



Herring and People of the North Pacific: Sustaining a Keystone Species. By Thomas F. Thornton and Madonna L. Moss. 2022. University of Washington Press, Seattle. 276 pp.

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Whenever I need to demonstrate the depths to which human irrationality can sink, I use the history of the herring fishery. The Atlantic-North Sea fishery for *Clupea harengus*, Atlantic herring, has been overfished for centuries, leading to collapse. Everyone has known for at least 200 years that overfishing was going on. World Wars I and II allowed dramatic recovery, since fishing was halted, but as soon as the wars ended, people immediately resumed their folly. The European Union was supposed to allow some discipline to set in, but that has not happened; too many member states continue to go by the logic of, “some won’t obey, so we might as well all fish.”

Other small-fish production systems, from sardines (*Sardina*, *Sardinella*, and related spp.) and anchoveta (*Engraulis* spp.) to menhaden (*Brevoortia tyrannus*) and sandlance (*Ammodytes* spp.), are also overfished (Pinsky et al. 2011). Often, these vitally important foods for both marine life and humans are simply made into fertilizer. An extremely significant point is the similar behavior of capitalist, socialist, communist, fascist, theocratic, and mixed regimes in this regard. Societies with these modes of production, despite claims of vast superiority of one system over another, have overfished, in full knowledge of what they are doing to the fish stocks and to their own peoples’ nutrition.

Responsible management lasts, at most, for a few years. Countries may briefly shut down fisheries, but once stocks rebuild to minimal levels, the devastation begins again. Thornton and Moss follow many others in speaking of “shifting baselines,” but the

governments and bureaucrats generally know perfectly well what the historic levels of fish were. They simply do not see enough political advantage in rebuilding the stocks. Fishers, for their part, are apt to say, “there are still plenty of fish, they have just gone away for a while”—a line I have heard from trout streams in the Rockies to bays of the South China Sea, as well as all along the Northwest Coast, during over 60 years of studying and watching fisheries and their fates. Often, the fishers will admit when pressed that they realize there is overfishing, but they still hope.

Of course, small-fish systems are not alone. Anything valuable is overfished. Bluefin tuna (*Thunnus thynnus*) and sturgeon (*Acipenser* spp.) are facing extinction worldwide. Aquaculture is gaining at the expense of wild fishing, simply because there are so few profitable wild fisheries left. Territorial limits have proved almost worthless, because heavy-fishing nations like Japan and China simply pay high sums for the right to fish within poorer nations’ waters, leading to exhaustion. The poor nations lose heavily; small ruling elites get the money, while vast numbers of local people lose their cheap protein.

Worldwide, fish are a rapidly wasting asset (Costello et al. 2016; Worm 2016). There is hope, since we know what to do (Duarte et al. 2020), but few nations are doing it, since the temptation to maximize catch is so strong. Very often, governments are not particularly concerned about preserving fisheries, and allow overfishing simply because it provides quick economic benefits. Anderson (1978)



studied this case in Malaysia and has observed it in the United States. Governments often subsidize fisheries, invariably leading to massive overfishing; it has been estimated that about \$1.50 is invested for every \$1.00 of fish caught (Finley 2011).

The foregoing provides some worldwide context for a superb book on a local fishery and its triumphs and tragedies. Ethnographer Thomas Thornton and veteran maritime archaeologist Madonna Moss team up on a detailed study of the herring fishery for *Clupea pallasii*, Pacific herring, in southeast Alaska. This fishery goes back at least 10,000 years, but almost all our information covers the last 200. During this time, the local Tlingit sustained more and more competition from commercial settler fleets, leading ultimately to the destruction of the herring fishery in many areas and the reduction of the last few strongholds to tiny, desperately threatened stocks. Thornton and Moss provide a quick comparison with the similar fate of herring in Japan and Russia, where overfishing began as early as the eighteenth century and has virtually exterminated the stocks. Important to note is the fact that Imperial, Communist, and post-communist Russia, and Imperial and modern democratic Japan, all overfished with close to the same lack of responsibility for the fishery, and the same lack of concern for local Indigenous peoples (the Ainu and Nivkh). Thornton and Moss see this as commodification: herring are taken from their ecological context and traditional comprehensive management and treated as merely goods to take and use.

Herring are critical in the food webs of the north-temperate oceans. Their decline has caused an equivalent decline in western grebes (*Aechmophorus occidentalis*) and Clark's grebes (*A. clarkii*), scoter ducks (*Melanitta* spp.), and many other birds, as well as in salmon (*Salmo* spp. and *Oncorhynchus* spp.), sea lions (Otariinae), and other life forms. (This reviewer can testify that grebes and scoters once wintered in millions in southern California and are now virtually extirpated, largely by depletion of herring, sardines, anchovies, and shellfish.) Herring are also among the very best food for humans, being not only an unexcelled source of protein but a top-level source of calcium and other minerals and of omega-3 fatty acids.

