SOCIOECONOMIC OBJECTIVES AND INDICATORS FOR ECOSYSTEM-BASED FISHERY MANAGEMENT

Bering Sea Ecosystem Indicators Workshop
Marine Science in Alaska 2006 Symposium
Anchorage, Alaska
January 25, 2006

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What I mean by “objectives” and “indicators”

	Definition	Biological example	Socioeconomic example	Socioeconomic example
OBJECTIVE	What you are trying to achieve	Maintain predator-prey relationships	Maintain fishing communities	Safety of human life at sea
INDICATOR	Measure of how well you are doing at achieving your objective	Population status of top predator species Trophic level of the catch	Community residents’ share of catches Community residents’ share of fishing privileges (quotas, permits, etc.)	Fishing fatalities Vessel losses

Outline

1. A simple conceptual framework
2. Challenges in developing socioeconomic objectives and indicators for ecosystem-based fishery management
3. What are our current socioeconomic objectives and indicators for ecosystem-based fishery management?
4. Recommendations

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Conceptual Framework:
The Ecosystem and the "Human System"

ECOSYSTEM

- Physical environment
- Species
- Relationships between different species
- Relationships between species and the physical environment
- Human effects on species and the physical environment

EXAMPLES OF FISHERIES-RELATED COMPONENTS

- Target fish stocks
- Stocks of predator and prey species for targeted fish stocks (including birds and mammals)
- Commercial harvests

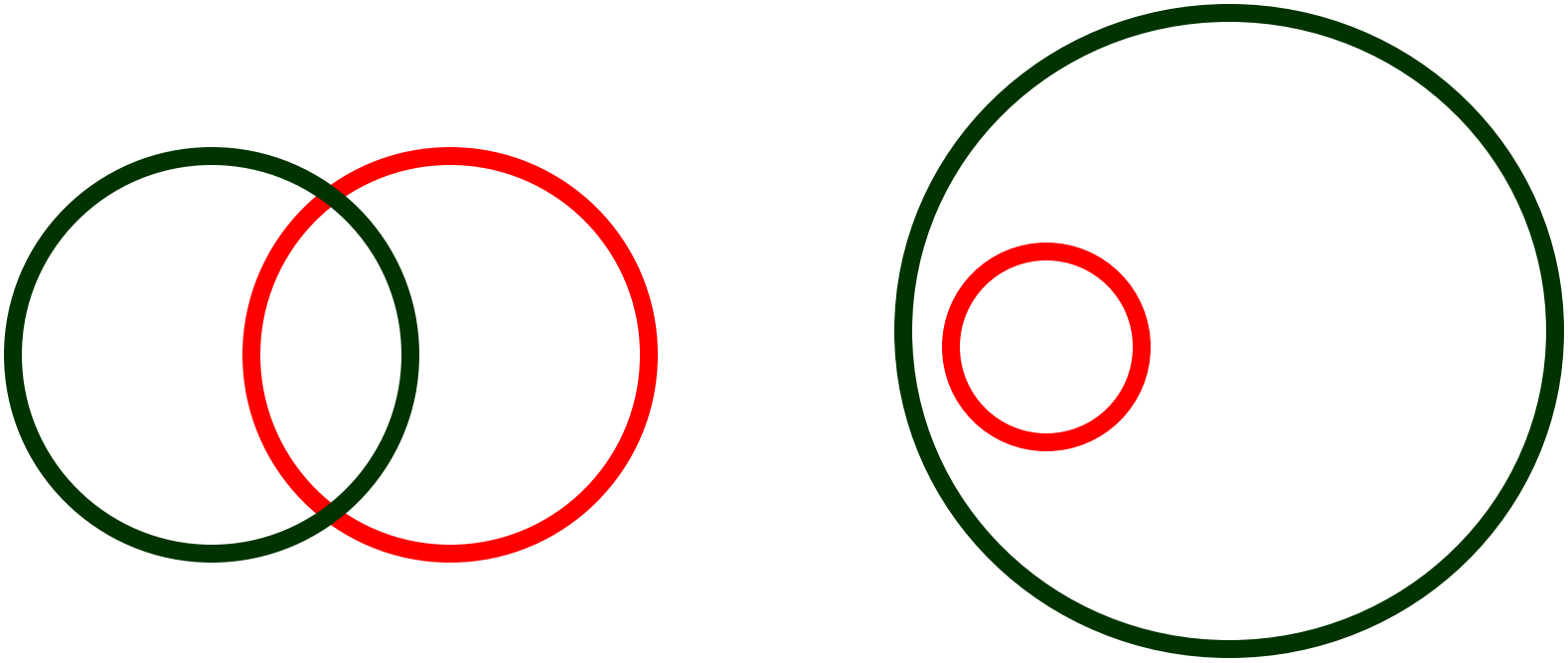
HUMAN SYSTEM

- Economic systems
- Political systems
- Cultural systems
- Population and demographics
- Communities
- Science and technology
- Uses of natural resources

EXAMPLES OF FISHERIES-RELATED COMPONENTS

- *Commercial fishing industry*
- *World fish markets*
- *Fishing technologies*
- *Subsistence traditions*
- *Fishing communities*
- *North Pacific Fishery Management Council*

Potential perspectives on the relationship between the
ECOSYSTEM and the **HUMAN SYSTEM**



Regardless of your perspective:
The ecosystem affects the human system.
The human system affects the ecosystem.

