

Lecture #12: Even the Oceans Fail

Suggested Readings:

Joseph E. Taylor, *Making Salmon: An Environmental History of the Northwest Fisheries Crisis* (1999)
John M. Kochiss, *Oystering from New York to Boston* (1974)
John R. Bockstoce, *Whales, Ice, and Men* (1986); Eric Jay Dolin, *Leviathan: The History of Whaling* (2007)
Arthur F. McEvoy, *The Fisherman's Problem* (1986)
Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (1990)

Outline

I. Gifts of the Sea

early visitors came as much for fisheries as land resources: cod, salmon, herring, etc.
key features of ocean geography/ecology: most fertile areas located on continental shelf, esp. where upwelling cold currents bring nutrients from ocean floor to surface where they sustain large phyto- and zooplankton populations, base for food chain & fisheries

II. Migrating Fish, Vanishing Fisheries

anadromous fish: spend adult lives in ocean, swim up freshwater rivers to spawn (salmon)
Atlantic salmon runs destroyed early by construction of mills, dams, canals (early 19th c)
pattern repeated in CA: longstanding Indian fish economy, rise of commercial fishing for gold rush migrants, world's first salmon cannery on Sacramento R, 1864 (Hume brothers)
1883: 21 canneries, San Francisco shipping salmon around world. peak 1882: 12 mill pounds collapsed by 1891 to 2 million pounds, 3 canneries left; last cannery closed 1919
why? overfishing, nets and weirs remove whole stock from rivers, no reproduction
also: hydraulic mining debris silted rivers, raised warmth and turbidity past levels salmon could tolerate; dam construction; drainage of wetlands

so salmon fishery migrated once again (frontier meant not having to confront root problem)

Alaskan rivers produced huge yields. 1st cannery 1878; 37 by 1889, 720,000 cases

peak in 1936: 129 mill fish, 8 mill cases, 85% of US pack, 25,000 employees

then: collapse. 1950s at 40% of 1930s' level, nadir in 1967, 1.5 million cases

decline not explicable by pollution, watershed modification; simple overfishing

III. The Fisherman's Problem (cf. Arthur McEvoy's book with this title)

rational fishery behavior would seem to be: take safe annual level that doesn't threaten long-term

reproduction; akin to Grinnell's metaphor of spending interest on capital

but fishermen never seem to act this way, often have economic/ecological problems--why?

fish as common property resource with no legal property right attached; many compete to acquire, but no

one actually owns and takes responsibility for defending it

hence: competitive incentive means fishermen keep fishing as long as any profit can be made, since not

fishing means only that competitor will get fish instead of you

Garrett Hardin's 1968 popularization of this "fisherman's problem" as "Tragedy of the Commons": competitive

farmers add cattle to common pasture until it's destroyed

originally framed as "human nature", but in fact market logic a cultural construction

possible solutions: make resource private property, or public property regulated by state

IV. Oysters: Farming the Underwater Ranch

shellfish more fixed in place than other ocean-dwellers: hence private property solution?

human impacts on oyster beds already evident by 18th c, early 19th c

reproductive cycle: eggs/sperm ejected, free-swimming larvae (spawn), then attach as "set"

initial responses to decline: CT localities regulate with closed seasons, limited harvest

1820s: "planting" oysters, from spawn or from set oysters obtained elsewhere (Chesapeake)

1855: CT passes "Two-Acre" law allowing localities to license underwater 2-acre tracts

oystermen become farmers: acquire property, seed it, factories on shore

Chesapeake begins long decline in 1880s from hydraulic dredging, overfishing

Long Island Sound oysterbeds begin to fail to set starting around 1910: pollution, decline

V. To the Icy Ends of the Earth: Whales

colonial whaling began in Nantucket as offshore activity, indebted Indians as laborers

gradual migration around world as North Atlantic whaling areas decline from competition: Cape Horn by

1790s, Hawaii 1819, Gulf of Alaska 1835, sperm whale decline

1848: Capt. Thomas Roys heads into Bering Sea, captures 1800 barrels bowhead whale oil in a single

month; news produces oil rush in 1849, with > 70 ships visiting

seasonal cycle: leave New Eng in autumn, round Cape Horn in southern summer, to Hawaii in April, to

Bering Sea pack ice in mid-June, trade with Natives, pack ice breaks late July, hunt bowheads from

then until ice returns in late Sept; dangers of shipwreck

whales as commodities: oil for lighting threatened by PA petroleum late 1850s, then baleen for umbrellas & corset stays; gradual price rise; 1907 end of corsets brought collapse