



Summary of the Northwestern Hawaiian Islands (NWHI) Lobster Fishery

Current Issues and Concerns

- NMFS closed the fishery in 2000 due to stated concerns regarding uncertainty in the population assessment model in response to litigation. A 29 September 2000 NMFS declaration proposes to keep the fishery closed for up to two years more, while allowing research at the major banks.
- The fishery has been closed by court order (15 November 2000) due to potential harm to the endangered Hawaiian monk seal. While lobster have been recorded in the diet of monk seals, no conclusive evidence exists regarding the importance of lobsters as prey species in their diets. The FMP includes measures to mitigate and monitor fishery-monk seal interactions: 1) 20 nmi closed area around Laysan and 10 fm closure around all islands, 2) maximum size restriction for lobster trap opening to prevent seal entrapment, 3) authority for NMFS RA to place observers or close the fishery if needed (e.g., to investigate seal mortality possibly caused by fishery and recommend additional protective measures), 4) harvest guideline and mandatory trap escape vents reduce impacts on seal prey, 5) prohibitions on nets, explosives and poisons reduce potential harm to seals, 6) “retain-all” harvest strategy reduces impacts from seals feeding on discarded lobsters.
- Interactions of the lobster fishery with coral reef resources/habitats are limited and poorly known. Some coral pieces (both live and dead) have recently been observed in trap-hauls, but is unquantified and additional research is needed. Observer reports from Area 4 in 1999 included anecdotal comments that baseball-size and larger pieces of corals (e.g., *Pocillopora* heads and branching *Acropora*) were observed in traps and lines from some hulls.
- Potential for vessel groundings also exist in the NWHI fishery. In the past two decades only one permitted lobster vessel ran aground. A survey two years later found only limited damage.
- The estimates of high level of discarded lobsters (50-60%) and their subsequent mortality (50-70%) under the “retain-all” strategy (where all lobsters caught are counted against the quota) are now being questioned (total mortality may not actually be this high).

Description of Fishery

- Full development of the NWHI lobster fishery was realized the late 1970s, following surveys by NMFS that underscored the commercial potential; the FMP for the lobster fishery was adopted in 1983. Landings reached a record high by 1988.
- In the early 1990s lobster catches fell dramatically, but not due to overfishing. A long-term cyclic change in abundance was produced by a broad climate-induced reduction in overall oceanic productivity which resulted in lower abundance of resources throughout the food web of the NWHI. The FMP was amended accordingly (e.g., limited entry, fleet-wide seasonal harvest quota).
- The NWHI lobster fishery is a million-dollar industry in which commercial fishing vessels target red spiny and slipper lobsters.
- Lobster populations in the NWHI are considered healthy. Maximum Sustainable Yield (MSY) for the NWHI is estimated to be about 220 mt (300,000 lobsters). The harvest guideline in recent years has been substantially less.
- NWHI banks most important to the fishery include Necker, Maro and Gardner, followed by Pearl and Hermes, Kure, Lisianski and Nihoa at depths between 10 to 35 fathoms.
- Participating vessels use Fathoms Plus dome-shaped traps molded from black polyethylene (2.5' x 3.2' x 1') with lead weights. Each trap has two entrance cones located on opposite sides of the traps with sizes specified by regulation.
- The traps also have two escape vents comprised of four circular holes at least 2½ inches in diameter, that allow for the escape of undersized lobsters and incidental catch such as octopus (this significantly reduces take of non-target species). Bycatch, as determined by experimental traps without escape vents includes (in decreasing order of abundance) hermit crabs, reef fish, other crabs, moray eels, other lobsters, molluscs and small sharks. The amount of bycatch is much less in commercial traps with mandatory escape vents. Lobsters can exit the traps and utilized them as shelter.
- Typically traps are set in areas of relatively low structural relief, away from coral reef habitat, in strings of several hundred (typically about 800 per day) and baited with chopped mackerel.
- Participants complete a NMFS Daily Lobster Catch Report after each set, which records the number of spiny lobsters, slipper lobsters, Kona crab, octopus and other animals kept and the number discarded. The number of monk seals, turtles, and other protected species observed in the area are also recorded, as well as the areas fished, weather condition and date and time of gear set and haul.

- A State report is also required, which summarizes the number and weight of lobsters caught and weight sold.

Summary of Regulations

- Lobsters may only be taken by lobster trap or by hand (use of nets, chemicals, explosives, hooks or spears is prohibited).
- Traps must have escape panels, with specified opening size, and are limited to 1,100 (assembled) per vessel (1,200 total traps); traps may not be left unattended in the water except in the event of an emergency.
- Closed areas include: 20-nmi (protected species zone) around Laysan Island and all federal waters shallower than 10 fathoms (federal waters 0-50 fm around French Frigate Shoals and the north half of Midway are also proposed under the draft Coral Reef Ecosystem FMP).
- Closed season for NWHI fishery (January–June; the fishery typically only lasts one to a few months a year).
- Mandatory logbook program and (if requested) data collectors/observers.
- Limited entry program (15 maximum permits, of which only about half participate in a given year).
- Retain-all fishery due to low survival of released lobsters (in the four years prior to this amendment about 50-60% of the entire lobster catch (270,000-1,500,000 lobsters per year) was discarded [as required by minimum size and egg-bearing prohibitions] and mortality [due to high predation and deck exposure] of discards was estimated at 50-70%, i.e., 70,000 to 540,000 lobsters lost).
- The annual harvest guideline for the NWHI fishery is determined based on 13% (constant harvest rate) of the estimated exploitable lobster population (i.e., those lobsters taken in traps). This allows no more than a 10% risk of overfishing.
- Lobster permitted vessels required to have operational vessel monitoring system (VMS) to transit through NWHI lobster grounds during closed season (voluntary VMS also facilitates enforcement).
- Bank-specific harvest guidelines (which sum to the total NWHI annual harvest guideline or quota) established for the three primary banks (Necker, Maro and Gardner) and the remaining area (all other banks = Area 4) in 1998; purpose of measure is to help review pressure at heavily targeted banks and prevent possible local bank depletion; this resulted in some vessels fishing in non-traditional grounds of known lower productivity, and consequently reducing overall CPUE.

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