs
 - enhance coordination & targeted implementation
- Need to quantify & validate relationships between inland, estuarine & coastal assessments



Factors Limiting SUSTAINABLE FISHERIES?

Sustainable Management of North American Fisheries



E. Eric Knudsen, Donald D. MacDonald,
and Yvonne K. Muirhead, editors

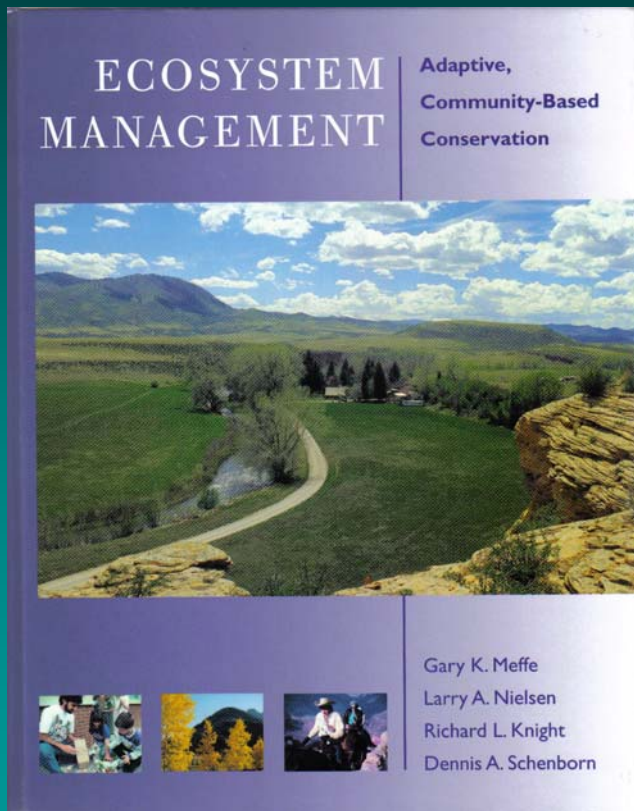
- **Habitat loss, alteration & degradation**
- **Invasive species**
- **Over-exploitation**
- **Urbanization (landscapes & human values)**
- **Competing social priorities**
- **Inadequate decision support**
- **Climate change**

How do we get there?

IMPLEMENTATION



SUSTAINABILITY: A Comprehensive & Unifying Goal?