Like other Northwest Coast peoples, such as the neighboring Haida (Jones et al. 2016; Pinkerton 2015; Pinkerton and Davis 2015), and Tsimshian (Menzies 2016), and the Heiltsuk (Gavreau et al. 2017), the

Tlingit maintained extremely good and thorough stewardship over herring, as they did over other marine resources (Kan 2015; Thornton 2008, 2012).

For the Tlingit, herring are people; perhaps they became truly human-like under the sea, as salmonid do, living in houses and speaking human languages. Treating them with disrespect makes them go away. Fishing beyond immediate needs for subsistence was the height of disrespect. The Tlingit word for "respect," actually a wider concept including reverence and deep personal regard, is *at yáa awuné*; the key phrase is "*Llakát át a yáa ayadumané*: Toward all things show respect" (p. 121). Thornton has elsewhere noted the Tlingit "three R's" as "resilience, resonance, respect" (Thornton 2012:xxii–xxiii). (One might add responsibility and reasonableness; those are certainly part of Tlingit management.) Thornton reports that small sockeye deserted a stream and lake because they were insulted by a take-all weir being put over the stream. This episode gave rise to a saying "Don't leave insulted like those little sockeyes" said to guests to get them to stay (Thornton 2012:82–83). Tlingit object to calling herring resources (p. 112).

The Tlingit not only consumed herring but made their eggs a staple food. The herring and their eggs are cultivated; "cultivation is *any conscious labor to create specific conditions for enhancement in space and time of the production or distribution of a species of animal or plant*" (p. 117, their emphasis). This involves strategically placing hemlock (*Tsuga heterophylla*) branches and protecting seaweed. Herring spawn onto substrates, and the eggs must be exposed to air part of the time, so placing hemlock branches where tide will cover them provides more space for spawning. Branches can be moved around and otherwise managed even after roe is placed. (Also, the present reviewer can attest from experience that the hemlock needles give a delightful piney flavor to the eggs.)

Cultivation also extends to keeping the shores clean. Pollution of any kind damages the resource, another worldwide problem for herring fisheries. The herring spawning grounds were owned by *kwaan* (local sociopolitical groups with some kinship basis) and protected or shared accordingly. Poachers could be shot (p. 126). At this point it is worth reminding readers that the opposition of nature and artificial or cultural is meaningless in contexts like this.

As elsewhere in Native North America, myths, stories, songs, and other teachings brought home in



emotional, culturally valued terms the importance of respect for the fish.

In contrast, the settler societies began immediately to take as many herring as possible, without regard for waste. In the early twentieth century, the usual fate of herring was reduction into fertilizer. This peaked in 1929 (p. 137) and collapsed in the 1930s as herring were depleted. The extremely valuable salmon fishery was thus impacted by loss of the salmon's key food, though overfishing of salmon probably made that problem moot. (I studied a similar case in Malaysia: small fish were caught for fertilizer, though many would have grown up into adults selling for several dollars a pound; Anderson 1978.)

There was then a slight rest for the herring, but by the late twentieth century the herring were taken for the roe still in its sac, stripped from the females, for the Japanese delicacy *kazunoko*. The authors emphasize that this not only kills the females before spawning, but also kills the males, since all are taken together in giant purse seines. The roe-on-hemlock and roe-on-kelp fisheries took no live fish and could be managed by taking roe from areas too high (above average tide) or too low (below minus tide) for the eggs to survive. Eventually only 49 sac roe boats could survive (p. 177). One assumes there are fewer now. Thornton and Moss (p. 182) say that

Profit-seeking commercial herring fishers, heavily capitalized with investments in limited-entry permits and the equipment necessary to participate in the sac roe seine fishery, continue to push fisheries managers to put the maximum sustainable quota of herring on the block for commercial harvest.

In the meantime, in Alaska as in Japan, Russia, and the European herring fishery, pollution has steadily increased. Logging and resulting erosion of soil and rocks into the water has destroyed many spawning grounds. Development of marine oil drilling and shipping is only the most obvious problem. The grounding of the *Exxon Valdez* destroyed permanently the formerly rich herring fishery of Prince William Sound, and that is only the most spectacular case. Over the last several decades, Alaska has been governed by the oil industry; for well over a generation, its governor, senators, and representative in Congress have come from that industry or been associated with it. They sometimes appear to see fish more as an annoyance than anything else.

