

# FISHING, TURTLES AND THE LAW: RECENT EVENTS IN THE HAWAII-BASED LONGLINE FISHERY

On Thursday 3 August 2000, a federal judge imposed severe constraints on US longline vessels based in Hawaii. The judge's order, effective 4 August 2000:

1. closes a large area of ocean to longline fishing, apart from a limited number of sets (370 per year) that may be conducted for scientific purposes with 100% observer coverage;
2. establishes a larger area of ocean where unlimited fishing can be conducted between 1 June and 14 March;
3. requires observer coverage to rise from at present <5% to 20% within three months of the order date;
4. requires that any "profits" from swordfish sales be donated to charity; and
5. will remain in effect until the completion of an Environmental Impact Statement (EIS), scheduled for 1 April 2001.

The judge's order was the culmination of nearly 12 months of litigation brought against the National Marine Fisheries Service by an environmental law firm, Earthjustice, on behalf of plaintiffs, the Center for Marine Conservation and Turtle Island Restoration Network.

This action will have serious consequences for what is the USA's most valuable domestic

by Paul Dalzell,  
Western Pacific Regional Fishery  
Management Council,  
Honolulu, Hawaii

fishery in the Pacific Ocean. A well managed fishery, moreover, without any serious stock problems. How and why did this happen?

## Longlining in Hawaii

Longline fishing in Hawaii had been conducted for many decades prior to the expansion of the fishery in the late 1980s. Hawaii longline vessels evolved from wooden pole-and-line tuna sampans, employing longlines made from rope and fishing mainly within 2–20 nm of the coast.

By the 1930s the longline fishery was second only to the pole-and-line fishery in landed volume of fish, and accounted for most of the yellowfin (*Thunnus albacares*), bigeye (*Thunnus obesus*) and albacore (*Thunnus alalunga*) landed in Hawaii. The fishery peaked in the mid 1950s, with landings exceeding 2000 t, and then declined steadily through lack of investment in boats and gear until the late 1980s.

The revitalization of the Hawaii longline fishery was due to the development of local and export markets for fresh tuna to the US mainland and Japan, and

the discovery of swordfish stocks around Hawaii. Participation in the Hawaii longline fishery increased from 37 vessels in 1987, to 156 vessels in 1991. Further entry to the fishery was halted by a moratorium in 1991, later formalized as a limited entry program with a cap of 164 vessels.

These management measures were imposed by the Western Pacific Fishery Management Council, which has the authority to manage fisheries in federal (3–200 nm) waters around the US islands in the Central and Western Pacific\*.

The Council, has a number of management plans for different fishery resources and manages fisheries for tunas and tuna-like species under the Pelagics Fishery Management Plan (PFMP) that was implemented in 1986.

Landings increased rapidly and by 1991, had reached 8,165 t, of which 3,992 t was swordfish. The newer vessels in the fishery were characterized by a greater reliance on sophisticated electronic gear for navigation and finding fish. These newer vessels also tended to be larger in size.

The majority of vessels operating in the Hawaii longline fishery are between 56 and 74 ft (17–22 m) in length, with the larger vessels fishing to the northeast of the Hawaiian Islands and targeting a mixture of swordfish (*Xiphias gladius*) and bigeye tuna (*Thunnus obesus*). The revitalized fleet also adopted more modern longline gear, using continuous nylon mono-filament main lines stored on spools, with snap on monofilament gear.

Monofilament longline gear is more flexible in configuration

\* Eight Regional Management Councils were established by the promulgation of the Magnuson Act in 1976, five off the east coast and three off the west coast, to manage fisheries in US federal waters

and can be used to target various depths more easily than traditional tar-coated rope longlines.

Both daytime and nighttime fishing are practiced using the same monofilament system. Depth of a longline set irrespective of mainline material is principally a function of the length of mainline between adjacent floats and the number of hooks between floats (HBF). In targeting deep dwelling bigeye tuna, 12–25 HBF are deployed with enough sag to reach depths of 400 m. Only three to six HBF are deployed when targeting swordfish and the line is kept relatively taut so that it stays within the first 30–90 m of the water column.