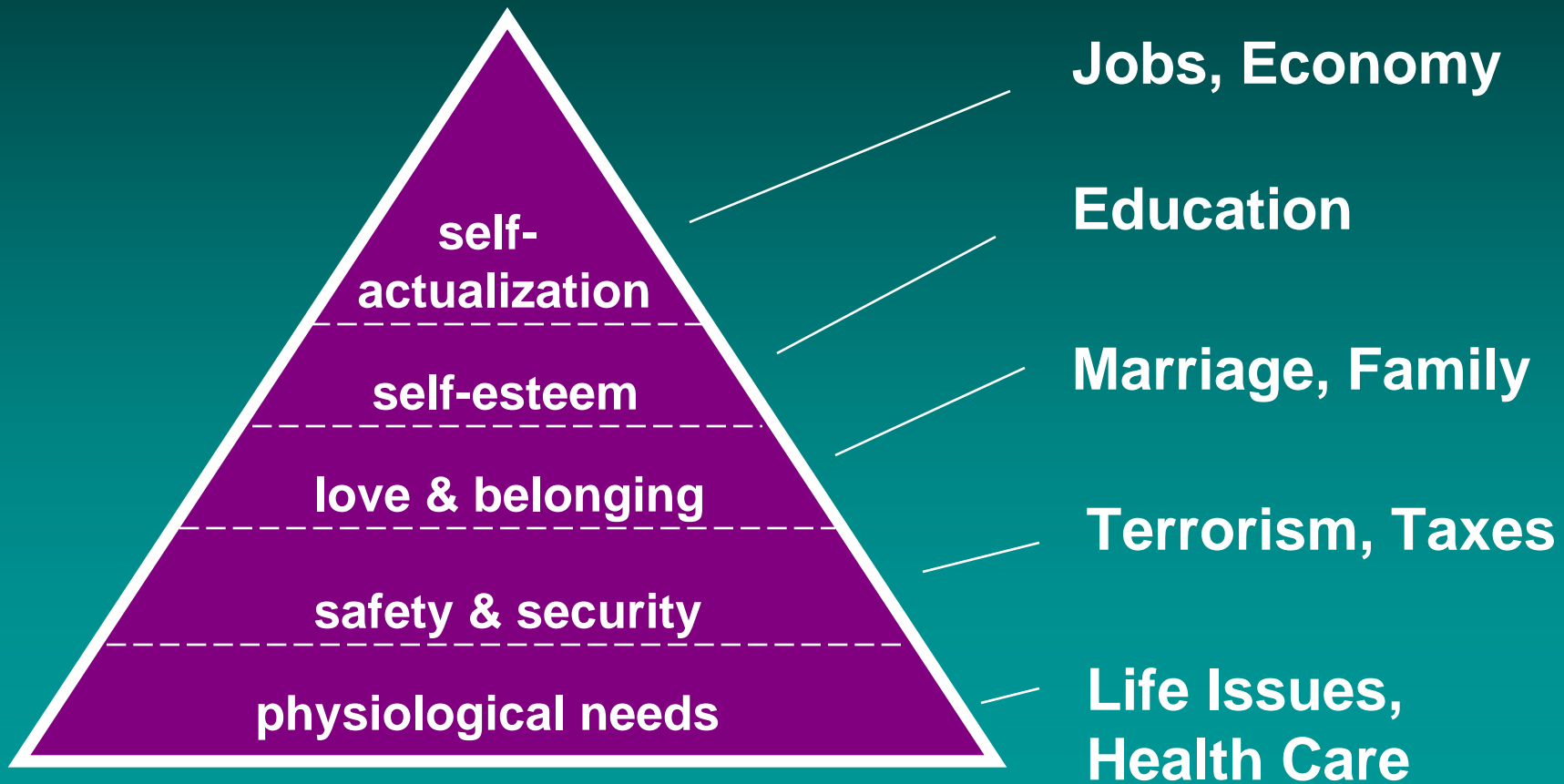


“...to meet the needs of the present generation without compromising the ability of future generations to meet their own needs.”

Brundtland Commission 1987

BASIC HUMAN NEEDS

VOTER ISSUES



??? ENVIRONMENT, FISH ???

FISH & HUMAN ACTIVITY

“Beginning with New England’s first mill dams, ... virtually every human activity in New England has affected brook trout habitat.”

Trout Unlimited 2004

The New England Brook Trout: Protecting a Fish, Restoring a Region

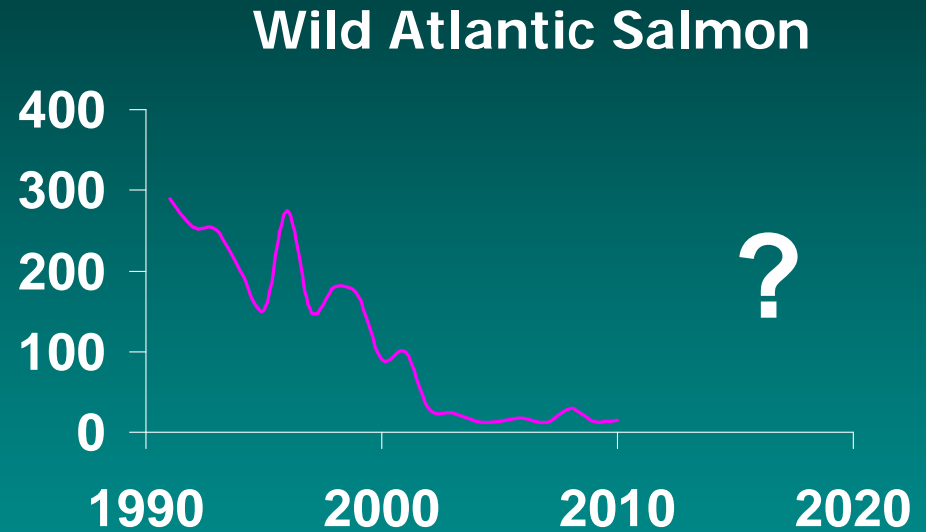


- Sprawl
- Invasive Species
- Water Supply
- Forest Loss
- Air Quality





SUSTAINABILITY? Strategic Role of Fisheries Professionals & the NFHAP?



“Rivers are the lifelines of a continent, reflecting the condition of the surrounding landscape...”
James R. Karr

Did we make it?

EVALUATION & ADAPTATION

MANY ASSESSMENTS !?!

State of the Bay

State of the World

The United States of America
KEY NATIONAL PERFORMANCE INDICATORS FORUM

What Might the U.S. Do to Improve its Approach to Measuring National Performance and Well-Being?

