

FISHERIES

Tales of a Small, But Crucial, Fish

Daniel Pauly

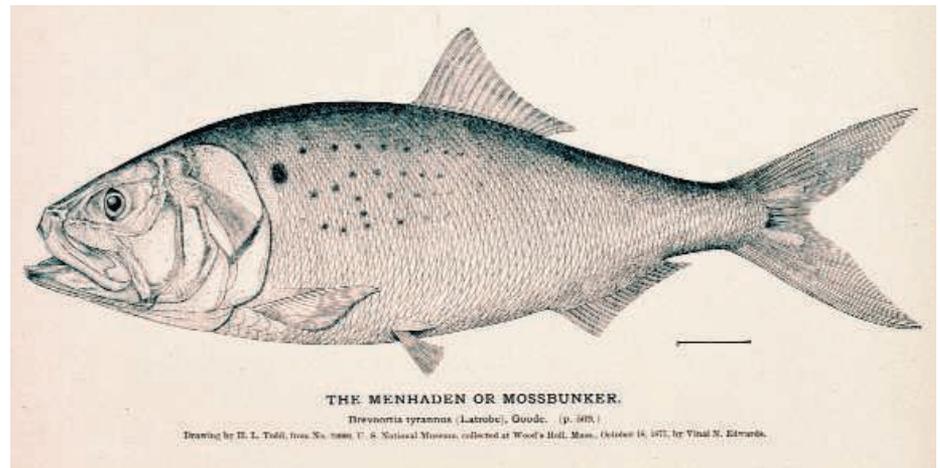
At first sight, *The Most Important Fish in the Sea* appears to belong to that lineage which earlier gave us accounts of cod [the fish that changed the world (1)], American shad [the founding fish (2)], and Patagonian toothfish, also known as Chilean seabass [the perfect fish (3)]. These fish were all important because of their impacts, past or present, on people's diets. But Atlantic menhaden (*Brevoortia tyrannus*) is really different from cod, shad, and toothfish, because it is a fish that we do not eat and likely never will. Rather, it is eaten by the fishes we like to catch and eat. Thus, the conflicts about and around this fish are different from the conflicts about others, where different people (the French versus the English, the line fishers versus the ones using trawls, etc.) competed for access to wholesome food fish.

With menhaden—an oily, bony, small, and reputedly ill-tasting representative of the herring family—the conflicts have been about the uses, direct or indirect, to which this fish was to be put. Traditionally, menhaden was used as fertilizer, and the book has an interesting section on how American Indians planted each corn plant with one fish. This role is at the origin of the fish's most common name, *munnowhatteaúg*, which means “that which manures” in the Algonquian language of the Narragansetts. On the other hand, the larger fish exploited by the early European settlers along the U.S. East Coast, and the marine mammals also abundant along that same coast, all fed on menhaden. This fish, and the microscopic algae it feeds on, formed the base and understory, respectively, of most coastal food webs, from New England to Florida and particularly in Chesapeake Bay.

With the invention of fish meal and its use for feeding chicken and livestock, the industrial fishery for menhaden increased tremendously, especially after World War II. Menhaden, which earlier had formed immense schools, immune to the frenzied hordes of predatory fishes surrounding them, became scarce. Their reduced numbers began to

affect the upper part of the food webs, threatening to drag all, prey and predators, into the maw of the reduction plants, which for a time mushroomed along the coast.

Conflict had always simmered between the



THE MENHADEN OR MOSSBUNKER.

Brevoortia tyrannus (Latreille), Guédc. (p. 603.)

Drawing by H. L. Todd, from No. 1880, U. S. National Museum, collected at Wood's Hill, Mass., October 14, 1871, by Vinal N. Edwards.

“A small, unappetizing fish.”

fishers exploiting larger fish, who wanted menhaden to “fulfill their natural role” (to be eaten by a large fish), and the reduction fishery (which employed spotter planes and purse seiners to save them from such cruel death). The debate intensified in the 1970s, when it

was joined by recreational anglers, whose target species (especially striped bass) depended on menhaden—despite assertions to the contrary by spokespersons (some, elected officials) of the reduction fishery.

This fisheries conflict was one of the first that pitted those interested in a single-species approach, hitherto dominant, against advocates of what is now called “ecosystem-based fishery management” (4). The arguments of both sides are still with us, even though (predictably) the bloated reduction fishery, along with the single stocks on which it depended, largely collapsed. All that is left in the mid-Atlantic region is a small stock of menhaden huddling in Chesapeake Bay and a single firm—the latter a distillate of everything that can be wrong with industrial fisheries (in particular, remote, but well-connected, corporate owners). Further north, off New Jersey and beyond, the now-protected menhaden are coming back.

In the Gulf of Mexico, the related Gulf menhaden (*Brevoortia patronus*) still supports an extensive fishery, generating conflicts that trail those along the Atlantic coast by one or two decades.

In the meantime, ecologists discovered that menhaden, given their feeding habits, were fulfilling another ecological role: keeping algal blooms in check. Although the role of oysters in cleaning up coastal waters was always understood, that of menhaden and

related filter-feeders was not. Now, people realize that it would be handy to have large schools of menhaden acting as giant vacuum cleaners in Chesapeake Bay and other coastal bodies currently choked by algal blooms triggered by farm runoffs.

