

INPFC
DOCUMENT
Ser. No. 2876
Rev. No.
.....

PROPOSED PLAN FOR U. S. RESEARCH ON
DALL'S PORPOISE FOR 1985

by
Linda L. Jones
National Marine Mammal Laboratory
Northwest and Alaska Fisheries Center
National Marine Fisheries Service, NOAA
Seattle, Washington

NOT TO BE CITED

The objectives of the U.S.-Japan cooperative research program are to assess the impact of the Japanese high seas gillnet fisheries on Dall's porpoise and to find ways to reduce marine mammal entanglements by the fisheries. The basic elements of the research program are described in the Memorandum of Understanding (MOU) signed by the Governments of the United States and Japan in 1984 and the General Permit issued under the U. S. Marine Mammal Protection Act in 1981. The U. S. will participate in field research and laboratory analyses during 1985.

FIELD RESEARCH

I. Monitoring of the Incidental Take

The monitoring program established in 1981 under the General Permit and the 1984 MOU will be continued. A Japanese marine mammal biologist employed by the Japan Fisheries Agency and two U. S. marine mammal biologists will board catcherboats in each Japanese salmon mothership fleet to monitor the incidental take of marine mammals, sea birds, chinook salmon and other organisms in the gillnets. Training of biologists will be conducted by the National Marine Fisheries Service, Seattle, Washington.

The biological observers will record data on the distribution, numbers and species of marine mammals and other marine organisms in the gillnets, environmental conditions, presence and behavior of the marine mammals near the vessels and gillnets, location of animals in the gillnets, and gear characteristics for each gillnet

operation. In 1985, fifty percent of the catcherboats in each fleet are to be equipped with modified gear or use modified techniques to reduce marine mammal entanglements. One U. S. observer in each fleet will monitor vessels with modified gear for comparison with boats using standard gear.

The marine mammal biologists onboard catcherboats and the captains of each catcherboat, including scoutboats, will transmit daily reports of the incidental take of marine mammals to the U. S. biologist onboard each mothership. The report will include for each marine mammal species the number taken dead and returned to the mothership, number taken alive and released, and number taken but lost during retrieval. Information will be recorded on the condition of released animals, the cause of loss of animals, and, when possible, the approximate size of animals lost. The size categories are newborn (about 100 cm in body length), medium (about 150-180 cm), and large (more than 180 cm). Biologists on the motherships will then transmit these reports of the observers and catcherboat captains daily to the National Marine Fisheries Service for analysis to project the date of reaching the marine mammal quotas and closure of the fishery within the U. S. Fisheries Conservation Zone (FCZ).

The catcherboats with observers onboard will operate in different locations within the fleet to ensure that there is no effect of position on the data. The Fleet Commander in each mothership fleet will determine the location of the observed vessels in that fleet.

II. Population Estimation

U. S. biologists on Japanese salmon catcherboats, and U. S. Platforms of Opportunity Program research vessels in the eastern North Pacific, will collect sighting data for estimating abundance of Dall's porpoise. Cruises will be in previously surveyed areas for comparison of annual distributional patterns of Dall's porpoise as well as in other areas and times of year.

III. Biological Studies

One U.S. biologist will be aboard each Japanese salmon mothership to collect biological specimens and information from Dall's porpoise and other marine mammals returned to the mothership. All animals will be measured, sexed, recorded by specimen number, and photographs taken. Biological samples will include teeth, reproductive tissues, vertebral epiphysis, heads, parasites, tissues as well as some other specimens. The females will be examined for presence of a fetus, and lactation. Whole specimens (4) will be frozen aboard each mothership for dissection, and for training biologists for the 1986 field season at the National Marine Mammal Laboratory, Seattle, Washington.

South of the U.S. FCZ prior to the opening of the U.S. FCZ for fishing, at least 10 Dall's porpoise per mothership will be frozen for dissection by U.S. biologists after boarding on 10 June. After 25 June, if the vessels operate north of the U.S. FCZ, a Japanese national will continue collection of specified biological specimens and data from all porpoise returned to the mothership.

IV. Acoustic Studies

Laboratory experiments will be conducted to determine the target strength of standard gillnet as well as the target strength of the hollow tube gillnet. Variation in target strength, dependent upon the angle of incident sound, will be investigated. Various frequencies will also be tested to determine the "optimal" frequency of detection by Dall's porpoise. Recordings of Dall's porpoise in local waters (State of Washington or British Columbia) will be made to increase the amount of information on acoustic signals produced by this species. If possible, captive dolphins in oceanariums will be tested for their responses to net materials.

V. Monitoring of Chinook Salmon Catch

In accordance with the agreements between Japan and the U. S., marine mammal observers will monitor the catch of chinook salmon onboard the catcherboats. The number entangled that are landed and that drop out will be recorded.

LABORATORY ANALYSES

I. Incidental Take

Estimates of the total incidental take in 1985 will be calculated using data collected by observers on catcherboats. Data will be examined to determine whether the observer coverage is uniform and to determine areal, seasonal and annual differences in the take as well as the relationship with the catch of various salmon species.

II. Abundance Estimates

Census data will be analyzed to refine estimates of the population abundance of Dall's porpoise. Geographic areas will be subdivided as a means of possibly improving the estimates and improving information on the distribution. Line transect methodology will be used in addition to strip transect methods.

Data collected in 1982-1984 on the response of Dall's porpoise to survey vessels will be analyzed to determine whether correction factors based on the response of the animals can be used to refine the abundance estimates.

III. Biological Parameters

Biological specimens collected in 1985 will be examined in the laboratory. Age of animals will be determined from growth layer groups in teeth. Subsamples of teeth from previous samples (1981-1984) are currently being processed. Age at first reproduction, reproductive and growth patterns will be verified. Stomach samples collected since 1980 from various areas have been processed and manuscripts are being prepared on the food habits of Dall's porpoise in the western North Pacific and Bering Sea. Composition of the take will be examined to determine whether changes occur temporally or spatially.