State of the Lake

Lake Champlain Basin Program

THROUGH A FISH'S EYE
The Status of Fish Habitats in the United States
2010

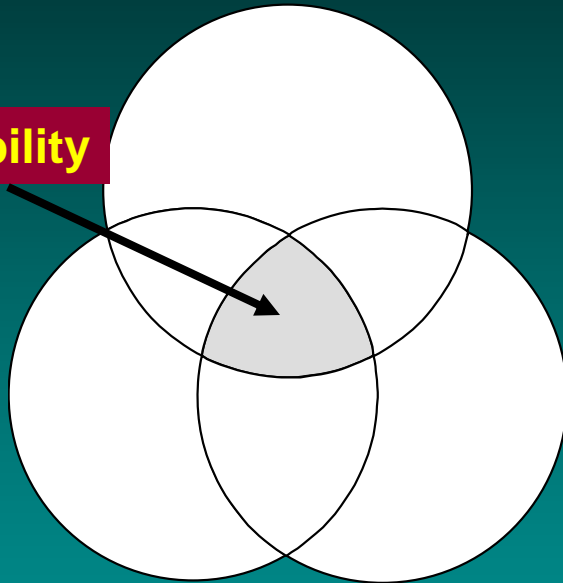


SUSTAINABLE SEATTLE

ECOSYSTEM-BASED MANAGEMENT

INFORMATION PYRAMID

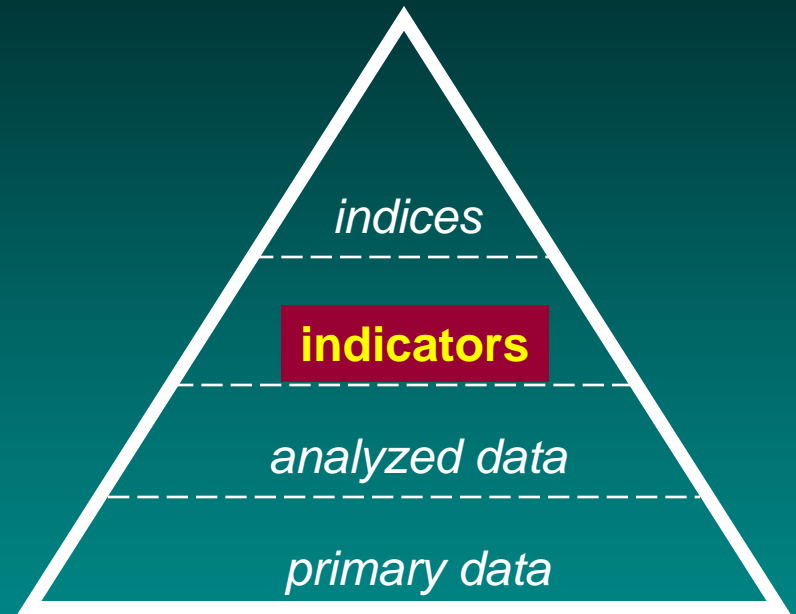
Environment



sustainability

Society

Institutions



indices

indicators

analyzed data

primary data



SUSTAINABILITY INDICATORS

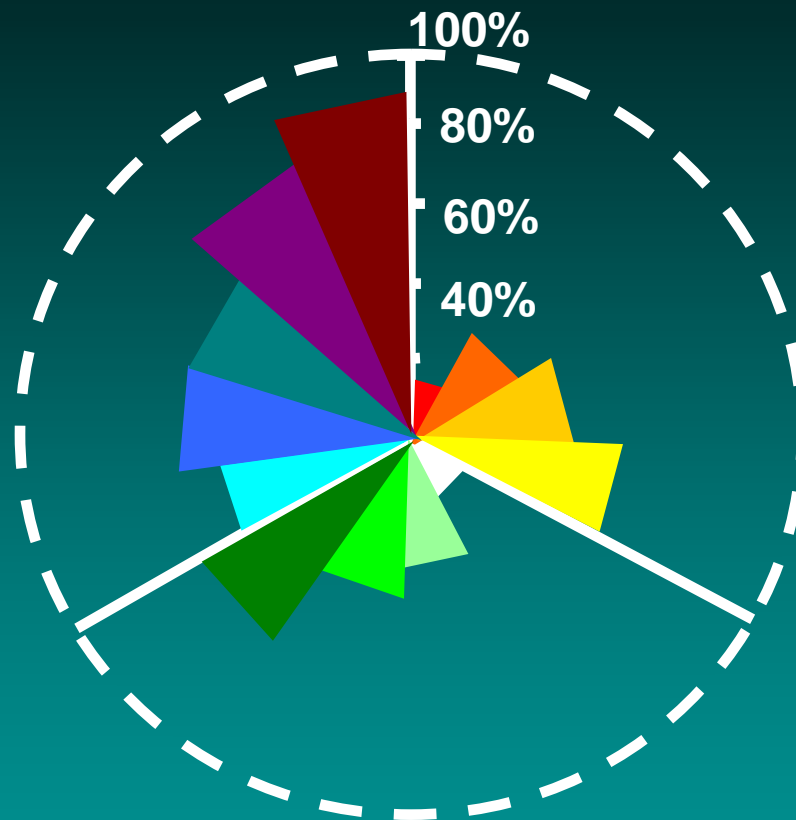
Sustainability-Based "Report Cards"

