

**HIGH SEAS SALMONID CODED-WIRE TAG RECOVERY DATA,  
2000**

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## ABSTRACT

Information on high seas recoveries of coded-wire tagged (CWT) salmonids has been reported annually to the International North Pacific Fisheries Commission (1981-1992) and to the North Pacific Anadromous Fish Commission (1993-present). In this document, release and recovery data for 98 CWT salmonids are reported for the first time. Reported recoveries are from U.S. commercial groundfish (trawl) fishery operations (85 recoveries) in 1998-2000 and U.S. and Japanese high seas research vessel operations (13 recoveries) in 1998-1999. A recovery at 54°N, 145°W is a southern range extension for central Alaska chinook salmon in the offshore waters of the Gulf of Alaska (previous record: 57°12'N, 145°03'W). A recovery at 53°19'N, 166°25'W is a western range extension for southeast Alaska chinook salmon (previous record: 53°42'N, 164°43'W). A recovery at 56°27'N, 155°42'W is a western range extension for juvenile (ocean age .0) Snake River Basin chinook salmon (previous record: 58°12'N, 148°47'W). The sixth reported recovery of a Stave River, British Columbia (Hinch Creek Hatchery) chum salmon in the Bering Sea is notable because there have been a total of only 12 reported recoveries of CWT chum salmon in the Bering Sea since 1980. The other previously reported Bering Sea recoveries include CWT hatchery chum salmon released in the Puntledge (1), Nimpkish (1), and Chehalis (1) rivers in British Columbia, Finch Creek (1) in Hood Canal, Washington, and Deep Inlet (1) and Kasnyku Bay (1) in southeast Alaska. Previous coded-wire and high seas disk tag recoveries (1956-1998) indicated that the offshore distribution of maturing southeast Alaska coho salmon in the Gulf of Alaska in July was north of 55°N. Three CWT (hatchery and wild) southeast Alaskan coho salmon were recovered south of 55°N, 145°W in early July 1999. The distribution of southeast and central Alaska hatchery coho salmon in the Gulf of Alaska in early July 1999 overlapped as far south as Station P (50°N, 145°W). A steelhead recovered at Station P in the central Gulf of Alaska in early July is a southern range extension for juvenile Snake River Basin, Idaho, steelhead (previous record: 51°30'N, 145°00'W).

## INTRODUCTION

The North Pacific Anadromous Fish Commission (NPAFC) coordinates the examination of high seas commercial and research catches for salmonids that might contain a coded-wire tag (CWT). Recoveries of coded-wire tagged salmonids in the North Pacific Ocean and Bering Sea have been reported annually to the International North Pacific Fisheries Commission (Dahlberg 1981-82; Wertheimer and Dahlberg 1983-84; Dahlberg and Fowler 1985; Dahlberg et al. 1986-92; Margolis 1985; Margolis et al. 1989; McKinnell et al. 1991) and to the North Pacific Anadromous Fish Commission (Dahlberg et al. 1993-97, Myers et al. 1998, 1999). The Regional Mark Processing Center, Pacific States Marine Fisheries Commission, incorporates the high seas CWT recovery data into their coastwide, on-line CWT recovery data set (Regional Mark Information System (RMIS), <http://www.rmis.org/index.html>). In this document, we list previously unreported data for CWT salmonids recovered aboard commercial groundfish vessels in the U.S. Exclusive Economic Zone (1998-2000) and U.S. and Japanese salmon research vessels in the North Pacific Ocean (1998-1999).

## RESULTS AND DISCUSSION

Data for 85 CWT salmon recovered in incidental salmon catches by the U.S. commercial groundfish (trawl) fishery in the U.S. Exclusive Economic Zone in 1998 (11 chinook), 1999 (65 chinook, 1 chum, and 1 coho), and 2000 (7 chinook) are listed by species and tag code in Table 1. The latitude and longitude of recovery for four CWT chinook salmon could not be determined from the data recorded by fishery observers; therefore, the recovery locations for these fish appear as National Marine Fisheries Service (NMFS) statistical areas (Fig. 1). Data for 13 CWT salmonids recovered during U.S. and Japanese salmon research vessel operations in the North Pacific Ocean in 1998 (1 chinook and 1 steelhead) and 1999 (1 chinook, 6 coho, and 4 steelhead) are listed in Table 2.