Night-time fishing employs luminescent light sticks to attract swordfish and their prey to the baited hooks. Longlines deployed for swordfish are baited with large squid (*Illex* spp). Tuna-targeting longlines tend to be set during the day and use saury (*Cololabis saira*) as bait. Saury bait tends to sink faster than squid, which often has

pockets of air trapped within the mantle. Currently, the Hawaii fishery represents about 2.7% of the longline hooks deployed in the entire Pacific each year.

### Protected species interactions

Early on in the re-expansion of the Hawaii longline fishery it became apparent that the vessels fishing close to the Northwestern Hawaiian Islands (NWHI) would on occasion catch animals protected under the Endangered Species Act, namely the Hawaiian monk seal and the green sea turtle.

Longline vessels were also known to be catching and killing substantial numbers of albatross that nest in the NWHI. This led the Council to implement the mandatory deployment of federal observers on the longline vessels and the imposition of a closed areas or cordon sanitaire extending for 50 nm around the NWHI.

A similar area closed to longline fishing was also imposed by the

Council around the main Hawaiian Islands in response to complaints from small vessel commercial and recreational pelagic fishermen that longliners were fishing too close to shore and competing with them.

They argued that the longline boats could range over wide areas of the ocean to find fish, while they, the small vessels fishermen were at the mercy of prevailing weather and sea conditions and did not want the additional competition from longliners. The development of closed areas around the entire Hawaiian archipelago also led the Council to implement a vessel monitoring system, where a radio beacon reports vessel position at regular intervals to a monitoring post.

The displacement of the longline fishery from shore solved the problem of interactions between monk seals, green turtles and small boat fishermen.

However, longline vessels continued to interact with other marine turtles (Loggerheads,



Steve Beverly

*The F/V Kaimi is one of the longliners operating from Hawaii*

Leatherbacks, Olive Ridleys) and to catch and kill albatrosses. In the USA, all marine turtles are protected under the Endangered Species Act (ESA) and the provisions of the ESA require the agency responsible for turtles, in this instance the National Marine Fisheries Service (NMFS), to produce a biological opinion (BO) where there is interaction and mortality from an enterprise such as fishing.

Under the BO, the agency must determine the level of interactions and mortalities and compare these with population dynamics of the affected populations. The BO can then set limits on the volume of interactions and mortalities, which, if exceeded, require a fresh BO.

NMFS has produced estimates of the turtle takes and kills from the Hawaii fishery over a number of years and on occasion the threshold values were exceeded requiring fresh consultations to generate a new BO.

All migratory seabirds are protected under the Migratory Bird

Treaty Act, including the Laysan and Black-footed albatrosses, which have the largest nesting populations in the NWHI. Also present in the NWHI are two to three species of Short-tailed albatross that are part of a global population of 1,000, and are protected under the ESA.

For these reasons the Council implemented further measures in late 1999 to minimize seabird interactions through additional regulations. These include the mandatory use of at least two of a range of measures to reduce seabird interactions, and makes attendance at a annual protected species training workshop compulsory for longline vessel owners and skippers.

The research addressing these interactions with turtles and albatrosses also revealed that the majority of incidents were associated with vessels fishing primarily for swordfish.

Interactions between turtles and albatrosses, and vessels targeting primarily bigeye tuna, were

one or more orders of magnitude less than those with swordfish. Further, vessels targeting swordfish tend to fish to the north of Hawaii, along the convergence zone of warm tropical water and cooler water from the northern Pacific, while vessels fishing for tuna are predominantly in the warmer waters to the south of Hawaii.

