



The Importance of Economic and Social Science in Fisheries Management

Alan Risenhoover

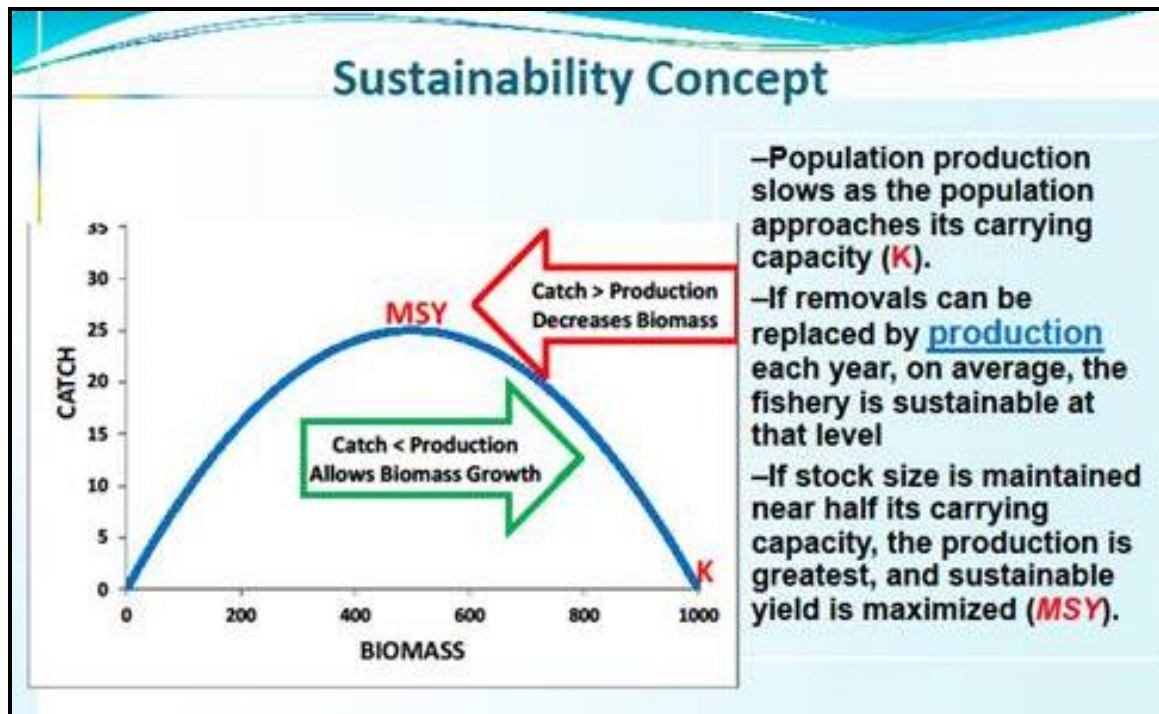
NMFS, Acting Deputy Assistant Administrator for Regulatory Programs

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Maximum Sustainable Yield

Fishery management under the Magnuson-Stevens Act is based on the concept of Maximum Sustainable Yield (MSY).



Optimum Yield

The term “optimum,” with respect to yield from a fishery means the amount of fish which-

- (A) **Will provide the greatest overall benefit to the Nation**, particularly with respect to food production and recreational opportunities, and taking into account the protection of marine ecosystems;
- (B) Is prescribed as such on the basis of the maximum sustainable yield from the fishery, **as reduced by any relevant economic, social, or ecological factor**; and
- (C) In the case of an overfished fishery, **provides for rebuilding** to a level consistent with producing MSY in such fishery.



National Standards

1. prevent overfishing while achieving optimum yield
2. use best scientific information available
3. manage stocks as units throughout their range
4. allocate fishing privileges fairly and equitably
5. consider efficiency in utilization of fishery resources
6. recognize variation and contingencies in fisheries, fishery resources, and catches
7. minimize costs and unnecessary duplication
8. consider effects on fishing communities
9. minimize bycatch
10. promote safety of human life at sea

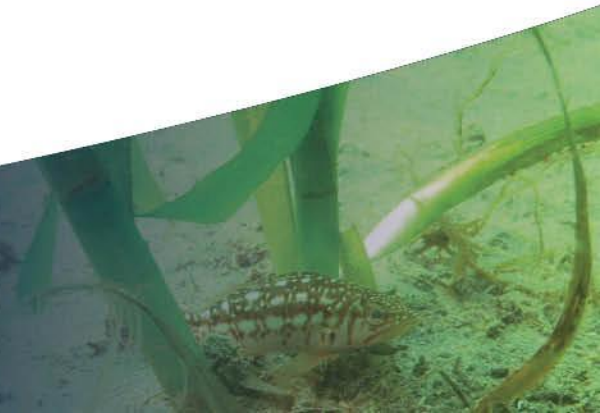
National Standard 1

“Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the **optimum yield** from each fishery for the United States fishing industry.”



NS1 – a foundation for management

- ❖ Sets the boundary for catch levels – overfishing is not permitted.
- ❖ Provides, through the definition of OY, for economic and social considerations to influence the choice of catch level **below** the overfishing limit.