Society

- self - actualization
- self - esteem
- love & belonging
- safety & security
- physiological needs

Institutions

- results - oriented
- consent - based
- truth - seeking
- adaptable



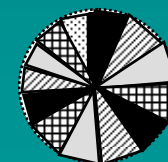
Environment

- disturbance
- diversity
- productivity
- chemical cycling



0%

Increased Sustainability

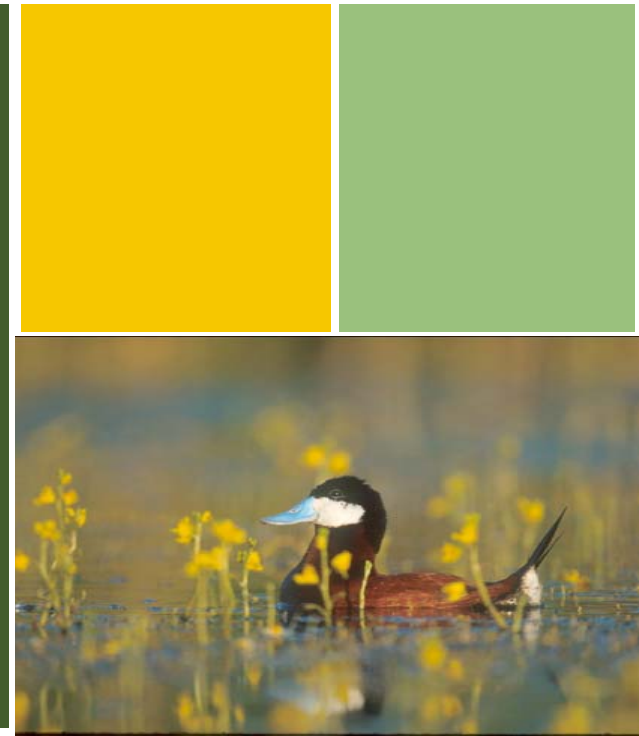


100%

Executive Order 13508

Strategy for

Protecting and Restoring the Chesapeake Bay Watershed



May 12, 2010

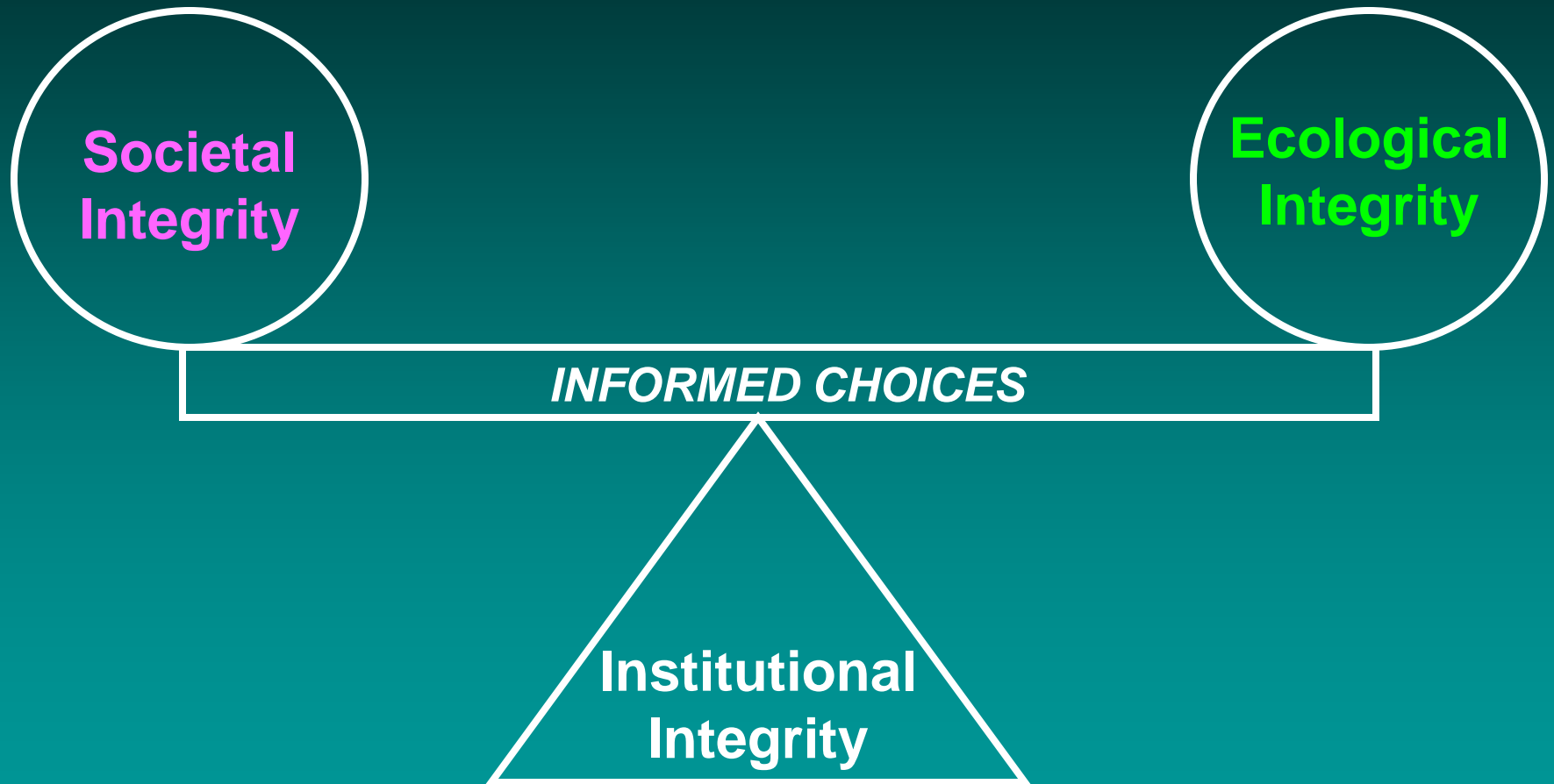


Sustainability "Gap Analysis"

	EBM Domain		Element	CBP Goal	State Indicators	Monitoring	Assessment	Research	Communication Products	Information Management	Model/Forecast
Sustainability	Ecological	Diversity & Productivity	Biodiversity	Fish/Shellfish Abundance	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
				Fish/Shellfish Diversity	Green	Yellow	Yellow	Yellow	Yellow	Yellow	
				Fish/Shellfish Health	Green	Yellow	Yellow	Yellow	Yellow	Yellow	
				Phytoplankton/Zooplankton	Green	Yellow	Yellow	Yellow	Yellow	Yellow	
			Wildlife Abundance	Red	Red	Yellow	Yellow	Yellow	Yellow		
			Wildlife Diversity	Red	Red	Yellow	Yellow	Yellow	Yellow		
			Wildlife Health	Red	Red	Yellow	Yellow	Yellow	Yellow		
			Wetlands	Green	Yellow	Yellow	Yellow	Yellow	Yellow		
		Habitat	SAV	Green	Yellow	Yellow	Yellow	Yellow	Yellow		
			Fish Passage & Streams	Green	Yellow	Yellow	Yellow	Yellow	Yellow		
		Land Use	Impervious Surface	Green	Yellow	Yellow	Yellow	Yellow	Yellow		
			Forest	Green	Yellow	Yellow	Yellow	Yellow	Yellow		
		Chemical Cycling	Water Quality	Nutrients	Green	Yellow	Yellow	Yellow	Yellow	Yellow	
				Sediments	Green	Yellow	Yellow	Yellow	Yellow	Yellow	
				Toxic pollutants	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	
