

The Role of Economics in Salmon Resource Management

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What I was asked to talk about today

- Who benefits from salmon fisheries, and how?
 - *Where does the money go?*
- How are salmon values likely to change in the future?
- What are strategies to increase regional economic benefits from salmon harvests?
- What are the trade-offs between long-term benefits from salmon and short-term benefits from other kinds of development?
- Can economics help in improving salmon management?
 - *in managing habitat better?*
 - *in increasing harvest opportunities?*

These are big questions!

- It would take a long time to discuss them in detail.
- I haven't done any specific research on these questions as they relate to Copper River salmon.
- What I will try to do is:
 - Talk about what economics can and can't do
 - Talk about how economics might address these questions
 - Suggest a few answers to a few questions

Presentation Outline

1. Descriptive and Prescriptive Economics
2. Economic Benefits of Fisheries Resources
3. Measuring “Non-Market” Values of Fisheries
4. Strategies for Maximizing Regional Economic Benefit from Fisheries
5. How are Salmon Values Likely to Change in the Future?
6. Trade-offs between long-term benefits from salmon and short-term benefits from other kinds of development
7. Can Economics Lead to Better Fisheries Resource Management?

1. Descriptive and Prescriptive Economics

Descriptive and Prescriptive Economics

- Economics may be divided into “descriptive” and “prescriptive” economics.
- Descriptive economics (also called “positive” economics) attempts to describe and explain economic behavior
 - *Why did fisheries business tax revenues go down?*
 - *Why did the sport catch of salmon increase?*
- Prescriptive economics (also called “normative” economics) makes policy recommendations for achieving economic goals
 - *Should we raise the fisheries business tax rate?*
 - *Should the allocation to sport fishermen be increased?*

Prescriptive economics makes policy recommendations for achieving economic goals.

- Prescriptive economics is always based—explicitly or implicitly—on an assumed economic goal.
- Beware of economists making recommendations!
 - Closely examine their assumed economic goals
 - Their recommendations are only relevant if you share their goals
 - There is no reason why you necessarily should share their goals
 - Economic goals are inherently value judgments
 - Economists' value judgments about what our economic goals should be are not necessarily any better than anyone else's

Economists have personal values like anyone else about what economic goals are important. They may or may not be the same as your goals.

- Not all economists share the same personal values.
 - Some are very “conservative”
 - Some are very “liberal”
- Economists are often taught—and come to believe—that “efficiency” is an important goal, or even the most important goal.
 - Not all economists believe this, but many act as if this were a commonly held goal which does not need to be explicitly stated
- Some economists (including myself) believe that other goals including “fairness” are as important or even more important than efficient

Decision tree for evaluating economic analysis

Before you use “economic” results, ask yourself these questions:

Is the analysis descriptive or prescriptive?	DESCRIPTIVE: Is the analysis done well?	YES-Use it		
		NO-Don't use it.		
	PRESCRIPTIVE: Is the goal explicitly stated?	YES: Do you share the explicit goal?	YES: Is the analysis done well?	YES-Use it
				NO-Don't use it.
			NO: The analysis may be technically well done, but it is irrelevant to you. Don't use it.	
		NO: What is the implicit goal? Do you share it?	YES: Is the analysis done well?	YES-Use it. But realize that it was misleading not to state the goal explicitly
	NO-Don't use it.			
	NO: Even if the analysis is technically well done, it is irrelevant to you <u>and</u> misleading.			

This decision tree applies to all “science,” not just economics. But there is a greater divergence of opinion about goals in economics than in many other sciences.

2. Economic Benefits of Fisheries Resources

Fisheries resources provide a wide variety of economic benefits,
for example:

- Ecological benefits
 - *Role of salmon in ecosystem supports other ecosystem benefits*
- Role in cultural traditions
- Recreation
- Food
- Jobs and Work Income
 - *Commercial fishing*
 - *Fish processing*
 - *Guiding*
 - *Other industries as income circulates through economy*
- Asset Value
 - *Boats, businesses, entry permits, IFQ's*

It is difficult to quantify and/or add up some of the economic benefits of fisheries resources.

- They are measured in different units
- Some are difficult to measure at all
- They go to different people
- They occur on different time scales

There ARE ways to add up different kinds of fisheries values. But the starting point for any good analysis is to quantify each kind of benefit in its own terms.

3. Measuring “Non-Market” Values of Fisheries

Economists do care about “non-market” benefits of fisheries, and have devised ways to estimate their value in dollar terms.

