Economic Comparisons of Commercial and Sport Fisheries: Measures, Things to Keep in Mind, and Potential Misuses

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Who I Am and Why I am Testifying

- I am a professor of economics at the UAA Institute of Social and Economic Research (ISER). I've been studying economic issues related to Alaska fisheries for many years. I also teach a course at UAA on the Alaska economy, and will be teaching a new online course (beginning September 2008) on "An Introduction to Fisheries Economics and Markets."
- I'm currently engaged in a research project (funded by the Alaska Sea Grant program) on what kinds of economic information exists and does not exist for Alaska's commercial, sport and subsistence fisheries.
- I'm testifying today because Rep. Craig Johnson, co-chair of the Task Force, asked me to testify and provide the task force some background information about what kinds of economic data are available for Cook Inlet salmon fisheries and what they mean.
- I'll testify again next week in Wasilla about "Economic Impacts and Net Economic Value of Cook Inlet Commercial and Sport Salmon Fisheries: What We Know and What We Don't Know."
- I'm available to assist the Task Force over the next few months in providing additional economic information or data if it would be helpful to you.
- I'm not taking any position on any of the issues which the Task Force is addressing.

Commercial and Sport Fisheries
What They Produce and Who the Consumers and Producers Are

	Commercial fisheries	Sport fisheries
What the fishery produces	Fish	Angling experience Aesthetics Fishing Catching fish Fish
Consumers	Fish consumers	Sport fishermen
Producers	Commercial fishermen Processors Fish transportation industries Distributors Retailers Restaurants	Independent anglers Charter operators Lodges Passenger transportation industries
Production measures	Number of fish	Number of fishing trips Number of fishing days Number of fish

How can we measure the economic contributions of a fishery?

	Economic impact	Net economic value
Definition	How the fishery affects the economy	What people would be "willing to pay" for what the fishery produces, minus the costs of production

Examples of measures	Number of jobs
	$ of income
	$ of tax revenue
		$ of net value

How hard is it to understand the concept?	Relatively easy	Relatively hard
How hard is it to calculate the measures?	Relatively easy	Relatively hard
How much data do we have?	Some	Less

How economists define “value” . . .

- The value of a product or experience is what someone would be willing to pay for it—regardless of whether they actually do pay for it.

HYPOTHETICAL EXAMPLES:

- The value of my beat-up old car is $2300, because that’s what I could sell it for
- The value of a ticket to the Elton John concert in Anchorage is $500 because that’s what some people would be willing to pay for a ticket, even if the official ticket price is $65*
- The value of a day of cross-country skiing at Kincaid Park in Anchorage is probably at least $20, even though people can ski there for free—because that’s what people pay for that kind of skiing in other places

**I made these Elton John concert prices up for the purposes of the example. I have no idea what the actual prices were or what people would have been willing to pay for tickets!*

“Total Value” vs. “Net Value”

- Total value is consumers’ total willingness to pay.
- Net value is consumers’ total willingness to pay minus the cost of producing the product or experience.

- Economists often argue that net value is the most useful and important measure of the economic contribution of an industry—for the same reason they argue that profits are a more useful measure of how a business is doing than gross revenues.

Contrasting “Economic Impact” and “Net Economic Value”
Effect of Using More Workers

Measure	Effect of more workers	Change in the measure
Economic impacts	Increases number of jobs Increases wage income	Increases economic impact
Net value	Increases costs	Reduces net value

Note that “greater economic impact” doesn’t necessarily mean greater net economic value. It might mean less net economic value.

More broadly, our public policy goal shouldn’t necessarily to maximize economic examples. For example, suppose we are building a new road. We could maximize economic impacts such as employment by requiring that the road be built with manual labor (pickaxes and shovels and wheelbarrows) rather than bulldozers. But that might not be the best choice from other perspectives, such as getting the cheapest or best-constructed road.

Here is a simplified hypothetical example of how we might calculate "net value" for a sport fishing day. One thing that makes it difficult is that we can't directly observe an angler's "willingness to pay" for a sport fishing day. Economists have ways of estimating willingness to pay, but they require a lot of data and aren't all that precise.

Hypothetical Net Value Calculation for a Sport Fishing Day

		Costs and Revenues	Net value	Are data collected on a regular basis?
Angler	Angler's willingness to pay	$600		E
	Angler's payment to gas station	$50		No*
	Angler's payment for guide service	$250		No*
	Angler's net value		$300	
Gas Station	Gas station revenue	$50		
	Gas station costs	$40		No
	Gas station net value		$10	
Guide service	Guide service revenue	$250		
	Guide service costs	$100		No
	Guide service net value		$150	
Total			$460	

E: Can't be observed--can only be estimated

*ADFG has a study underway which is intended as the first of a regular data collection effort.

Note: This simple example doesn't adjust for what portion of value may be going to non-resident anglers or guides.

Here is a simplified hypothetical example of how we might calculate "net value" for a commercially caught fish. One thing that makes it difficult is that we can't directly observe a consumer's "willingness to pay" for a fish. But in general that's less of an issue for commercial fisheries, partly because consumers pay for the fish, and partly because most of the consumers are non-residents.

Hypothetical Net Value Calculation for a Commercially Caught Fish

		Costs and Revenues	Net value	Are data collected on a regular basis?
Consumer	Consumer's willingness to pay	$6.00		E
	Consumer's payment to store	$5.00		No
	Consumer net value		$1.00	
Store	Store's revenue	$5.00		No
	Store's payment to processor	$2.40		Yes
	Store's other costs	$2.00		No
	Store's net value		$0.60	
Processor	Processor revenue	$2.40		
	Processor payment to fisherman	$1.50		Yes
	Processor's other costs	$0.60		No
	Processor net value		$0.30	
Fisherman	Fisherman revenue	$1.50		
	Fisherman costs	$1.00		No
	Fisherman net value		$0.50	
Net value			$2.40	

E: Can't be observed--can only be estimated

Note: This simple example doesn't adjust for what portion of value may be going to non-resident consumers, stores, processors or fishermen.

Here are some important things to keep in mind when thinking about economic impacts and net values of commercial and sport fisheries, and using estimates that exist for what these impacts and values are:

- Not all economic impacts or benefits go to residents.
- You may not be interested in all economic impacts or benefits.
- How fisheries are managed affects their economic impacts and value
- Public investments affect fisheries' economic impacts and value
- Even if catches and allocations stay the same, economic impacts and value can change significantly from year to year
- Economic impacts and value aren't necessarily proportional to fish catches
- The effect of catching one more fish on economic impacts and value isn't necessarily the same as average impact and value

Comparing Commercial and Sport Fishing Economic Impacts and Values
How to Misuse Economics

- Compare economic values with economic impacts
- Compare complete measures of impact and value with incomplete measures of impact and value
- Cherry-pick high or low years to characterize the impact or value of fisheries
- Present economic information that isn't relevant to the policy issue under consideration
- Use average values as economic effects of marginal changes in catches
- Present irrelevant information about economic impacts and values in other areas
- Overstate the accuracy of estimated impacts or values