The Most Important Fish in the Sea, which tells and thoroughly documents these stories, could be seen as yet another helpless commentary on the way we are trashing our oceans. But it is an optimistic book. It deals with a resilient little thing that, unlike larger, longer-lived species such as cod, readily bounces back if given the chance. The role of menhaden in coastal ecosystems is now well understood, making single-species arguments impossible to maintain. And the sole corporation that still fishes Atlantic menhaden for reduction does not have a monopoly in supplying fish meal and fish oil to the market. Indeed, it appears to be able to maintain its fleet only because of the welfare (subsidies) it gets. Perhaps this story will have a positive ending; H. Bruce Franklin's fascinating account makes us look forward to that.

References

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2. J. McPhee, *The Founding Fish* (Farrar, Straus, and Giroux, New York, 2002).
3. B. Knecht, *Hooked: Pirates, Poaching, and the Perfect Fish* (Rodale, New York, 2006).

The Most Important Fish in the Sea
Menhaden and America

by H. Bruce Franklin

Island Press, Washington, DC, 2007. 278 pp. \$25.
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FILM: SPACE

Reminiscences of the Moon Trips

Jay M. Pasachoff

As the 50th anniversary of the launch of Sputnik passed, a documentary film about the Apollo program gained widespread circulation. With its pedigree of “Ron Howard Presents,” and a cast of 8 of the 12 astronauts who landed on, and two others who circled, the Moon, *In the Shadow of the Moon* illuminates the heady era of lunar landings from a point of view nearly 40 years on.

Of course, it is remarkable that we—and in 1969 humanity took credit for the Moon landing—sent people off Earth during this past century. Sputnik or Apollo may be what is remembered from our previous millennium by people in the 30th or 40th centuries. It is also remarkable that we stopped going to the Moon 35 years ago.

The film, directed by David Sington (who has produced and directed science programs for television), is narrated by the astronauts, who are shown in extreme close-ups. To at least some of us who remember them as young men with the Right Stuff (the Tom Wolfe title, to which some of them refer), it is a shock to see their white-haired heads on the screen. But after all, Buzz Aldrin, Neil Armstrong, and Michael Collins were all born in 1930, making them about 77. To today’s college students, the film remains one of derring-do. It tells the story leading up to and including the Apollo 11 mission, then deals cursorily with the missions following that first lunar landing. There is little about the Russian role in the space race. The movie incorporates footage that its researchers found in NASA’s Houston vaults. The clear images reflect the

In the Shadow of the Moon

David Sington, Director

THINKFilm, New York, in association with Discovery Films, 2007. 100 minutes. www.intheshadowofthemoon.com

restoration of the original films (no simulations or recreations are used).

We hear Alan Bean of Apollo 12, one of the more loquacious astronauts featured, describe how disbelieving he was when told on the phone that the Apollo 1 crew was “lost”: He first advised his caller to look for them in the beach house, before realizing the deadly consequences of the fire. We learn that Gus Grissom had been worried about the condition of the wiring in the 100%-oxygen atmosphere, but “I can’t say anything about it or they’ll fire me.” Perhaps it was the fire scene—and a glimpse of cigars lit in the Houston control room after

Apollo 11’s landing—that brought the film its PG rating, for “mild language, brief violent images, and incidental smoking.”

One intriguing black-and-white sequence records the appearance of Mr. and Mrs. Armstrong, Neil’s parents,

on the game show “I’ve Got a Secret.” Nobody guesses theirs: that their “son was made an astronaut today.” The interviewer then asked Mrs. Armstrong how she would feel if her son were chosen to land on the Moon.

Neil Armstrong, famously reclusive, chose not to appear in the film, though his name comes up often. Aldrin says that Armstrong’s cool manner was admirable, with his “One small step for man.” Aldrin admits that had he stepped out of the lander first, he might not have been able to refrain from shouting something like “Yahoo, man, I’m here.” He also describes how Armstrong decided to “go long” when a boulder field was under the lander and notes that “it was a little iffy right there at the very end.”

Michael Collins talks about how he felt about orbiting the Moon without getting a chance to land, pointing out that he was glad to have been on the crew of the first manned landing. He wasn’t lonely when on the far side of the Moon by himself, though he was aware that there were two people on the surface on the other side of the Moon and beyond them 3 billion on Earth, while “over here, there’s me plus... god only knows what.” He noted of Earth: “How fragile it appeared.” On his return, he remarked, “Nice ocean you’ve got here, planet Earth.”

And Bean recalls, “Since that time, I have not complained about the weather one single time. I’m just glad there is weather.”

The strangest piece of historic footage is Richard Nixon beginning a speech to the nation announcing the failure of Apollo 11 and loss of its crew. Fortunately, that speech never had to be delivered. Earlier, we were shown John Kennedy announcing the goal of bringing men to the Moon and back safely to Earth by the end of the decade. But the omission of Lyndon Johnson from the movie (we only see him sitting behind Kennedy during the latter’s Senate speech) seems very strange, because Johnson played major roles by suggesting the Moon landings to Kennedy and then by carrying through.

I was left with a sour taste by the film’s treatment of religion, near its end. Gene Cernan talks about a general creator “that stands above the religions that govern our lives,” and then Charlie Duke tells about finding Jesus. How about the other 10 Moon-landing astronauts? Did any lose religion or decide that religion was



Eagle on the Moon. The Apollo 11 Landing Module, July 1969.

not a particular part of his voyage to the Moon? Earlier, Jim Lovell, who read from Genesis on Apollo 8, responding to a letter from an atheist who wrote “that was inappropriate,” answers, “Maybe it was; I don’t know.”

All the same, Sington offers a moving tribute to “a time when we made bold moves.” The film’s final credits wonderfully proclaim, “This film was shot entirely on location on Earth, in Space and on the Moon.”

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