

SALMON TAGGING BY THE 1952 JAPANESE NORTH PACIFIC FISHING EXPEDITION

By C. J. Burner*

The Japanese re-entered the salmon fisheries of the North Pacific Ocean west of longitude 175° W. during 1952^{1/} with a fleet of 3 motherships and 50 catcher boats. Accompanying and patrolling the fleet were three fully-equipped and heavily-staffed oceanographic-exploratory research vessels of the Japanese Fisheries Agency. These ships ranged 400 miles or more from the mothership in all directions. Their purpose was to keep the fishing fleet within the area of operations authorized by the Japanese Government and to recommend fishing areas on the basis of abundance of plankton and suitable temperatures. Thus, in 1952 the Japanese fleet fished south of the Aleutians because the sea north of the chain was considered too cold. In addition to standard oceanographic equipment, the three vessels carried nets and long lines for exploratory-fishing and salmon-tagging operations.

The tagging experiments done by the Japanese, while limited and inconclusive, clearly demonstrate that salmon can be taken in numbers and good enough condition for marking or tagging on the high seas.

Since a Bering Sea and North Pacific tagging experiment to determine the degree of mixing or demarcation of Asiatic and Alaska stocks of salmon is being considered by the U. S. Fish and Wildlife Service, the methods and results of the Japanese tagging are of considerable interest. A summary of the results of the tagging done in the North Pacific in 1952 was prepared by the Japanese Fisheries Agency and forwarded by William C. Neville, Fisheries Attache at the United States Embassy at Tokyo, Japan.

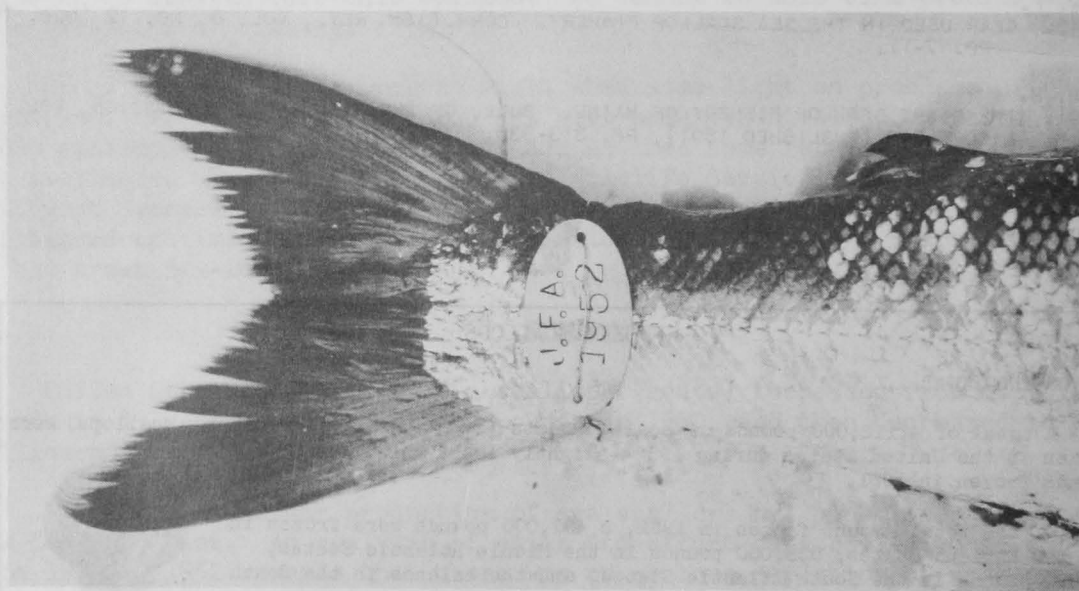


FIGURE 1 - METHOD OF ATTACHMENT OF JAPANESE CAUDAL PEDUNCLE TAG.

*ASSISTANT CHIEF, PACIFIC SALMON INVESTIGATIONS, BRANCH OF FISHERY BIOLOGY, U.S. FISH AND WILDLIFE SERVICE, SEATTLE, WASH.

