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**TAG RETURNS AND RELEASES IN 1994 -
UNITED STATES HIGH-SEAS SALMON TAGGING**

by

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TAG RETURNS AND RELEASES IN 1994 - UNITED STATES HIGH-SEAS SALMON TAGGING

ABSTRACT

The Fisheries Research Institute (FRI), School of Fisheries, University of Washington, serves as the processing center for all North American recoveries of Canadian, Japanese, Russian, and U.S. high-seas salmonid (*Oncorhynchus* spp.) tags and recoveries of U.S. high-seas salmonid tags by all nations. An all-agency (Canada, Japan, Russia, and United States) high-seas tag release and recovery computer data base (1954-present), maintained and updated by FRI, is available upon request from the national sections of NPAFC, so that all member nations can have access to a common data base. From September 1, 1993, through August 31, 1994, only two high-seas tags, one U.S. tag and one U.S.-Japan tag were returned to FRI (Table 1). Both tags were found on coho salmon, one in the Kamchatka River, Russia, in 1982 and one in Salomie Creek, Kodiak Island, Alaska, in 1993. In 1994, 58 salmonids with U.S. tags were released during a cooperative U.S.-Japan tagging experiment aboard the T/V *Oshoro maru*. International cooperative high-seas salmonid tagging experiments have been conducted since 1954, and the number of salmonids tagged and released by all nations in Convention waters in 1994 (71 fish) was a record low. The long-term high-seas salmonid tag recovery database, along with information from high-seas recoveries of coded-wire tagged fish, continues to provide fisheries researchers, managers, and enforcement agents with the only unequivocal information on stock origins of salmonids in Convention waters. The North Pacific Anadromous Fish Commission (NPAFC) forum provides a new opportunity for better coordination, planning, and implementation of high-seas tagging experiments than was possible in the past. Carefully planned high-seas tagging experiments, designed to answer specific questions of interest to NPAFC, should be included as a part of the overall research program to identify stocks of salmonids in the Convention area and adjacent waters.

INTRODUCTION

The Fisheries Research Institute (FRI), School of Fisheries, University of Washington, serves as a processing center for all North American recoveries of Canadian, Japanese, Russian, and U.S. high-seas salmonid (*Oncorhynchus* spp.) tags and recoveries of U.S. high-seas salmonid tags by all nations. Processing center activities include (1) advertising for tag recoveries, (2) returning tags and original recovery information to the appropriate release agencies, (3) mailing information on tag recoveries and a tag reward to fishermen and processors, (4) maintaining a file of original correspondence, data, and tags of all recoveries of U.S., U.S.-Russia, and U.S.-Japan tags (1956-present), (5) maintaining and updating an all-agency tag release and recovery computer data base, and (6) reporting all recoveries of U.S., U.S.-Russia, and U.S.-Japan high-seas tags to the North Pacific Anadromous Fish Commission (NPAFC). In addition, FRI scientists periodically prepare reports and maps based on historical recoveries of high-seas tags that describe the known ocean ranges of major regional stocks of Asian and North American salmonids (for example, Myers et al. 1990). The complete all-agency (Canada, Japan, Russia, and United States) high-seas tag release and recovery computer data base (1954-present) is available from FRI upon request from the national sections of NPAFC so that all member nations can have access to a common data base.

This is a report of all recoveries of U.S. high-seas salmonid tags returned to FRI between September 1, 1993, and August 31, 1994. Releases of salmonids tagged during 1994 cooperative U.S.-Japan tagging experiments are also reported. The results are

discussed with respect to the historical data base and the importance and relevance of high-seas tagging experiments to the NPAFC.

RESULTS AND DISCUSSION

Tag recoveries

A double-tagged coho salmon (*O. kisutch*, U.S. tag no. EE0047 and Japan tag no. KK1047) was caught by a sport fisherman in Salonie Creek, Kodiak Island, Alaska, in September 1993 (Table 1a). The fish was tagged and released by U.S. and Japanese scientists, who conducted a double-tagging experiment aboard the Japanese research vessel *Oshoro maru* in the central Gulf of Alaska in July 1993 (Walker 1993). In this experiment, two disk tags, one U.S. tag with FRI's address and one Japanese tag, were attached to the fish with a single plastic cinch strap. Double-tagging experiments were initiated by FRI in 1993, in response to information that recoveries of Japanese and Canadian high-seas tags were not being reported by Alaskan fishermen because the fishermen were concerned that the tags might indicate Japanese or Canadian origin of the fish.

