

Socio-Economics Quantitative Ecosystem Team



Ecosystem Based Fisheries Management Socio-Economic Drivers

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Socio-Economic Drivers

- Regional Impacts
- Commercial Income
- Recreational Benefits
- Cultural Knowledge and Values
- Behavior and Institutions

New Territory for Socio-Economics

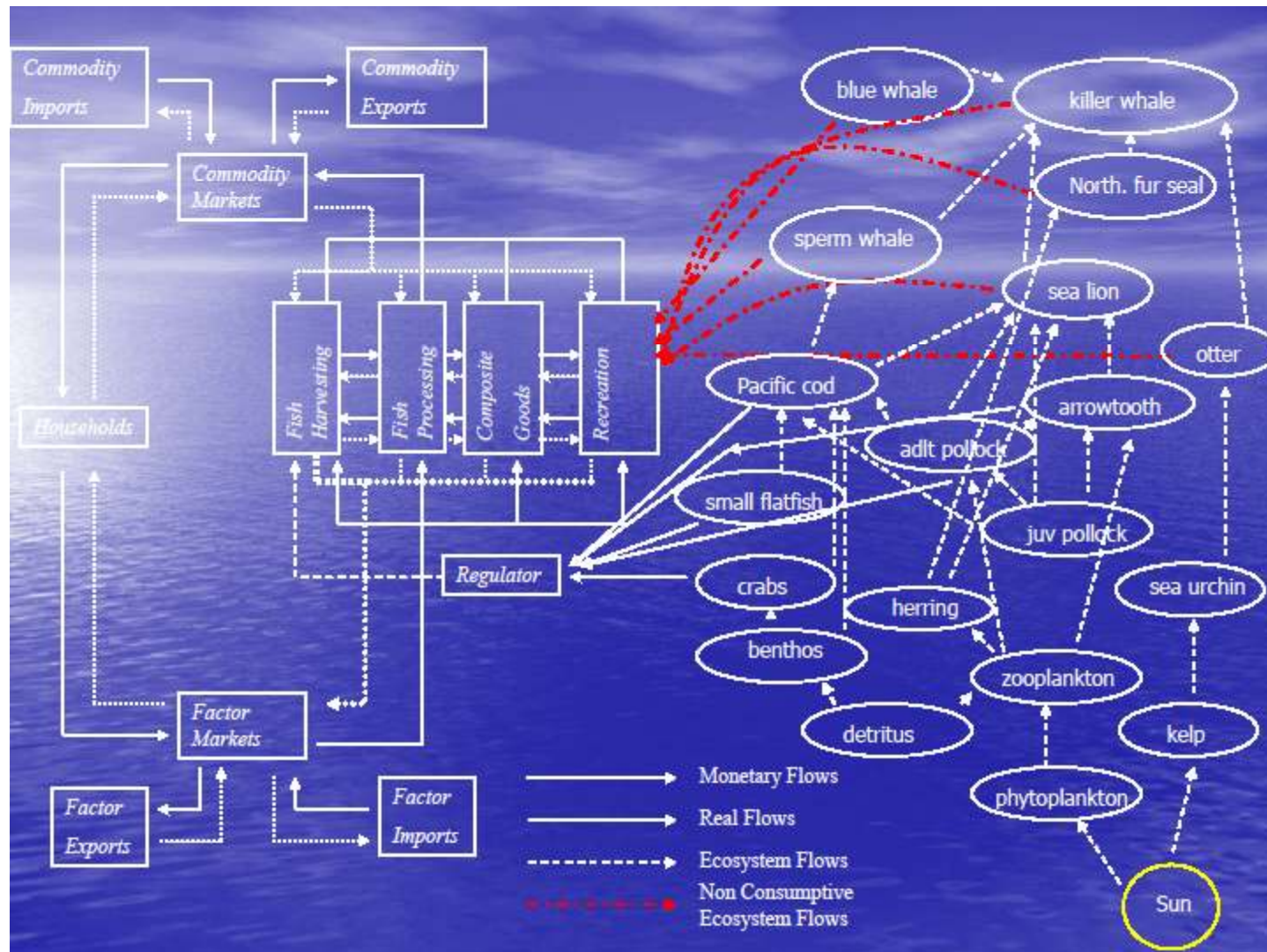
- Reference points and targets may not be appropriate in some cases
 - Requires more value judgments, than science
 - More about understanding consequences and trade-offs

Regional Impacts

- Regional Impacts as a Driver
 - The desire for economic growth within the Chesapeake Bay watershed resulting in increased income and jobs, potentially at the expense of ecosystem and fisheries health
 - The desire for commercial and recreational fisheries to have the largest contribution possible to the overall economic activity within a defined region
- Developing Regional Impacts Reference Point
 - “Sustainable” growth
- Regional Impacts Research
 - Computable general equilibrium model (CGE) of linkages, do we need one of these for the Bay?