U.S. scientists periodically prepare reports and maps for NPAFC based on historical high-seas salmonid tag recoveries, which describe the known ocean ranges of major regional stocks of Asian and North American salmonids (for example, Myers et al. 1996). The sections that follow are a review by species of significant new information pertaining to ocean distribution and migration patterns of salmonids.

### Chinook salmon

A Cook Inlet hatchery chinook salmon recovered at 54°N, 145°W, is a southern range extension for central Alaska chinook salmon in the offshore waters of the Gulf of Alaska (Tag code 312603, Table 2; previous record: 57°12'N, 145°03'W, Walker et al. 1999). In coastal waters, however, the known southern range of central Alaska chinook salmon extends to 43°36'N, 124°35'W (off south central Oregon, Dahlberg et al. 1997).

A Ketchikan area hatchery chinook salmon recovered at 53°19'N, 166°25'W, is a western range extension for southeast Alaska chinook salmon (Tag code 044942, Table 1; previous record: 53°42'N, 164°43'W, Dahlberg et al. 1995). There is one southeast Alaska troll fishery recovery of a chinook salmon tagged at 51°18'N, 176°28'W (Myers et al. 1996), but it is not known if this fish was returning to a river in southeast Alaska.

Four CWT recoveries in 1998, two reported by Myers et al. (1999) and two reported in Tables 1 and 2 (Tag code 104626), provide new information on the migration patterns of juvenile (ocean age .0) Snake River Basin, Idaho, chinook salmon in the northern Gulf of Alaska (Fig. 2). One recovery at 56°27'N, 155°42'W in October is a western range extension for juvenile Snake River Basin chinook salmon (Tag code 104626, Table 1; previous record: 58°12'N, 148°47'W, Wertheimer and Dahlberg 1984). Tagging studies in the 1950s established the known western range of immature (ocean age .1 or older) Snake River Basin chinook salmon (51°29'N, 176°34'W, south of Adak Island in the central Aleutian Islands; INPFC 1958).

### Chum salmon

A CWT hatchery chum salmon released in 1996 in the Stave River, tributary to the lower Fraser River, British Columbia, was recovered in the Bering Sea in August 1999 (Tag code 180214, Table 1). This is the sixth reported recovery of a CWT Stave River (Hinch Creek Hatchery) chum salmon in the area 54°24'N-56°22'N, 164° 43'W-166°15'W. The number of Bering Sea recoveries for this particular hatchery stock is notable because there are a total of only 12 reported recoveries of CWT chum salmon in the Bering Sea since 1980. Two previously reported Stave River CWT recoveries from the same release group in 1994 (Tag Code 181536) were caught in the Bering Sea in October 1996 and February 1997,

indicating that this stock may overwinter in the Bering Sea. The other Bering Sea recoveries include CWT hatchery chum salmon released in the Puntledge (1), Nimpkish (1), and Chehalis (1) rivers in British Columbia, Finch Creek (1) in Hood Canal, Washington, and Deep Inlet (1) and Kasnyku Bay (1) in southeast Alaska.

### **Coho salmon**

Six high seas recoveries of CWT coho salmon in 1999 provide significant new information on the summer distribution of central and southeast Alaska coho salmon in the Gulf of Alaska (Table 2). Previous coded-wire and high seas disk tag recoveries (1956-1998) indicated that the offshore distribution of maturing southeast Alaskan coho salmon in the Gulf of Alaska in July was north of 55°N (Myers et al. 1996). Three CWT (hatchery and wild) southeast Alaskan coho salmon were recovered south of 55°N, 145°W, in early July 1999 (Tag codes 044350, 044708, and 500535, Table 2). The distribution of southeast and central Alaskan hatchery coho salmon in early July 1999 overlapped as far south as Station P (50°N, 145°W; Tag codes 312655 and 500435, Table 2).

### **Steelhead**

A steelhead recovered at Station P (50°N, 145°W) in the central Gulf of Alaska in early July, is a southern range extension for juvenile (age 1.0) Snake River Basin, Idaho, steelhead (Tag code 102146, Table 2; previous record: 51° 30' N, 145°W, Dahlberg 1981).