Tag no. O666 was recovered from a coho salmon caught in the Kamchatka River, Russia in 1982 (Table 1b). The fish was released in 1982 by FRI biologists during tagging experiments aboard the fishing vessel *Kristen Gail* in the central North Pacific (International North Pacific Fisheries Commission (INPFC) statistical area E7546; Harris et al. 1983). The tag was returned by a retired Russian fisherman, who said in his letter, "we have a proverb: better late than never." His letter and the 1982 tag were mailed from Rostov-on-Don, Russia, in December 1992 and received at FRI in March 1994. This is the first U.S. high-seas salmonid tag to be returned directly to FRI by a Russian fisherman. As a part of recent advertising campaigns, FRI is encouraging fishermen to return old high-seas tags. Even if the recovery information is incomplete, these tags can provide invaluable stock-specific information on ocean distributions and migration patterns of salmonids.

As a reward to fishermen and others for the return of high-seas tags, FRI sends a baseball cap embroidered with the high-seas tagging emblem (a jumping salmon on the background of a red and white high-seas disk tag). Phrases in English, Japanese, and Russian around the border of the emblem symbolize the cooperative efforts of fishermen, fish processors, and biologists from four nations (Canada, Japan, Russia, and the United States) in determining origins, ocean distributions, and migrations of Pacific salmon and steelhead (*O. mykiss*) through international cooperative tagging studies.

Tag releases

In 1994, FRI biologists cooperated with Hokkaido University faculty, staff, and students in high-seas tagging experiments aboard the T/S *Oshoro maru* in the Gulf of Alaska (Walker et al. 1994). Fifty-eight salmonids double-tagged with U.S. and Japanese tags were released in Convention waters (Table 2). Serial numbers for the Japanese tags are reported by Azuma (1994). Azuma (1994) also reports release information for an additional 13 salmonids tagged with Japanese tags during 1994 *Oshoro maru* longline operations in international waters that occurred prior to boarding of the vessel by FRI biologists. To our knowledge, the *Oshoro maru* was the only vessel belonging to NPAFC member nations to perform high-seas tagging operations in Convention waters in 1994.

The number of salmonids released during historical high-seas tagging operations (1954-1993) is shown in Fig. 1. The total number of salmonids tagged and released by all nations in Convention waters in 1994 (71 fish) was a record low. Although high-seas tag recovery data have accumulated slowly, this long-term database, along with information

from high-seas recoveries of coded-wire tagged fish, continues to provide fisheries researchers, managers, and enforcement agents with the only unequivocal information on ocean ranges of most stocks of Asian and North American salmonids. The NPAFC forum provides a new opportunity for better coordination, planning, and implementation of high-seas tagging experiments than was possible in the past. Carefully planned high-seas tagging experiments designed to answer specific questions of interest to NPAFC should be encouraged. The members of NPAFC ought to continue this long-term cooperative international effort as a part of the overall research program to identify stocks of salmonids in the Convention area and adjacent waters.

ACKNOWLEDGMENTS

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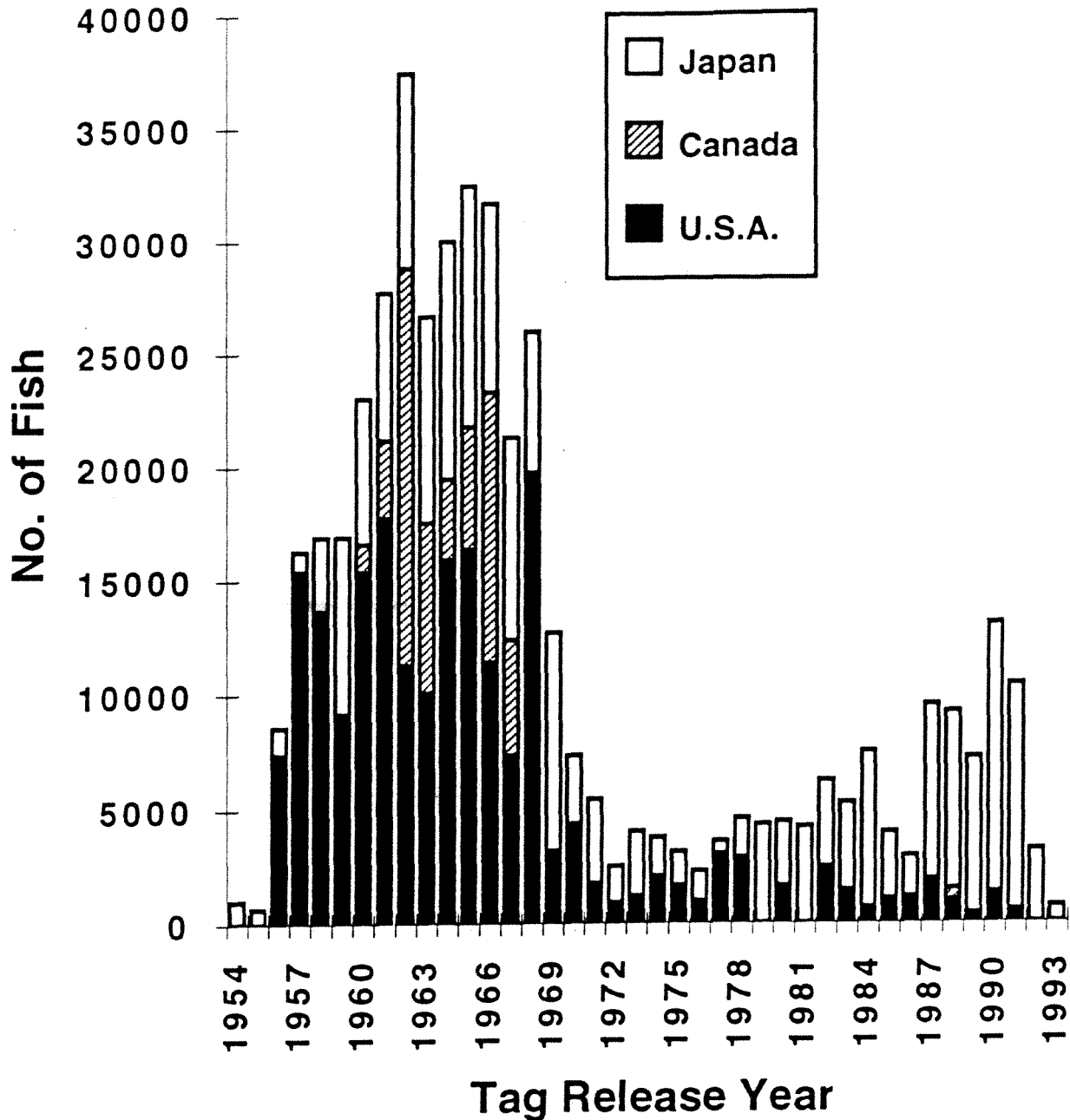