## Litigation

In February 1999, Earthjustice filed a law suit on behalf of the the Center for Marine Conservation and Turtle Island Restoration Network against the National Marine Fisheries Service, accusing NMFS of negligence in its duty to protect endangered sea turtles. The plaintiffs were concerned about all marine turtles but focused on the Leatherback turtle, as populations in the Pacific have declined considerably over the past two decades.

During the hearing in November 1999, federal court judge David Ezra, found in favor of the defendants (NMFS)



Steve Beverly

*Setting the longline on board F/V Mary M, longliner operating in Hawaiian waters*

with respect to their ESA biological opinion on the marine-turtle and Hawaii-based longline fishery interactions. This meant that while interactions and some mortalities occurred, the judge agreed with the defendants that this had little influence on turtle populations.

However, the judge agreed with the plaintiffs that NMFS was delinquent under another government statute, the National Environmental Policy Act (NEPA). Under NEPA, federal policies, laws and regulations must be assessed with respect to their impact on the environment.

This includes an analysis of the impacts of a proposed action and of alternatives to a proposed action. The basic purpose of NEPA is to ensure that federal officials give appropriate consideration to environmental values in policy formulation, decision-making and administrative actions, and that the public is provided adequate opportunity to review and comment on major federal actions.

The document generated through the NEPA process is the environmental impact statement (EIS). The draft document is published and made available for public comment and notices are posted in the US Government's Federal Register announcing availability.

Following the draft EIS publication, meetings are convened to take comment from the public. Where a measure was not deemed to have a major envi-

ronmental impact, an environmental assessment is produced and reviewed for a finding of no significant impact.

At the time that litigation commenced, the most recent EIS for the pelagics produced by NMFS and Western Pacific Council was part of the document containing amendment 7 to the PFMP. This was published in 1994, and the judge agreed with the plaintiffs that this was out of date. Further, he agreed that there was no evidence that either NMFS or the Hawaii-based longline fishery had made any attempt to reduce interactions with and mortalities of turtles caught by longliners.

As such he was inclined to provide a temporary measure of relief until an up-to-date EIS had been produced. Based on data provided by NMFS it was apparent that the majority of turtle interactions, particularly with Loggerheads and Leatherbacks, occurred to the north of Hawaii, and were possibly associated with the oceanic convergence zone.

The judge therefore closed off an area of ocean north of 28° N and between 150° and 168° W. The judge also ordered all vessels to carry clippers and dip nets to untangle any hooked turtles.

The judge's order also requested NMFS to conduct an analysis of the best combination of time-area closures and for the parties in the case to review the results and make their own recommenda-

tions. Three scientists representing the plaintiffs, the defendants and the defendant intervener, the Hawaii Longline Association (HLA) reviewed NMFS's analysis in April this year.

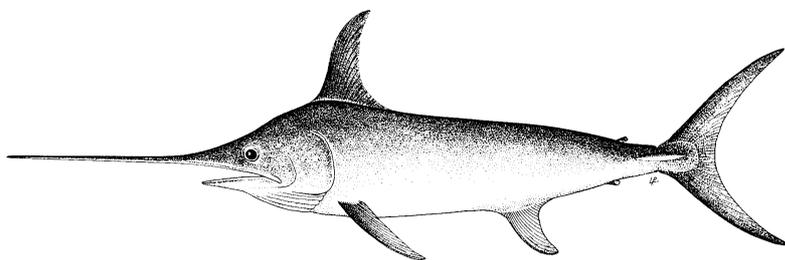
Each then filed a report with the judge. As might be expected the various options presented by the three parties ranged from widespread closures both to the south and north of Hawaii, to no closures and increased observer coverage.

On June 23, Judge Ezra announced his order for the fishery. This included a closure of all waters between 30° to 44 °N and bounded by 137°W and 173°E latitude, with fishing south of 30°N to 6°N reduced by 95 % of average annual effort and with 100% observer coverage, and closure of this area in April and May. The judge's ruling included waters to the south of Hawaii as a few Leatherback interactions were recorded south of the Hawaiian chain.