- “Recreation” or “fun” or “satisfaction” are examples of “non-market values.”
 - *The fun I derive from sport-fishing*
 - *The satisfaction I derive from commercial fishing work*
- Economists have tried to estimate non-market values (in dollars) because they believe:
 - *Non-market values “matter” and should be considered*
 - *If we don’t measure non-market values, they may be ignored or considered less than they should be*
- Methods of valuing non-market benefits are
 - *Critically dependent on the technical definition of “value”*
 - *Often not very precise*
 - *Often expensive to carry out*

“Mainstream” economists’ technical definition of “value” is “willingness to pay.”

- The value of “market” goods (which are bought and sold) is what we observe that people do pay for them.
 - What a processor pays for a fish
 - What a fisherman pays when she buys a boat
 - What I pay for a fish dinner in a restaurant
 - What a tourist pays for a guided fishing trip
- The value of “non-market” goods (which are not bought and sold) is what people would be willing to pay if they had to pay for them.
 - Economists have come up with several ways of inferring or estimating what people would be willing to pay for non-market goods.

The problem with defining “value” as “willingness to pay.”

- Willingness to pay depends on who has how much money.
 - The value of viagra is “high” because there are lots of rich Americans who are willing to pay a lot for it—because they have a lot of money.
 - The value of a cure for malaria is “low,” because even though there are lots of poor Africans who would like to be cured, they don’t have a lot of money and therefore can’t pay a lot for a cure for malaria.
- The value of our great-grandchildren being able to enjoy the same fisheries resources we enjoy may be “low” unless we are willing to pay for preserving those resources. When they get here they may place a lot of value on them—but they’re not here and willing to pay for them right now.

When you see economists’ estimates of non-market values, ask yourself if you agree with their definition of “value.”

Methods of measuring “willingness to pay.”

- “Contingent valuation” method
 - Ask people, directly or indirectly, what they would be willing to pay
 - *Example: Exxon Valdez spill studies*
 - *Example: Coral reef values study*
- “Travel cost” method
 - Infer value from extra costs people are willing to incur to enjoy non-market benefits

These methods can both cost a lot of money and are not necessarily very accurate.

Estimating non-market values of fisheries raises issues.

- Are the estimates worth the cost of getting them?
- Do the estimates tell us what we want to know?
- BUT: What is the alternative?
 - *Are we better off without attempting to measure non-market values?*
 - *Do values which are not measured get less attention and consideration?*

4. Strategies for Maximizing Regional Economic Benefit from Fisheries

What are strategies to increase regional economic benefits from salmon harvests?

1. Maximize regional control of or involvement in management decisions.
 - The more control regional residents have over management decisions, the more likely management is to follow strategies which will benefit the region.
 - Even if they don't control management decisions, the more residents participate in processes that affect their fisheries (Board of Fisheries, North Pacific Fishery Management Council) the more they likely their concerns are to be heard and addressed.
 - Seek regional consensus: you will be more effective in the state and federal arenas

What are strategies to increase regional economic benefits from salmon harvests?

2. Pay very close attention whenever “fishing privileges” or “rights” or “quotas” are created.

OPPOSE:

- Any creation of permanent fishing privileges or rights unless you are sure that
 - They will go predominantly to local residents
 - They won't migrate out of the region
 - They will benefit the region

SUPPORT:

- Allocations to regional residents
- Allocations to communities within the region
- Restrictions on transfers of privileges or rights outside the region.
- Restrictions on fishing privileges designed to ensure regional benefits
 - *Tying allocation privileges to where people live*

What are strategies to increase regional economic benefits from salmon harvests?

3. Tax fisheries related activities

- Particularly those which:
 - Are mainly engaged in by non-local residents
 - From which the benefits flow mainly outside of the region

5. How are salmon values likely to change in the future?

Outlook for commercial fishery values

- Negative factors
 - Competition from aquaculture depressing prices
 - Globalization squeezing resource producers
 - Competition from low-labor cost regions (China)
- Positive factors
 - Negative reactions to aquaculture
 - Growing demand for wild salmon
 - Globalization raising consumer incomes
 - Globalization providing new market opportunities
- The outlook depends partly on what we do
 - It depends on how we manage the resources
 - It depends on whether we take advantage of market opportunities

Outlook for Recreational Fishery Values

- Increasing demand for recreational fishing
 - Increasing Alaska population
 - Increasing global demand for recreational fishing
 - Fewer and fewer recreational fishing alternatives in other places
 - Continuously increasing potential value from recreational fisheries
- The outlook depends on what we do
 - What kind of recreational fishing do we allow
 - By whom?
 - When?
 - Where?
 - How much recreational fishing do we allow?