^{1/}FOR A FULL ACCOUNT OF THIS EXPEDITION SEE FUKUHARA, F. M.: "JAPANESE 1952 NORTH PACIFIC SALMON-FISHING EXPEDITION," COMMERCIAL FISHERIES REVIEW, VOL. 15, NO. 2 (FEBRUARY 1953).

According to the report, 2,419 salmon were tagged between May 20 and June 18, 1952. Of this number 1,175 were chum salmon (*Oncorhynchus keta*), and 1,244 were red salmon (*Oncorhynchus nerka*). The tag used was a red (on red salmon) and a pink (on chum salmon) celluloid oval stamped with the letters JFA (Japanese Fisheries Agency), the year, and a serial number on the reverse side. It was attached to the fish with a 0.4 mm. silver-coated copper wire so that it encircled the caudal peduncle like a bracelet (see fig. 1). The tags are "dished" slightly to conform to the body curve of the fish.

The size of the fish tagged is given as 45 cm. to 65 cm., with a 55 cm. mean, on the basis of "forked length." This is for both species. It is possible, therefore, that all salmon tagged were mature and in the spawning year. No further data are given.

The Agency reports that gill nets were used to capture the fish prior to tagging. However, in conversations aboard the *Tenyo Maru*, the United States biologist F. M. Fukuhara obtained the distinct impression that long lines were also used, and that salmon thus caught were in much better condition for tagging. The Agency reports that long lines were fished, found unsuccessful, and not used for actual tagging. Dates and locations of tagging are given in the table.

Of the 2,419 salmon tagged, three fish were actually recovered in the Japanese nets, but one of them escaped. The two recaptures were chum salmon tagged on June 2

| Time and Place of Salmon Tagging by the Japanese Fisheries Agency in the North Pacific in 1952 | | | | | |
|--|-----------|------------|--------|-----------|------------|
| Date | Place | | Date | Place | |
| | Latitude | Longitude | | Latitude | Longitude |
| May 20 | 51°54' N. | 179°56' W. | June 4 | 50°47' N. | 179°05' W. |
| 22 | 50°08' N. | 177°55' W. | 5 | 50°50' N. | 179°31' W. |
| 23 | 49°46' N. | 179°00' W. | 9 | 51°07' N. | 178°15' W. |
| 25 | 50°37' N. | 179°41' W. | 12 | 51°26' N. | 179°32' W. |
| 30 | 51°43' N. | 177°47' W. | 13 | 51°05' N. | 179°13' W. |
| June 1 | 51°26' N. | 177°52' W. | 14 | 51°10' N. | 178°19' W. |
| 2 | 50°20' N. | 178°00' W. | 15 | 51°17' N. | 176°09' W. |
| 3 | 50°31' N. | 178°23' W. | 18 | 52°21' N. | 172°49' W. |

NOTE: DATA ON THE NUMBER OF FISH TAGGED AT EACH LOCATION NOT YET AVAILABLE.

and retaken on June 5 at the following locations: Tag No. 3 (pink color) at 50°29' N. latitude, 177°45' W. longitude; and Tag No. 1206 (pink color) at 50°28' N. latitude, 177°45' W. longitude. Both fish swam approximately 14 miles in a northwesterly direction toward Kiska Island before recapture, assuming straight-line movement.

Two tags (numbers unknown) were reported on red salmon passing through the weir at Egegik River, Bristol Bay, on July 1 and July 7, respectively. These tags were not recovered, but the detailed description given by the weir watchman gives some indication that the tags were placed on the fish by the Japanese Fisheries Agency a month or so earlier and about 1,000 miles away.

No conclusions are drawn by the Agency or by the Service. The few returns and the short distance traveled by chum salmon preclude any attempt to define the migratory behavior, or to distinguish the stocks of salmon in the North Pacific Ocean.

CORRECTIONS

The following errors occurred in the article "Japanese 1952 North Pacific Salmon-Fishing Expedition" by Francis M. Fukuhara, *Commercial Fisheries Review*, vol. 15, no. 2 (February 1953):

Page 1, paragraph 1, line 5 - "north of Atka Island" should read "west of Atka Island"

Page 4, last paragraph, line 3 - "400 miles south of Kiska" should read "90 miles south of Kiska."