## **ACKNOWLEDGMENTS**

Fishermen, processors, observers, and scientists who participated in the 2000 high-seas CWT recovery program are gratefully acknowledged. The North Pacific Groundfish Observer Program, Alaska Fisheries Science Center (AFSC), NMFS, provided snout samples from salmonids lacking the adipose fin and recovery data collected by observers from the U.S. groundfish fishery. Jerry Berger, AFSC, provided data on catch locations, when observer data accompanying the samples were incomplete. The Fisheries Agency of Japan and Hokkaido University provided salmonid head samples and accompanying biological and catch data from Japanese salmon research vessels. Ryan Scott dissected snouts and read CWTs. The Idaho Department of Fish and Game provided release data on their CWT tag codes not currently listed in the RMIS database. Auke Bay Laboratory, AFSC, NMFS, provided funding to FRI for compilation and reporting of CWT release and recovery data (NOAA contract No. 50ABNF000008).

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Table 1. Release and recovery information for coded-wire tagged salmon caught in commercial trawls in the U.S. 200-mile zone. All recoveries in the table are reported for the first time (1 September 1999 - 31 August 2000 reporting period). ADFG=Alaska Department of Fish and Game, CDFG=California Dept. Fish and Game, CDFO = Canada Dept. of Fisheries and Oceans, FWS=US Fish and Wildlife Service, IDFG=Idaho Fish and Game, KTHC = Ketchikan Tribal Hatchery Corporation, MUCK=Muckleshoot Tribe, NEZP=Nez Perce Tribe, NISQ= Nisqually Tribe, NSRA=Northern Southeast Regional Aquaculture Assoc., ODFW=Oregon Dept. Fish and Wildlife, QDNR=Quinault Dept. of Natural Resources, SSRA=Southern Southeast Regional Aquaculture Assn., WDFW=Washington Dept. Fish and Wildlife, and WREG = Washington Regional Enhancement Groups. TSFT= body length measurement from the tip of the snout to the fork of the tail, D=degree, M=minute. The location of NMFS area 517 is shown in Fig. 1.

| RELEASE INFORMATION |         |        |       |       |                      |                            |      |               | RECOVERY INFORMATION |        |     |    |      |    |   |                  |             |     |                |
|---------------------|---------|--------|-------|-------|----------------------|----------------------------|------|---------------|----------------------|--------|-----|----|------|----|---|------------------|-------------|-----|----------------|
| TAG CODE            | SPECIES | RUN    | REAR  | BROOD | RELEASE SITE         | STATE OR PROVINCE & AGENCY |      | NUMBER TAGGED | DATE                 | DATE   | LAT |    | LONG |    |   | LENGTH TSFT (mm) | WEIGHT (gm) | SEX | OCEANIC REGION |
|                     |         |        | TYPE  | YEAR  |                      | D                          | M    |               |                      |        | D   | M  | DIR  |    |   |                  |             |     |                |
