

On Reason, Mythologies and Natural Resource Conservation

The worldwide destruction of natural resources -- rangeland, forests, estuaries, reefs -- in the face of increasing needs for their produce would be rather ironic, were it not for the fact that these destructions, more likely than not, will have tragic consequences in the next century, when there will be more of us.

Sakumo Lagoon, Ghana: An Old Mythology

In 1971, I spent five months in Ghana, West Africa, collecting data for an MSc thesis, "On the Ecology and Fishery of a Small West African Lagoon". I was puzzled at the time by the behavior of the fishermen who exploited the Sakumo lagoon, near Tema (Fig. 1). Based in a nearby village, they were part-timers or full-timers, but fished in either case rarely more than about 4 hours at a time, then sold their catch, exclusively tilapias, *Sarotherodon melanotheron*, and usually ranging between 3 and 5 kg, to the drivers

DANIEL PAULY
ICLARM

or passengers of cars and trucks along the nearby Accra-Tema Road (Fig. 2). A catch of 4 kg corresponded in October 1971 to 1 New Cedi (approximately US\$1), i.e., well above the mean daily income of a Ghanaian worker at that time (approximately US\$0.75). Why didn't they fish more, and use the money to purchase more, better gear, and then empty the lagoon of fish?

The reason, obviously, was that it would have been an unreasonable thing to do.

Indeed, the fishermen had lots of rules meant to prevent them from overfishing the lagoon, among others:

- a prohibition to use canoes on it (it was shallow enough for fishing to be performed without such crafts, but muddy

- enough to make such fishing rather strenuous);
- a prohibition to fish on a Friday (that day, the fishermen usually put offerings in a small shrine on the edge of the lagoon);
- a closed season, usually from January to April, prior to and during the rainy season.

The enforcement of these fishery regulations -- for which only *mythological* explanations were provided to me by local informants -- was ensured by a "Wulormo", elected for life by the fishermen themselves (the first Wulormo, a long time ago, was the wife of Sakumo himself, who now dwells in the above-mentioned shrine). As far as I could observe during the five months that I worked in that lagoon, no one broke the rules, probably because they had evolved among the fishermen concerned, and were essentially reasonable. They excluded greed, though.



D. Pauly

Fig. 1. Fishermen in Sakumo Lagoon, near Tema, Ghana. Fig. 2. A catch of tilapia (*Sarotherodon melanotheron*) from the lagoon.