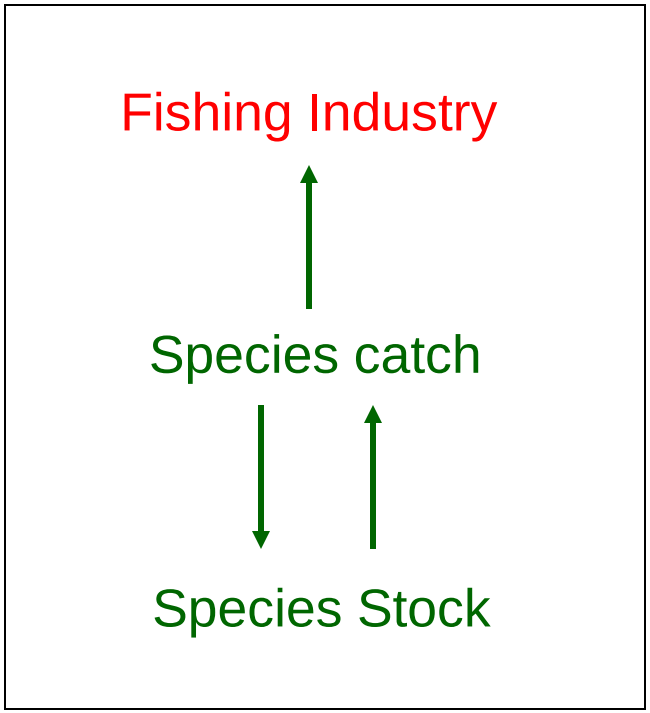
Analogies between the ECOSYSTEM and the HUMAN SYSTEM

- Both systems are very complex
- Interactions between different parts of both systems occur on widely varying geographic and time scales
- Both systems are continuously changing--on many different time scales
- Parts of the both systems are “stable” and parts are “unstable”
- Our understanding of both systems is very limited
- Our ability to measure both systems is very limited
- Our ability to control both systems is very limited
- What is “good” for an individual is not necessarily “good” for a group or for the system

NAÏVE FISHERIES MANAGEMENT

Objective: Maximize benefits to fishing industry

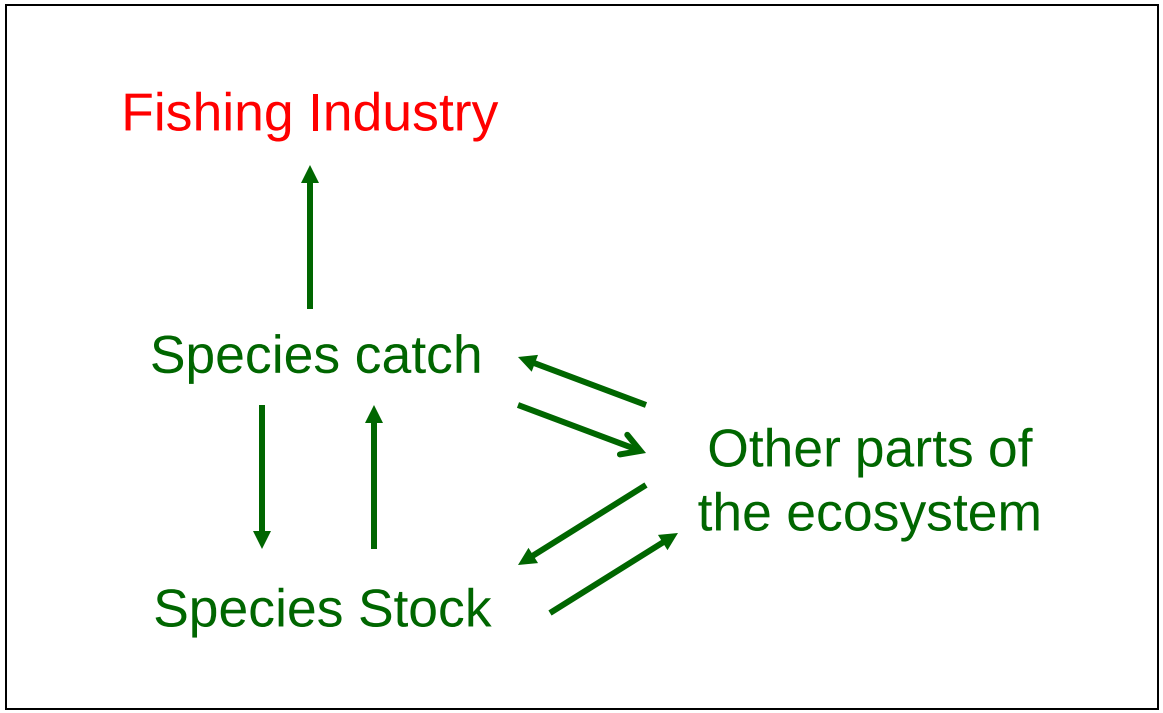
Objective: Keep stock at level which maximizes benefits to fishing industry