| 043829              | CHINOOK | SPRING | WILD  | 95    | UNUK R 101-75        | AK                         | ADFG | 12517         | 970419               | 990215 | 57  | 54 | 154  | 8  | W | 610              | 2540        | F   | GULF OF ALASKA |
| 044234              | CHINOOK | SPRING | WILD  | 94    | TAKU R 111-32        | AK                         | ADFG | 10224         | 960500               | 990926 | 57  | 0  | 155  | 0  | W | 810              | 9300        |     | GULF OF ALASKA |
| 044532              | CHINOOK | SPRING | HATCH | 95    | EARL WEST COV 107-40 | AK                         | ADFG | 18555         | 970528               | 990927 | 57  | 2  | 155  | 0  | W | 720              | 7800        |     | GULF OF ALASKA |
| 044611              | CHINOOK | SPRING | HATCH | 94    | CRYSTAL CR 106-44    | AK                         | ADFG | 26311         | 960517               | 991008 | 56  | 41 | 155  | 27 | W | 740              | 6200        | F   | GULF OF ALASKA |
| 044634              | CHINOOK | SPRING | WILD  | 95    | TAKU R 111-32        | AK                         | ADFG | 9212          | 970603               | 990926 | 56  | 48 | 155  | 9  | W | 720              | 6700        |     | GULF OF ALASKA |
| 044662              | CHINOOK | SPRING | HATCH | 96    | CRYSTAL CR 106-44    | AK                         | ADFG | 46166         | 980526               | 000318 | 56  | 30 | 155  | 35 | W | 440              |             | F   | GULF OF ALASKA |
| 044701              | CHINOOK | SPRING | HATCH | 95    | BEAR COVE 113-41     | AK                         | NSRA | 53689         | 970520               | 990606 | 58  | 05 | 152  | 09 | W | 580              | 2500        | M   | GULF OF ALASKA |
| 044711              | CHINOOK | SPRING | HATCH | 95    | KASNYKU BAY 112-11   | AK                         | NSRA | 89430         | 970527               | 991008 | 56  | 41 | 155  | 27 | W | 750              | 7600        | M   | GULF OF ALASKA |
| 044820              | CHINOOK | SPRING | HATCH | 96    | BEAR COVE 113-41     | AK                         | NSRA | 51579         | 980526               | 990926 | 57  | 2  | 154  | 57 | W | 580              | 3400        |     | GULF OF ALASKA |
| 044820              | CHINOOK | SPRING | HATCH | 96    | BEAR COVE 113-41     | AK                         | NSRA | 51579         | 980526               | 991009 | 56  | 30 | 155  | 50 | W | 550              | 2900        |     | GULF OF ALASKA |
| 044942              | CHINOOK | SPRING | HATCH | 96    | KETCHIKAN CR 101-47  | AK                         | KTHC | 21499         | 980515               | 000506 | 53  | 19 | 166  | 25 | W | 580              | 2600        |     | GULF OF ALASKA |
| 045001              | CHINOOK | SPRING | HATCH | 96    | HERRING COVE 101-45  | AK                         | SSRA | 10942         | 980515               | 991009 | 56  | 39 | 155  | 29 | W | 600              | 3100        | F   | GULF OF ALASKA |
| 0601060312          | CHINOOK | FALL   | HATCH | 96    | SAN FRAN MAJ.PT      | CA                         | CDFG | 52408         | 970609               | 990609 | 47  | 38 | 124  | 58 | W | 550              | 1870        | M   | NE NORTH       |