Since the late twentieth century, the herring have been “managed” according to the principle of maximum sustainable yield (MSY). This idea, in theory, involves calculating how many fish can be caught per year without reducing the fishery. Individual quotas are then made available to fishermen, who can sell or trade them. This would be reasonable, but in fact the MSY is calculated by government scientists and bureaucrats with every interest in maintaining the fishery at the highest levels possible, and no interest in being conservative about their estimates. Fishermen and fish consumers vote, and those with political power may set budgets and do hiring and firing; alienating them is not good for job prospects. Also, my research on fisheries development in Asia and British Columbia found bureaucrats and fish managers to be responsive to protests and complaints. The bureaucrats often genuinely want to help, and see more value in keeping the fishermen in business for a while and hoping for the best down the road. Thornton and Moss give examples of such thinking, as well as of some simple irresponsibility.

It is a neoliberal experiment, and, like many attempts by government to manage a not-really-free market, it produces problems. Thornton and Moss agree with a very large literature that this constant pressure leads to chronic overestimates of the MSY. It appears that often the bureaucrats do not even try; they just use old figures. Little or no account is taken of damage to the fishery by pollution and other outside sources. The problem has been widely reviewed (e.g., in Finley 2011). Evelyn Pinkerton has been studying this problem for some 40 years on the Northwest Coast (e.g., Pinkerton 2015; Pinkerton and Davis 2015) with the same findings.

The authors make all the necessary recommendations: document, restore, monitor, study, and consider the subsistence fishery (pp. 192–195). Above all, they recommend using local Tlingit knowledge—accumulated, after all, over 10,000 years—instead of MSY. They also make a new and very important recommendation: “Encourage a more robust program of science education, beginning with primary school and continuing at the secondary and tertiary levels” (p. 195). This is rarely advocated in the fisheries literature but is vital. Children need to learn that the world has limits. If you catch all the fish, there will be no fish. Children who do not learn this go on to become adults who seem unable to grasp the concept.

This and many more recommendations for sound management, based on Tlingit tradition, make this book a profoundly hopeful work. If it is taken seriously in high places, it will save the herring and the Tlingit fishery. It is such a stunningly well-done, scholarly, tightly argued work that it will be impossible to dismiss. It may have good effects.

At the end, a book that has managed to maintain a cool, rational tone for 200 pages finally breaks into a desperate cry from the heart: "It would be a disastrous shame if these cultural values and ecosystem services were sacrificed on the altar of MSY commercial fishing for the benefit of a few dozen herring sac roe seine permit holders and elite foreign markets" (p. 203).

The present reviewer can only agree. Other things in the human record equal, but nothing surpasses, the sheer stupidity of worldwide management of herring fisheries. Some of the thinking in the Northwest Coast was simply to eliminate anything native and natural, to allow introduced economic formations to flourish, but this does not explain the suicidal insanity of herring mismanagement in Europe and Japan, where herring are staple foods. Thornton and Moss call it "managed annihilation" (p. 171). They also refer to the "tragedy of the commons," but it is the opposite: the government has asserted full control over the resource, shoving the Tlingit aside (p. 197). Eliminating common-property management was supposed to fix overuse, but in this and almost every other reported case involving displacement of local managers by governments, it led to the opposite.

One point that should be made here is that the conflict is not between the Indigenous people and the settler society. Many whites and others agree with the Tlingit and would support them. My research in Haida Gwaii found very widespread support by all non-Indigenous groups for Indigenous rights. Conversely, a few Haida fishermen had large boats and fished hard on the herring stock, not acting notably different from white fishers. This is a management issue, not a "racial" one, though racism has always confounded it and been used by the giant fish-packer interests to divide and degrade their opponents.

The most important conclusion of this book, however, is the vast superiority of local management, based on accumulated local knowledge, over remote management by bureaucrats who have little

knowledge or understanding of the system they are managing, and often no personal commitment to it.

Once again, it is worth pointing out that the destruction of the world's small-fish stocks has been done under imperial, capitalist, socialist, communist, fascist, and even theocratic governments. The hopelessness of the contrast drawn between capitalism and socialism is particularly clear. Both are forms of modern industrial bureaucratic civilization and both have the same record in managing fisheries. The contrast is not between modes of production. The contrast is between responsibility and the flagrant lack thereof. More generally, the contrast is between remote bureaucrats with little stake in doing right by the resource users and local, often Indigenous, people who depend on the resource and understand its place in local ecology. James Scott has long argued that states tend to consolidate power at the expense of local autonomy, and that this routinely produces disasters (Scott 1998). Many others, a large share of them students of Northwest Coast fisheries, have pointed out that long-established local users need to retain management rights. Unfortunately, dehumanizing Indigenous people is as typical of states as is humanizing fish among Indigenous cultures.

Beyond that, the thoughtful reader cannot escape the conclusion that maintaining a vulnerable fishery, or anything else of value, requires, above all, respect. We must respect the fish. We must respect the consumers of those fish—grebes and salmon as well as humans. We must respect the whole ecological web, and in the end the whole world. The opposition is not between modes of production, but between cold indifference and warm respect and regard.

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