6. Trade-offs between long-term benefits from salmon and short-term benefits from other kinds of development

7. Can economics lead to better resource management?

Over time, I expect the potential relative value of recreational uses of salmon fisheries resources to increase relative to commercial uses.

- We face two interrelated challenges:
 - How can we drive the maximum value
- Suppose a virgin fishery, what would you do with it?
 - 100 years ago: Put it in a can
 - 100 years from now: selectively auction off sports fishing privileges
- But who GETS the value matters

Outlook for Recreational Fishery Values

- Increasing demand for recreational fishing
 - Increasing Alaska population
 - Increasing global demand for recreational fishing
 - Fewer and fewer recreational fishing alternatives in other places
 - Continuously increasing potential value from recreational fisheries
- The outlook depends on what we do
 - What kind of recreational fishing do we allow
 - By whom?
 - When?
 - Where?
 - How much recreational fishing do we allow
- Meat value vs. other values shifting
- Income potential alone:
 - Suppose a virgin fishery, what would you do with it?
 - 100 years ago: Put it in a can
 - 100 years from now: selectively auction off sports fishing privileges
- But who GETS the value matters

A classic issue is when an economic development project with short-term non-sustainable economic benefits (such as a mine or timber harvest) threatens a fishery with long-term sustainable economic benefits?

How can economics help us understand this kind of choice?

- If you want to provide justification for choosing the “sustainable” alternative, economics may or may not help.

Comparing costs and benefits that occur over different time scales is a common and standard problem in economics.

- Ferry-boat vs. bridge
- Investment
- Costs and benefits . . .
 - Year 1
 - Year 2
 - Year 3
 - TABLE
- Two choices
 - Year 1, year 2, year 3

Comparing benefits at different points of time

- Time matters!
- Sooner is more valuable
- Which lottery choice to people take?
 - \$10 million now vs . . . later
 - Discounting
- We prefer to have things sooner
- If we have them sooner we can invest and get more in the future
- (There's a flaw in this argument, which I'll return to)

The perils of discounting

- Long-term is not infinite value
- It's actually just A/r
- Because if you put \$ in bank

Killing the golden goose

- But we don't like that argument! That's the wrong result!

So long-term “sustainable” doesn’t necessarily “win” over short-term “non-sustainable” in classic economics

Responses

- Wrong discount rate
- Values are underestimated
- It's more than the \$
- Ethical responsibility for sustainability
- It's an inherently political issue which economics can't solve
- It's a value-judgment issue
- It's a choice between generations
 - What will our grandchildren wish we had done?
 - What is our responsibility to them?

Long-term sustainable vs. short-term one-time: My advice

- What are the *actual* tradeoffs:
 - It's the change in value, not the total value
- What are all the values and all the costs
- Don't accept blind discounting!
- Look very carefully at the interest rate
- Not just OUR interest
- What will our children and grandchildren wish we had done?

The politics of
fisheries
economicsPOLITICS

Practical politics of economics

- Innumerable political issues
- Economics can help make your case
- Need to protect yourself against others
- Allocation:
 - Uses of fish
- Resource management
 - Fish vs. other resources
 - Value of research
 - Value of fisheries management
- People listen to \$
- Can you make people really see their stake?

Can economics help in improving salmon management?
Can economics help us in managing habitat better?
Can economics help us in increasing harvest opportunities?

- Practical politics answer
- Institutional design answer
 - Design of agencies
 - “incentives matter”
 - Pay biologists well
 - Consider payoffs to investments in research, management
 - Pay people for salmon escapement?
 - For salmon runs?

Practical politics of economics

- Doesn't help you with biological decisions very much
- Doesn't tell you the right escapement
 - May perhaps tell you how much you care about a particular fish stream, but . . .

CAN help you think about better institutions

- The REAL lesson of the Chignik Co-op
- People talked about co-op as an economic tool
- Fantastic biological tool
- Gave manager absolute control, ability to fine-tune
- Incentives matter!
 - Think broadly
 - Can you give people a stake in good habitat management?
 - Can you give people a stake in long-term resource health?
 - Tie benefits to resource users