Table 1. Continued.

| RELEASE INFORMATION |         |        |       |       |                      |                            |                |        | RECOVERY INFORMATION |        |    |      |     |     |                  |             |         |                |                  |
|---------------------|---------|--------|-------|-------|----------------------|----------------------------|----------------|--------|----------------------|--------|----|------|-----|-----|------------------|-------------|---------|----------------|------------------|
| TAG CODE            | SPECIES | RUN    | REAR  | BROOD | RELEASE SITE         | STATE OR PROVINCE & AGENCY | NUMBE R TAGGED | DATE   | DATE                 | LAT    |    | LONG |     |     | LENGTH TSFT (mm) | WEIGHT (gm) | SEX     | OCEANIC REGION |                  |
|                     |         |        | TYPE  | YEAR  |                      |                            |                |        |                      | D      | M  | D    | M   | DIR |                  |             |         |                |                  |
|                     |         |        |       |       |                      |                            |                |        |                      |        |    |      |     |     |                  |             | PACIFIC |                |                  |
| 0601110606          | CHINOOK | FALL   | HATCH | 96    | SITE ON TUOLUMNE R.  | CA                         | CDFG           | 21531  | 970423               | 990605 | 48 | 23   | 124 | 54  | W                | 510         | 1500    | M              | NE NORTH PACIFIC |
| 062936              | CHINOOK | FALL   | HATCH | 95    | MOSS LANDING MIN. PT | CA                         | CDFG           | 58815  | 960703               | 990515 | 47 | 2    | 124 | 58  | W                | 770         | 9170    | F              | NE NORTH PACIFIC |
| 091850              | CHINOOK | FALL   | HATCH | 96    | TRASK R              | OR                         | ODFW           | 25695  | 970819               | 990926 | 56 | 59   | 155 | 01  | W                | 550         | 2600    | M              | GULF OF ALASKA   |
| 092147              | CHINOOK | FALL   | HATCH | 96    | YAQUINA R            | OR                         | ODFW           | 24388  | 970828               | 990926 | 56 | 59   | 155 | 01  | W                | 680         | 4400    | F              | GULF OF ALASKA   |
| 092155              | CHINOOK | SPRING | HATCH | 96    | WILLAMETTE R, MD FK2 | OR                         | ODFW           | 31797  | 971103               | 990216 | 56 | 43   | 152 | 59  | W                | 460         |         |                | GULF OF ALASKA   |
| 092156              | CHINOOK | SPRING | HATCH | 96    | WILLAMETTE R, MD FK2 | OR                         | ODFW           | 31695  | 980303               | 990921 |    |      |     |     | W                | 620         | 3300    | M              | GULF OF ALASKA   |
| 092159              | CHINOOK | SPRING | HATCH | 96    | WILLAMETTE R-1       | OR                         | ODFW           | 52301  | 971104               | 990611 | 56 | 58   | 154 | 58  | W                | 610         | 2600    |                | GULF OF ALASKA   |
| 092239              | CHINOOK | SPRING | HATCH | 96    | CLACKAMAS R          | OR                         | ODFW           | 39106  | 980312               | 991108 | 54 | 49   | 165 | 38  | W                | 590         | 2700    |                | BERING SEA       |
| 092247              | CHINOOK | SPRING | HATCH | 96    | MCKENZIE R-1         | OR                         | ODFW           | 46287  | 980205               | 990217 | 57 | 34   | 151 | 33  | W                | 480         | 1540    | F              | GULF OF ALASKA   |
| 092249              | CHINOOK | SPRING | HATCH | 96    | MCKENZIE R-1         | OR                         | ODFW           | 105588 | 980205               | 000316 | 53 | 42   | 164 | 48  | W                | 580         | 2250    | F              | GULF OF ALASKA   |
| 092319              | CHINOOK | SPRING | HATCH | 96    | SANTIAM R & N FK-1   | OR                         | ODFW           | 244804 | 980303               | 990927 | 56 | 40   | 155 | 19  | W                | 580         | 2300    | M              | GULF OF ALASKA   |
| 092319              | CHINOOK | SPRING | HATCH | 96    | SANTIAM R & N FK-1   | OR                         | ODFW           | 244804 | 980303               | 990926 | 57 | 0    | 155 | 0   | W                | 580         | 3200    |                | GULF OF ALASKA   |
| 092319              | CHINOOK | SPRING | HATCH | 96    | SANTIAM R & N FK-1   | OR                         | ODFW           | 244804 | 980303               | 990926 | 57 | 2    | 154 | 57  | W                | 600         | 3500    |                | GULF OF ALASKA   |
| 092447              | CHINOOK | FALL   | HATCH | 97    | SALMON R/OR - COAST  | OR                         | ODFW           | 179888 | 980817               | 990926 | 57 | 2    | 154 | 57  | W                | 490         | 2400    |                | GULF OF ALASKA   |
| 104626              | CHINOOK | SPRING | HATCH | 96    | POWELL REARING PONDS | ID                         | IDFG           | 55685  | 980408               | 981009 | 56 | 27   | 155 | 42  | W                | 350         | 700     | M              | GULF OF ALASKA   |
| 1301040102          | CHINOOK | SPRING | WILD  | 95    | WILLOW CR 247-41     | AK                         | ADFG           | 13474  | 961010               | 981014 | 54 | 55   | 165 | 42  | W                | 530         | 1970    | F              | BERING SEA       |