			Air Quality	Particulates	Red	Yellow	Yellow	Yellow	Yellow	Yellow	
				Ozone	Red	Yellow	Yellow	Yellow	Yellow	Yellow	
		CO2	Red	Yellow	Yellow	Yellow	Yellow	Yellow			
		Acidity	Red	Yellow	Yellow	Yellow	Yellow	Yellow			
		Geochemical Processes	Red	Yellow	Yellow	Yellow	Yellow	Yellow			
		Natural Disturbance	Climate Variability	Sea Level	Red	Red	Yellow	Yellow	Yellow	Yellow	
	Water Temperature			Red	Red	Yellow	Yellow	Yellow	Yellow		
	Salinity			Yellow	Yellow	Yellow	Yellow	Yellow	Yellow		
	Rainfall			Yellow	Yellow	Yellow	Yellow	Yellow	Yellow		
	Episodic events		Fire	Red	Yellow	Yellow	Yellow	Yellow	Yellow		
			Hurricanes/Storms	Red	Green	Green	Green	Green	Green		
			Flood	Red	Yellow	Yellow	Yellow	Yellow	Yellow		
	Tides	Red	Green	Green	Green	Green	Green				
	Streamflow/Drought	Red	Yellow	Yellow	Yellow	Yellow	Yellow				
	Societal	Physical Well-being	Human health	Water supply and protection	Red	Yellow	Yellow	Yellow	Yellow	Yellow	
				Food Safety	Red	Yellow	Yellow	Yellow	Yellow	Yellow	
		Safety and Security	Swimable waters	Red	Yellow	Yellow	Yellow	Yellow	Yellow		
		Socioeconomic well-being	Sense of Community	Public Access	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	
Cultural Heritage				Yellow	Yellow	Yellow	Yellow	Yellow	Yellow		
Quality of Life	Education		Red	Red	Red	Red	Red	Red			
security	Red	Red	Red	Red	Red	Red					
Social & economic value	Red	Green	Green	Green	Green	Green					
Institutional	Objective assessment	Sound Science	Red	Yellow	Yellow	Yellow	Yellow	Yellow			
	Consent-based	Partnerships, NEPA	Community Engagement	Green	Green	Green	Green	Green			
	Results-oriented	Shared vision	Accountable	Green	Yellow	Yellow	Yellow	Yellow			
	Adaptable	Red	Yellow	Yellow	Yellow	Yellow	Yellow				