NAÏVE ECOSYSTEM-BASED FISHERIES MANAGEMENT

Objective: Maximize benefits to fishing industry

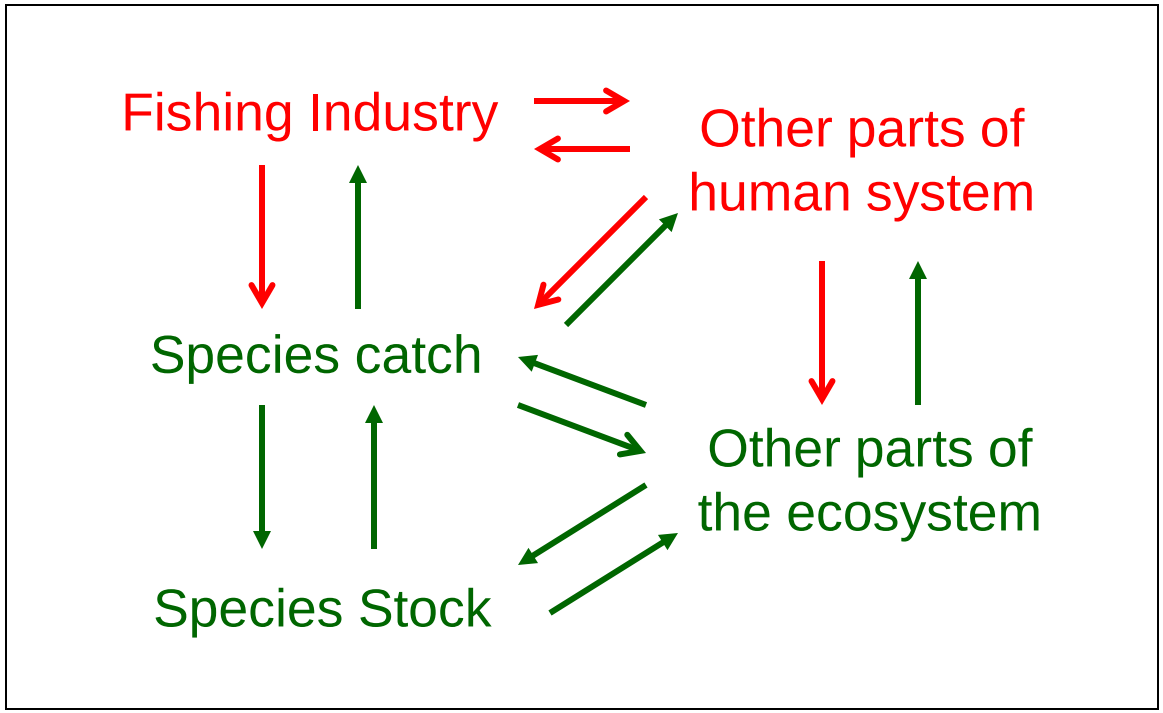
Objective: Use ecosystem to maximize benefits to fishing industry



ECOSYSTEM-BASED FISHERIES MANAGEMENT

Objective: Maximize human benefits

Objective: Use ecosystem to maximize human benefits



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Biological objectives may conflict with socioeconomic objectives.

- Stock rebuilding vs. maintaining a fishery-dependent community
- Protecting “bycatch” species vs. valuable catches of target species

Socio-economic objectives may conflict with each other

- Employment conflicts with profitability
- Some peoples' "costs" are other peoples' livelihoods
  - Effects of crab rationalization on fishing jobs
  - Effects of crab rationalization on fuel dealers
- Protecting current users against effects of change vs. allowing the system to become stronger by changing

Every part of the fishery management process is inherently political.

- Different groups have different interests
  - Allocation between different user groups
  - Consumers (cheaper prices) vs. producers (higher prices)
  - Commercial fishery participants vs. other
- Different people have different personal values about what objectives are important
- The current generation has different interests than future generations

- People have an interest in influencing the management process at every level in any way they can—including the definition of objectives and indicators

Just as we have a limited ability to control the ecosystem, we have a limited ability to control the human system.

