

Ecosystem management: my perspective




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The Litany of Disaster

- Plundering of sea otters and fur seals
- Sequential depletion of whales
- Collapse of cod
- Overfishing estuaries and coral reefs

It isn't single species management that failed

- It was the failure to do single species management well
- I contend that if we did single species management well,  keeping populations at or above BMSY, we wouldn't have nearly the problems we now have

However, there are obvious deficiencies in single species management that mean we do want to move to considering ecosystem effects

- By catch of birds, mammals and fish needing protection 
- Impacts of fishing gear on fragile environments

Fisheries management is people management

- More important than the aquatic ecosystem is the human ecosystem, the fishermen and the regulatory system
- If we don't consider these elements of the ecosystem in management we are going to fail

The carrot or the stick



The carrot or the stick

- Many of the strongest advocates of ecosystem management, perhaps best illustrated in the Pew Commission report, have a strong belief in top down management
- I argue that in most places in the world top down management isn't possible and cooperative management, especially setting incentives right is the key to success

Incentives

- In the U.S. the Presidents Commission on Ocean Policy placed a strong emphasis on the use of “dedicated access privileges” to set incentives so that good biological outcomes were in the fishermen’s interest

Types of dedicated access

- Cooperatives: U.S. pollock, hake
- Territorial fishing rights: Chilean caletas, traditional Pacific Islands marine tenure
- State Auction of fishing rights: Falkland Islands, Washington Geoducks
- ITQ's IVQ's etc

New England rebuilding

- Fishermen have opposed dramatic reductions in catch
- Because in a situation with many inactive licenses, the costs of rebuilding would be carried by active fishermen, but the benefits would be taken by many more


Marine Protected Areas Biodiversity

- MPAs are an obvious step to take in protection of biodiversity and as controls on anthropogenic impacts
- A network of protected areas, perhaps encompassing 20% of marine habitats would be valuable for this purpose


Marine Protected Areas Fisheries Management

- MPAs will at best provide fisheries benefits only for stocks that are both overfished and sedentary relative to the size of the MPAs
- In the US this is very few species
- If you have a TAC regulated system, you will have to reduce the TAC of most species when you put in a MPA
- I suspect that there would be few cases where the net benefits to yield are positive
- In areas where MPAs are the only enforceable form of regulation, they are likely a useful fisheries management tool


Habitat impacts of fishing gear

- Fishing gear, especially bottom trawling and dredging can modify benthic habitats
- Many NGO's call for complete banning of these gears 
- I support protection of fragile habitats, and closing of areas as yet untrawled
- However I think the science in this area has in many places lost its course


Does trawling effect productivity

- This question is never asked
- Yet it is the key question
- It seems highly likely for instance that trawling for shrimp  makes those soft bottom habitats more productive for shrimp


Having your cake and eating it too

- Fisheries science tends to portray a vision of being able to produce food, jobs, profit and still maintain “intact” ecosystems
- MSC criteria 
- Lets be clear that if we applied these criteria to the land, we would not permit farming of any form – man would still be a hunter gatherer


Sustainable fishing does modify ecosystems

- Abundance of target species is lower
- There are fewer large fish
- The trophic structure of the ecosystem will be different 
- In many cases like lobster fisheries things will be very different

Flips between fish and shellfish

- Much evidence that fishing down groundfish has increased shellfish productivity leading to higher economic values
- Is this good or bad 
- Walters Mote contention that we can't have both
- Yet we (using single species management) pretend we can have both

Summary

- We need to do single species management right
- We need to safeguard elements of the ecosystem that would be affected by single species management
- We need to consider the  human element of the ecosystem and concentrate on setting incentives right
- We need to face up to the fact that fishing does change ecosystems and determine what is acceptable, on what spatial scale













