



Informational Sheet Hawaiian Monk Seals

- The monk seal population decline at FFS came after a sevenfold population increase at the atoll between the 1960s and 1980s, following the US Coast Guard abandonment of its LORAN operations at the atoll. Monk seal populations at all other islands and atolls in the NWHI are increasing or stable.
- Major factors negatively affecting the monk seal populations are shark attacks, aggressive males mobbing females and pups, human disturbance (leading to the abandonment of preferred pupping beaches, premature weaning and pup abandonment) and entanglement in marine debris. (See the *Animal Planet* TV segment featuring William Gilmartin, head of the Monk Seal Recovery Team.) An estimated 25% of recent juvenile seal deaths at FFS were due to sharks.
- Emaciation due to lack of prey is a possible factor impeding monk seal recovery at FFS. The two leading hypotheses for a lack of prey at FFS are 1) the local population reached its carrying capacity in the 1970s and 1980s and essentially diminished its own food supply, and 2) carrying capacity was simultaneously reduced by temperature-related changes in oceanographic conditions and a resulting decrease in productivity. (See the NMFS 1997 report "Hawaiian Monk Seal ... Stock Definition and Geographic Range.")
- Disease and environmental toxins (e.g., PCBs) are likely contributing factors to the low survival of monk seal pups. All weaned pups sampled at FFS contained *Salmonella* bacteria ("Health Assessment and Disease Status Studies of the Hawaiian Monk Seal, By A. Alonso Aguirre, DVM, PhD, January 2000). Contamination from fecal material from high densities of seabird, sea turtles and seals is suspected. Ninety-nine percent of Hawaiian green sea turtles nest at FFS. There is no convincing evidence that marine toxins (e.g., ciguatoxin) are impacting monk seals.
- Monk seals are opportunistic feeders on a wide-range of prey items, making quantification of their diet composition extremely difficult. Findings to date from a Hawaiian monk seal fatty acid study to determine the dietary characteristics of monk seals are preliminary and inconclusive.
- The total bottomfish and lobster harvest from the 11,500 km² of reef in the NWHI are extremely conservative, i.e., about 415 tons. By comparison, two species of ulua annually consume an estimated 30,000 tons of monk seal prey items at FFS alone. (See the 1991 study published in *Fishery Bulletin*, vol. 89, issue 3.)
- From 1991 to 1997, no lobster fishing took place off FFS; in 1998 and 1999, only about 1 percent of the lobster caught in the NWHI (e.g., 700 lobsters in 1999) were taken off FFS. About 4 percent of the bottomfishing effort in the NWHI (i.e., two trips) occurred at FFS.
- Weaning weights and girth size of monk seal pups have increased in recent years at most NWHI sites, including FFS. (See attached NMFS chart presented to the Council in February 2000.)

Trends in Axillary Girth of Weaned Hawaiian Monk Seal Pups at 5 Subpopulations