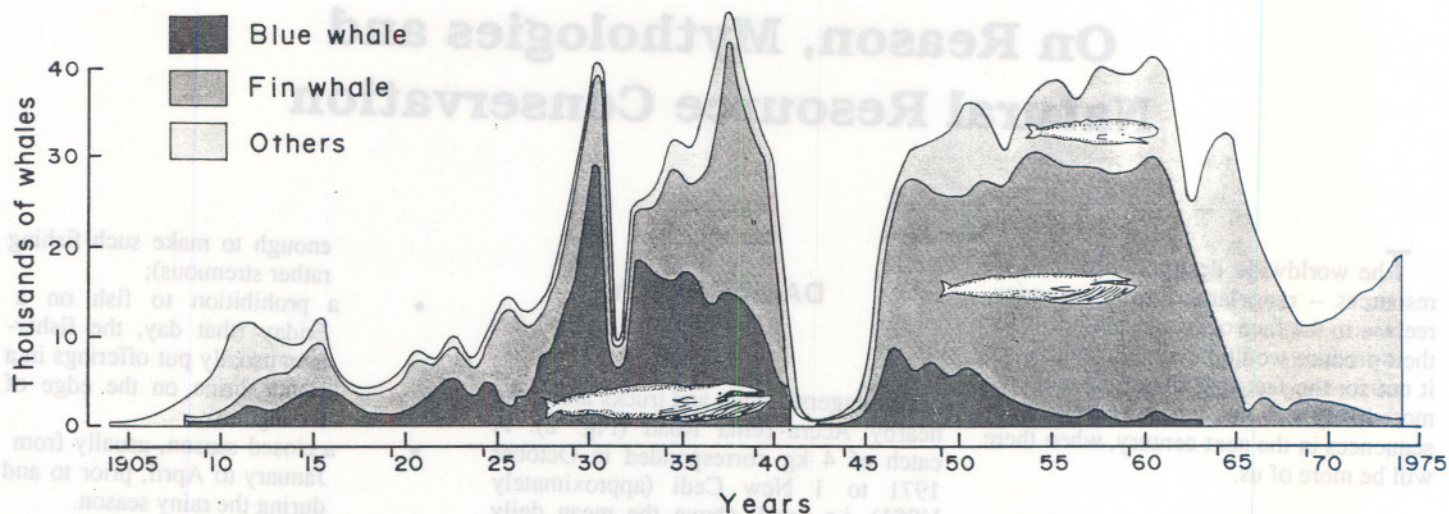


Fig. 3. Evolution of Antarctic whale catches, 1904 to 1974. Note decline of blue and fin whales, and drop in catches during WWII (Source: Mitchell Beagley atlas of the ocean, M. Beagley Publishers, London, 1977).

The End of Modern Whaling and the Rise of a New Mythology

Whales have been exploited by a variety of people, in Europe especially by the Basques in the sixteenth century, relying at first on the stocks of Biscayan "right" whales along the southern Atlantic coast of France and northern coast of Spain. When these were gone the Basques moved across the Atlantic and set up their trade there (what part of America was "discovered" in the process is irrelevant, since, as Umberto Eco notes, everybody except the Swiss seems to have discovered America). The northern "right" whales (so named because they diligently floated after being harpooned) were essentially liquidated by the middle of the last century. Then fast steam whalers, guns with explosive-tipped harpoons and other paraphernalia were invented, and an industry emerged which concentrated on the fast swimming, large fin and blue whales of Antarctica. The story is from then on rather well known: it is essentially that of one stock after another being reduced to a shadow of its former self (Fig. 3), and the industry making a mockery of whatever scientific advice it got.

Yet, in 1987, worldwide whaling has essentially stopped with only a few countries still trying to catch whales here and there under the cover of scientific research. What has happened, and how does this relate to the Ghanean story above?

The point obviously is that a powerful popular mythology has emerged concerning whales and that it is this mythology,

and the political pressure it generated in some western countries, which has brought the whaling industry to its knees, and not scientific advice. Elements of this mythology are:

- whales are beautiful, more so than most other animals;
- whales do not grunt or simply make noises, but *sing* and communicate with each other, and some suggest that aliens from outer space communicate with them;
- whales have big brains and are intelligent, more so than pigs, dogs, apes and probably people, too;
- whales do not harm anyone and just want to be left alone, celebrating nature.

These are the key elements of the whale mythology, as can be distilled from various popular sources (even when one doesn't believe in them), such as the fourth (!) volume of Douglas Adam's Trilogy "So Long and Thanks for All the Fish", as well as "STARTREK IV: The Return Home", in which humankind is saved because whales are brought back from (the brink of) extinction.

Some readers will now feel that all this is not serious -- what do STARTREK IV and whale mythology have to do with reason and natural resource conservation?

The Lesson

My point is that there is a lesson to learn here. Scientific advice clearly is

neither generated nor received in a culturally neutral context. If the cultural context in which regulative measures are formulated is a macho world in which hunting tigers, bulldozing forests or zapping 40,000 whales a season are considered neat, then conservation won't work. Nor is conservation thinkable where greed reigns supreme, since cutting down a forest or harpooning all of Antarctica's whales *now* and putting the money in a Swiss bank (the Swiss, again!) is usually more rewarding (and hence more reasonable, financially) than harvesting, in the future, the annual surplus production -- i.e., the interest -- from that forest or whale stock.

There are basically two ways by which a cultural context can emerge in which conservationists' measures are considered reasonable. One of them, as illustrated by the Ghanean fishermen, belongs to the prescientific age. The other way, which we have witnessed in the western world in the last two decades with reference to whales, was probably an emotional reaction to the presently prevailing form of scientific inquiry, which is usually extremely detached from the objects it investigates. It can be expected that the emergence of powerful new mythologies, as has recently occurred for whales will probably continue, especially with regard to trees and forests, coral reefs and other threatened organisms, habitats and ecosystems. It is likely that science itself in the long run will benefit from this -- if only because "objective detachment" from the organisms, habitats and systems that scientists study is itself a myth. ●