Fig. 1. The number of tagged fish released during international cooperative high-seas salmon tagging experiments from 1954-1993 ($n_{total} = 457,141$ fish). The 1983-1991 U.S. releases were made during cooperative U.S.-U.S.S.R. tagging experiments.

Table 1. Release and recovery information for U.S. and cooperative U.S.-Japan tags returned from September 1, 1993 to August 31, 1994.

a. U.S.-Japan tag released and recovered in 1993

Tag No.	Species	Sex	Date		Position		Area Codes	Gear		F.L. (mm)		B.W. (g)		G.W. (g)		Age	Remarks and area of recovery
			Rel.	Rec.	Rel.	Rec.		Rel.	Rec.	Rel.	Rec.	Rel.	Rec.	Rel.	Rec.		
EE0047*	Coho	M	7.04	9.22	55-13N 145-56W	57-42N 152-33W	56-2	Long-Line	Sport Fishing	640	-	-	-	2.1	--	Salonie Creek, Kodiak, Alaska	

*Japan tag no. KK1047, double-tag experiment

b. U.S. tag released and recovered in 1982

Tag No.	Species	Sex	Date		Position		Area Codes	Gear		F.L. (mm)		B.W. (g)		G.W. (g)		Age	Remarks and area of recovery
			Rel.	Rec.	Rel.	Rec.		Rel.	Rec.	Rel.	Rec.	Rel.	Rec.	Rel.	Rec.		
O666	Coho	F	7.05	-	46-58N 176-57E	56-22N 160-43E	11-1	Purse Seine	Commercial Net	515	-	-	-	X.1	--	Kamchatka R., 12 km upstream from Klyuchi	

Table 2. U.S. tags released in cooperative U.S.-Japanese high-seas salmonid research on T/S *Oshoro maru*, 1994. All tags are 3/4" red and white disk tags.

Station No.	Date	Location		No.	Salmonid catch							Tag releases							Tag serial numbers
		N. Lat.	Long.		Hachi	Red	Chum	Pink	Coho	King	Sthd.	Total	Red	Chum	Pink	Coho	King	Sthd.	
5	6/28	50-03	156-56W	10	5	20	5	2	0	2	34	4	13	3	1	0	2	23	EE057-EE079
6	7/2	49-58	144-58W	12	0	1	1	0	0	0	2	0	1	1	0	0	0	2	EE080-EE081
7	7/3	51-00	144-55W	12	0	7	1	5	0	0	13	0	7	1	5	0	0	13	EE081-EE085, EE087-EE091, EE093-EE095
8	7/4	52-01	145-00W	12	0	1	2	1	0	0	4	0	1	2	1	0	0	4	EE097-EE099, EE101
9	7/5	52-59	144-49W	12	0	2	0	1	0	0	3	0	2	0	1	0	0	3	EE103-EE105
10	7/6	54-01	145-02W	12	2	0	2	0	0	0	4	2	0	1	0	0	0	3	EE106-EE108
11	7/7	55-00	145-06W	10	2	4	1	3	0	0	10	2	4	1	3	0	0	10	EE109-EE118
Totals:				80	9	35	12	12	0	2	70	8	28	9	11	0	2	58	