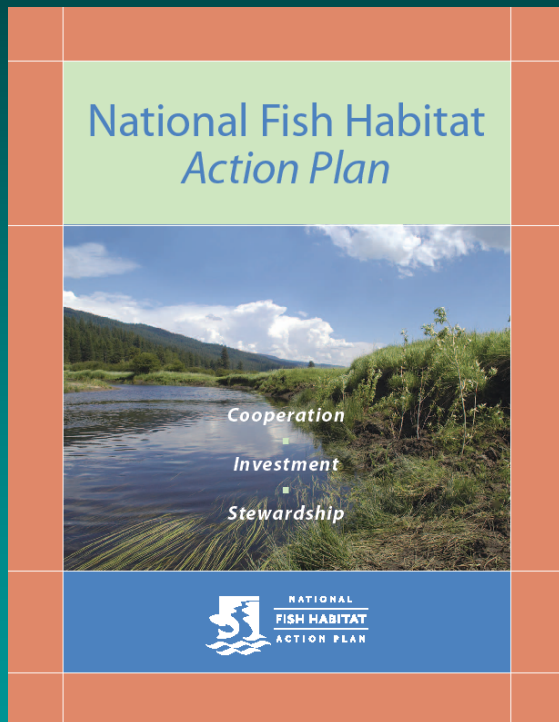


Decision-Support: Balancing Present & Future Needs



2011 Action Plan Update: RECOMMENDATIONS

- Ensure scientifically valid, **standardized & integrated ASSESSMENTS** (spatially, temporally, ecologically)
- Better incorporate ecological & socioeconomic **sustainability** components in future **GOALS** & communication strategies
- Implement & reward efforts that are **OUTCOME-BASED** and mission-aligned
- Improve national & FHP monitoring & **decision-support systems** to ensure timely, long-term **ADAPTIVE MANAGEMENT**
- Eastern Fish Habitat Partnerships (ACFHP, EBTJV, SARP) – **NEXT STEPS?**



References

Pajak, P. 2000. Sustainability, ecosystem management and indicators: thinking globally and acting locally in the 21st century. Fisheries 25 (12):16-30.

Pajak, P. 2004. Elevating social concern for sustainability in fisheries and aquatic resource management. Pages 257-270 in E.E. Knudsen et al., editors. Sustainable management of North American fisheries. AFS Symposium 43, Bethesda, MD.

Meffe, G.K.,L.A. Nielsen, R.K. Knight and D.A. Schenborn. 2002. Ecosystem management: adaptive, community-based conservation. Island Press, DC.