



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
Honolulu Laboratory
P. O. Box 3830
Honolulu, Hawaii 96812

June 22, 1981

F/SWC2:GHB

TO: William Gilmartin, Leader, Marine Mammal and Endangered Species
Investigation

FROM: George H. Balazs, Fishery Biologist *George H. Balazs*

SUBJECT: Some conservative management ideas for the enhancement of the
Hawaiian monk seals at French Frigate Shoals

My recent involvement in salvaging an abandoned monk seal pup on East Island has prompted me to consolidate in writing some management ideas for your consideration. The following represents these thoughts.

1. At French Frigate Shoals, monk seals are known to occasionally a) abandon a pup well before weaning age, b) have a pup leave its biological mother and receive maternal care with another mother and pup, and c) have a fully weaned and healthy pup receive maternal care with another mother and pup. As examples, two early-weaned pups were recorded on East Island one week prior to our arrival in June of 1980, and two pups nursed by one mother were present on Whale-Skate in June of 1980, and on East in March and June of 1981.

In the case of (a) of the above, a pup in this condition is clearly doomed and lost to the population. If a mother can be found that has experienced the recent mortality of a pup, the abandoned pup could be transported to her in an adoption attempt. If no such mother is available, or if adoption is not successful, then efforts should be made to raise the pup in captivity, either in Hawaii or on the mainland, for eventual return to the wild.

In the cases of (b) and (c), if left on their own, either one or both of the pups could be expected to be significantly underweight when weaned. Removing one of the pups to captivity, or to an adoptive mother, would therefore enhance the survival of both individuals. If the pair includes a previously-weaned gray pup, this individual could be transported and released on another island within French Frigate Shoals. Presumably it would not immediately find its way back to the receptive mother.

2. In June of both 1980 and 1981 I have found severed pieces of small-diameter intestines at East Island that almost certainly originated from young monk seals. I have concluded that this is the result of shark attack, particularly in view of the fact that amputated and mutilated flippers and tails of green turtles are seen each year. Tiger sharks are reported to be abundant at French Frigate Shoals, but it would appear that relatively few individuals develop a feeding pattern that brings them close to the islands where seals, turtles, and albatrosses breed. It therefore may be possible to selectively eliminate these "rogue" sharks by setting a few baited hooks at key locations.

Admittedly there is some speculation in this hypothesis. However, it could be tested with a minimum of effort and expense and, if correct, would serve as a valuable management aid.

French Frigate Shoals is an ideal location for trying to enhance, in a conservative manner, the endangered monk seal and threatened green turtle. It is the major breeding site for both species, as well as a National Wildlife Refuge with resident biologists, relatively easy access to the various islets, and frequent air transportation to Honolulu. We should consider doing more at this location while such advantages still exist.