- We may not be able to sustain all fishing communities
- We may not be able to make all fisheries or fishermen economically successful
- The human system—and our ability to achieve socioeconomic objectives—is affected by many factors beyond our control
  - Market forces
  - Political forces
  - Demographic change
  - Cultural change

We don’t have good data to measure many objectives

- People are difficult to measure
- People don’t like to be measured
- Collecting data costs money
- We don’t have a tradition of collecting socioeconomic data for fisheries

Relationships within the human system are not necessarily geographically adjacent

- The people affected by fisheries management decisions do not necessarily live or work near those fisheries
  - Non-local fishermen and processing workers
  - Fisheries transportation and distribution
  - Fish consumers
- Market effects are transmitted and experienced world-wide
- We do not agree as a society about where we should draw the geographic lines about who matters and who doesn't matter
  - Locally? Regionally? Nationally? Globally?

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There is no clear national consensus on socioeconomic objectives for fisheries management—or the relative importance of different objectives.

- The national standards of the Magnuson-Stevens Act provide a start at defining some objectives

- The Alaska Groundfish Fisheries Final Programmatic Supplemental Environmental Impact Statement (June 2004) takes us futher towards defining socioeconomic objectives—but doesn't provide a clear guide for some of the most difficult socioeconomic choices we face

Socioeconomic objectives implicit in the Magnuson-Stevens Act National Standards

- Fair and equitable allocation of fishing privileges
- Consider efficiency in the utilization of fishery resources
- Minimize costs and avoid unnecessary duplication.
- Encourage sustained participation of fishing communities
- Minimize adverse economic impacts on fishing communities
- Promote safety of human life at sea

- No discrimination between residents of different States
- No excessive shares of fishing privileges
- No measure shall have economic allocation as its sole purpose.

Socioeconomic objectives in the Groundfish SEIS . . .

To meet the goals of this overall management approach, the NPFMC and NOAA Fisheries will use the PSEIS as a planning document. To help focus its consideration of potential management measures, it will use the following objectives as guideposts to be re-evaluated as amendments to the FMP are considered over the life of the PSEIS.

. .

Socioeconomic objectives in the Groundfish SEIS . . .

Promote Sustainable Fisheries and Communities:

6. Promote conservation while providing for optimum yield in terms of providing the greatest overall benefit to the nation with particular reference to food production, and sustainable opportunities for recreational, subsistence and commercial fishing participants and fishing communities.

7. Promote management measures that, while meeting conservation objectives, are also designed to avoid significant disruption of existing social and economic structures.

8. Promote fair and equitable allocation of identified available resources in a manner such that no particular sector, group or entity acquires an excessive share of the privileges.

9. Promote increased safety at sea.

Socioeconomic objectives in the Groundfish SEIS . . .

Promote Equitable and Efficient Use of Fishery Resources:

31. Provide economic and community stability to harvesting and processing sectors through fair allocation of fishery resources.

32. Maintain LLP program and modify as necessary, and further decrease excess fishing capacity and overcapitalization by eliminating latent licences and extending programs such as community or rights-based management to some or all groundfish fisheries.

33. Provide for adaptive management by periodically evaluating the effectiveness of rationalization programs and the allocation of access rights based on performance.

34. Develop management measures that, when practicable, consider the efficient use of fishery resources taking into account the interest of harvesters, processors, and communities.

Selective Groundfish SEIS objectives

- Provide economic and community stability to harvesting and processing sectors through fair allocation of fishery resources.
  - *How do you measure what is "fair"?*
- Develop management measures that, when practicable, consider the efficient use of fishery resources taking into account the interest of harvesters, processors, and communities.
  - *How do you measure "the interests of communities"*

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Socioeconomic objectives and indicators are important.

- Even though it's difficult, we really should try to think carefully about and define—as best possible—what are objectives are and what indicators we can use to measure how well we are doing.
- Even though it's difficult, we should try to collect useful data for these indicators.

We should not pretend that inherently political choices—including choosing socieconomic objectives for fisheries--can be made "scientifically"

- Scientists should carefully draw the line between their scientific expertise and their political value judgments
  - Scientists can tell us the implications of our management choices
  - Scientists cannot tell us what choices are best
  - When they attempt to do so they risk their credibility as scientists
- Economists do not have a "correct" answer about what our socioeconomic objectives should be
  - Economists tend to believe in"efficiency" and "maximizing net value"
  - Efficiency and maximizing net value don't not necessarily trump other socio-economic objectives (for example, fairness)

What really matters—more than objectives and indicators—are the institutions which establish the objectives, interpret the indicators, and make the management decisions.

- We need institutions which have the ability to make difficult decisions about socioeconomic tradeoffs
  - Based on good information and analysis
  - In a timely way
  - Cost-effectively
  - Fairly
  - Constitutionally and legally