A CGE Model of the Pacific Northwest

Finoff and Tschirhart (2008)



Commercial Income

- Commercial Income as a Driver:
 - The need for Chesapeake Bay watermen to have sustainable earnings from commercial harvest across a multitude of species and fishing activities.
- Commercial Income Reference Point:
 - Minimum annual earnings for full-time waterman
 - Part-time watermen
- Commercial Income Research
 - Linkages of earnings across species, impacts on fishing behavior.

Recreational Benefits

- Recreational Benefits as Driver:
 - Desire to increase or maintain the number and quality (catch rate, species mix, species size) of Chesapeake Bay recreational fishing trips
- Recreational Benefits Reference Point
 - Net economic value of recreational fishing in Chesapeake Bay
- Recreational Benefits Research
 - Comprehensive, bay-wide random utility and/or stated preference model that links changes in catch rates and composition to willingness-to-pay measures

Example of Stated Preference Survey for Recreational Valuation

SECTION E: SALTWATER FISHING TRIPS

Please compare Trip A, Trip B, and Trip C in the table below, then answer questions 1 and 2.
Compare only the trips on this page. Do not compare these trips to trips on other pages in this survey.
Assume that the trips below are identical in every way except for the features listed in the table.
All regulations remain as they are today unless otherwise noted in the table below.

TRIP FEATURES		TRIP A	TRIP B	TRIP C
REGULATIONS	DAILY BAG (TAKE) LIMIT Number of fish you can <u>legally</u> keep per day.	10 Haddock	4 Cod	Do something other than saltwater fishing.
	MINIMUM SIZE LIMIT Smallest fish you can <u>legally</u> keep of this species.	17 inch Haddock	22 inch Cod	
CATCH	NUMBER OF LEGAL-SIZE FISH YOU CATCH These fish are <u>at least</u> legal minimum size. Some fish are released if you catch more than the daily bag limit.	1 Haddock	6 Cod	
	NUMBER OF UNDERSIZED FISH YOU CATCH These fish are <u>below</u> the <u>legal minimum size</u> . <u>All</u> of these fish <u>must</u> be released.	6 Haddock	1 Cod	
	NUMBER OF OTHER FISH YOU KEEP Other fish you catch on this trip that <u>can</u> be <u>legally kept</u> .	6 Cod 1 Pollock	1 Haddock 10 Pollock	
TRIP DETAILS	TRIP LENGTH Total time purchased for this trip.	6 Hours	3 Hours	
	TOTAL TRIP COST <u>YOUR share</u> of the fishing trip cost, including bait, ice, fishing equipment, daily license fees, boat rental fees, boat fuel, and round trip transportation costs associated with traveling to and from the fishing location. Travel costs may include vehicle fuel, car rental, tolls, airfare, and parking. This cost does <u>not</u> include the price of food or drink.	\$330	\$92	

1. I like this trip best:

(Please mark the **ONE** option **YOU** like best with a ☒ or ☐)

TRIP A <input type="checkbox"/>	TRIP B <input type="checkbox"/>	TRIP C <input type="checkbox"/>
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2. Please rate the trips listed in the table above. (Circle the number that reflects your opinion best.)

TRIP A	DISLIKE	1	2	3	4	5	6	7	8	9	10	LIKE
TRIP B	DISLIKE	1	2	3	4	5	6	7	8	9	10	LIKE
TRIP C	DISLIKE	1	2	3	4	5	6	7	8	9	10	LIKE



Cultural Knowledge and Values

- Cultural Knowledge and Value as a Driver:
 - The need of fishery stakeholders to develop, sustain and share meanings, identities, heritages, livelihoods, and communities
- Cultural Knowledge and Value Reference Points:
 - Qualitative understanding supported by quantitative assessment of cultural consensus
- Cultural Knowledge and Value Research:
 - Ethnographic and survey research to identify critical cultural knowledge and values that promote ecosystem approaches to fishery science and management.

Behavior and Institutions

- Behavior and Institutions as a Driver:
 - The socio-cultural and economic needs for stakeholders to physically interact with elements of fishery ecosystems either individually or through social institutions
- Behavior and Institutions as Reference Points:
 - Patterns and networks of behaviors and resource flows among individuals and through institutions
- Behavior and Institutions Research:
 - Ethnographic and survey research to identify critical behaviors and institutions that support ecosystem approaches to fishery science and management

QUESTIONS OR COMMENTS?