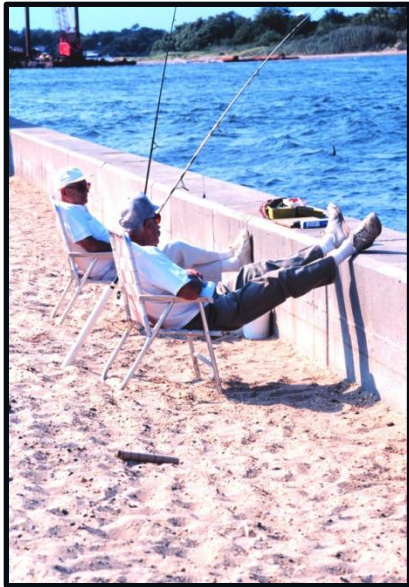


National Standard 8

Conservation and management measures shall, *consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks)*, take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of paragraph (2) [*i.e., National Standard 2*], in order to

- (A) provide for sustained participation of such communities, and
- (B) to the extent practicable, minimize adverse economic impacts on such communities.

NS8 – improving the foundation



The considerations of NS1 and Optimum Yield, as important as they are, are limited to establishing “the right amount of fish to catch.”

Economic and social science has much broader importance in shaping fishery management and understanding its consequences on society.



Fishery Management Process

- ❖ Identifying a fishery management issue
- ❖ Developing alternatives
- ❖ Analyzing alternatives
- ❖ Selecting alternatives
- ❖ Secretarial review
- ❖ Implementation of management measures

Economic and Social Science is Relevant to Fisheries in Many Ways

- ❖ Monitoring social and economic trends in a fishery.
- ❖ Understanding the dependence on the fishery by fishermen and communities.
- ❖ Defining fishery performance objectives.
- ❖ Designing management approaches.
- ❖ Meeting statutory requirements.
- ❖ Understanding consequences of different management alternatives.
- ❖ Retrospective analysis.



Monitoring Social and Economic Trends

❖ Economic Trends

- Revenues
- Distribution of revenues
- Profits



❖ Social Trends

- Changes in level of community engagement/dependence on fishing
- Demographics (resiliency issues)



Interaction of Biological and Social Aspects – an example

- ❖ Reducing catch (OY) below the maximum **can increase stability and resiliency** in a fishery.
- ❖ By managing for a lower fishing mortality rate on a higher biomass, the fishery can support more stability in annual catches over time.
- ❖ In years when the biomass is lower than average, there is room to increase the fishing mortality rate without overfishing.



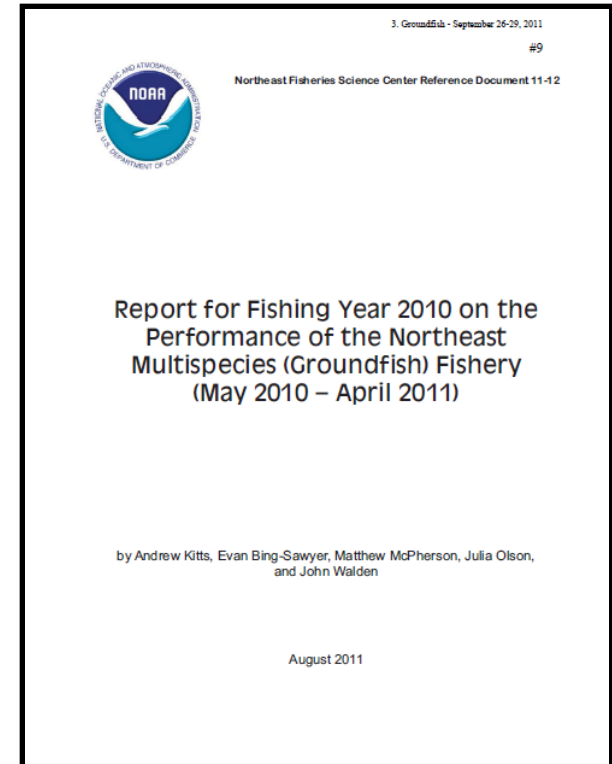
Evaluate Catch Share Program Design Features

- ❖ Catch share programs – Market based programs like catch share programs have certain characteristics/issues that are well-known in economics
 - Fair and equitable initial allocations
 - Distributional effects (geographic, vessel types)
 - Excessive shares
 - Transfer costs
- ❖ Bottom line: Economists can provide useful insights and assessments prior to program implementation



Retrospective Analysis

- ❖ Evaluation of economic and social performance of limited access Northeast groundfish fishery.
- ❖ MSA requires regular review of catch share programs.



Fisheries in Context

- ❖ Fisheries are just one piece of the broader ocean policy arena.
- ❖ There is a growing number of significant and competing uses and activities in the ocean.
- ❖ National Ocean Policy calls for development of Coastal and Marine Planning.
- ❖ Both NOAA and the Councils will have a role in Coastal and Marine Planning and will provide a voice regarding the importance of fisheries.



Summary

- ❖ A fishery is a human enterprise bounded by biological limits.
- ❖ Fishery management is management of people, not fish.
- ❖ Encourage economists and social scientists to weigh in on management issues.
- ❖ Improved understanding of economic & social consequences of fishery management actions will lead to better management.
- ❖ NMFS is working to improve social science data and methods.
- ❖ Understanding social and economic aspects of fisheries is needed to ensure that fisheries are appropriately considered in broader ocean policy and planning.