The judge's order would effectively have meant the end of all longline fishing in Hawaii. Following an intense period of protests and TV and press campaigns launched by the HLA a stay was placed on the execution of the order and Judge Ezra agreed to work with the parties to seek a reasonable compromise.

The compromise solution acknowledges that the Hawaii longline fishery is not homogeneous and that vessels targeting swordfish are responsible for the majority of interactions with turtles and other protected species.

It maintains more or less the same area coordinates, but the southern boundary is now at the equator. Fishing north of 30° N is banned except for a limited number of sets for scientific observations which must all be



accompanied by observers. The two-month closure from mid-March to May will also have a serious effect on the fishery, but the completion of the EIS by 1 April 2001 may negate this part of the judgement.

## Consequences

About one third of the Hawaii longline fleet targets swordfish or a mix of swordfish and tuna, and accounts for about half of the annual US domestic swordfish production. Given the terms of the judge's order, swordfish fishing is effectively stopped in Hawaii until the EIS is published.

However, there is no guarantee that there may be any relaxation of these measures once an EIS has been published. Indeed, even stricter measures could be implemented by the court if it sees fit. Swordfish prices in the US will likely rise as a consequence of the shortfall in the market and more swordfish will likely be imported; ironically caught by fleets not as well regulated as US longliners.

Longline fishermen will be faced with a choice, either to move to another US port and continue to fish for swordfish, or to convert to fishing for tuna. This requires re-rigging the longline and fitting a line thrower to set line in deeper catenary curves in the ocean. The cost of a line thrower is about US\$ 6,000.

Many swordfish vessels in the fleet re-locate for part of the year to California to fish closer to the US mainland, leaving

Hawaii usually around October and returning early the following year.

In 2000, there may be an earlier migration to California with more vessels electing to home-port there rather than in Hawaii, at least until the issue is finally resolved with the publication of the EIS in April 2001. As much as one third of the 115 vessel longline fleet may eventually home-port elsewhere, which will clearly have a negative effect on the businesses which supply these vessels.

Hawaiian fish dealers will also feel the loss of fish if a large fraction of the fleet moves elsewhere and no swordfish production. Further, the knock-on effects will be felt through the Hawaiian economy, including businesses such as the airlines that used to ship most of the swordfish catch to the US mainland. Even if swordfish fishing recommences in the future, Hawaii fish dealers may not be able to win back old markets.

Even the eventual production of an EIS is no guarantee to an end to litigation. It is possible that the plaintiffs will continue to litigate, arguing that the EIS is inadequate and that Leatherback populations are in so perilous a state that the loss of even one animal to the Hawaii longline fishery is unacceptable.

Further, a notice of intent to sue under the ESA litigation was brought against NMFS by Earthjustice in May this year for not taking sufficient action with respect to putative interactions between the Hawaii longline

fishery and Short-tailed albatrosses. Some in the United States are concerned that fishery management is increasingly being conducted by the courts as a result of litigation, rather than through the Council process as mandated by the Magnuson Act.

The actual impacts on turtle populations brought about through the restrictions on the Hawaii longline fishery will be negligible. Major threats to marine turtles such as the Leatherback include the loss of nesting habitat through shoreline development for tourism and harvesting of eggs.

Further some fisheries such as the Peru and Chilean gillnet fisheries are thought to represent the major threats to Leatherback populations, which have declined in proportion to the expansion of these fisheries through the 1980s and 90s. Only concerted international action will save turtles, through establishing the level of danger to turtles by various coastal and high seas fisheries and by developing mitigation measures and strategies to reduce interactions and mortalities.

Not surprisingly, the 20th Annual Symposium on Sea Turtle Biology and Conservation held in February and March this year recommended an international plan of action (IPOA) for turtles taken by longline fisheries, comparable to the United Nations IPOA for seabirds and for sharks. The Symposium also adopted a broader resolution covering reduction of turtle interactions with all fisheries.