Table 1. Continued.

| RELEASE INFORMATION |         |        |       |       |                      |                            |               |        | RECOVERY INFORMATION |               |    |      |    |     |                  |             |            |                  |
|---------------------|---------|--------|-------|-------|----------------------|----------------------------|---------------|--------|----------------------|---------------|----|------|----|-----|------------------|-------------|------------|------------------|
| TAG CODE            | SPECIES | RUN    | REAR  | BROOD | RELEASE SITE         | STATE OR PROVINCE & AGENCY | NUMBER TAGGED | DATE   | DATE                 | LAT           |    | LONG |    |     | LENGTH TSFT (mm) | WEIGHT (gm) | SEX        | OCEANIC REGION   |
|                     |         |        | TYPE  | YEAR  |                      |                            |               |        |                      | D             | M  | D    | M  | DIR |                  |             |            |                  |
| 180609              | CHINOOK | SUMMER | HATCH | 94    | R-KITSUMKALU M R     | BC CDFO                    | 10700         | 950621 | 981014               | 56            | 31 | 164  | 61 | W   | 968              |             | M          | BERING SEA       |
| 181229              | CHINOOK | SUMMER | HATCH | 94    | R-ATNARKO SPAWN CHAN | BC CDFO                    | 58670         | 950607 | 981011               | 56            | 32 | 164  | 35 | W   | 900              | 10000       | F          | BERING SEA       |
| 181514              | CHINOOK | SPRING | HATCH | 95    | R-BIRKENHEAD RIVER   | BC CDFO                    | 40392         | 970300 | 990130               | NMFS area 517 |    |      | W  | 620 | 2900             | M           | BERING SEA |                  |
| 181654              | CHINOOK | SPRING |       | 95    | R-BULKLEY R UPPER    | BC CDFO                    | 25028         | 970501 | 981012               | NMFS area 517 |    |      | W  | 530 | 1850             | F           | BERING SEA |                  |
| 181656              | CHINOOK | SPRING | HATCH | 95    | R-BUCKLEY R UP       | BC CDFO                    | 26006         | 970501 | 990121               | 57            | 8  | 152  | 24 | W   | 630              | 3100        | M          | GULF OF ALASKA   |
| 181946              | CHINOOK | FALL   | HATCH | 94    | R-CHEHALIS R         | BC CDFO                    | 49766         | 950430 | 990612               | 48            | 5  | 125  | 6  | W   | 880              | 8520        | F          | NE NORTH PACIFIC |
| 182155              | CHINOOK | SUMMER | HATCH | 94    | R-KITSUMKALU M R     | BC CDFO                    | 29252         | 950600 | 990124               | 57            | 58 | 152  | 33 | W   | 810              | 7500        | M          | GULF OF ALASKA   |
| 182157              | CHINOOK | SUMMER | HATCH | 94    | R-KITSUMKALU M R     | BC CDFO                    | 28943         | 950621 | 981010               | 55            | 02 | 164  | 58 | W   | 640              |             | M          | BERING SEA       |
| 182240              | CHINOOK | FALL   | HATCH | 96    | R-CAPILANO RIVER     | BC CDFO                    | 24919         | 970522 | 990816               | 48            | 19 | 125  | 7  | W   | 480              | 1500        |            | NE NORTH PACIFIC |
| 182250              | CHINOOK | SPRING | HATCH | 95    | R-KILBELLA BAY       | BC CDFO                    | 51822         | 960627 | 990927               | 57            | 2  | 154  | 57 | W   | 850              | 9600        |            | GULF OF ALASKA   |
| 182529              | CHINOOK | SUMMER | HATCH | 96    | R-ATNARKO R UPPER    | BC CDFO                    | 25022         | 970613 | 990926               | 57            | 2  | 154  | 57 | W   | 660              | 5100        |            | GULF OF ALASKA   |
| 182608              | CHINOOK | SUMMER | HATCH | 95    | R-BABINE R           | BC CDFO                    | 6425          | 970430 | 000124               | 54            | 34 | 159  | 59 | W   | 710              | 5400        |            | GULF OF ALASKA   |
| 182732              | CHINOOK | SPRING | HATCH | 95    | R-NICOLA RIVER       | BC CDFO                    | 50275         | 970507 | 981016               | 54            | 55 | 165  | 42 | W   | 580              | 2900        | F          | BERING SEA       |
| 182733              | CHINOOK | SPRING | HATCH | 95    | R-SALMON R/THOMPSON  | BC CDFO                    | 50668         | 970501 | 990215               | 57            | 45 | 154  | 8  | W   | 500              | 1620        | F          | GULF OF ALASKA   |
| 182755              | CHINOOK | SUMMER | HATCH | 96    | R-KITSUMKALU M R     | BC CDFO                    | 20403         | 980427 | 990926               | 56            | 59 | 155  | 01 | W   | 600              | 3350        | M          | GULF OF ALASKA   |
| 182808              | CHINOOK | SUMMER | HATCH | 97    | R-KITSUMKALK         | BC CDFO                    | 27132         | 980521 | 990926               | 56            | 59 | 155  | 01 | W   | 480              | 1550        | M          | GULF OF ALASKA   |

Table 1. Continued.

| RELEASE INFORMATION |         |        |       |       |                     |                            |                |        | RECOVERY INFORMATION |        |               |      |     |     |                  |             |      |                |                  |
|---------------------|---------|--------|-------|-------|---------------------|----------------------------|----------------|--------|----------------------|--------|---------------|------|-----|-----|------------------|-------------|------|----------------|------------------|
| TAG CODE            | SPECIES | RUN    | REAR  | BROOD | RELEASE SITE        | STATE OR PROVINCE & AGENCY | NUMBE R TAGGED | DATE   | DATE                 | LAT    |               | LONG |     |     | LENGTH TSFT (mm) | WEIGHT (gm) | SEX  | OCEANIC REGION |                  |
|                     |         |        | TYPE  | YEAR  |                     |                            |                |        |                      | D      | M             | D    | M   | DIR |                  |             |      |                |                  |
|                     |         |        |       |       | UM R LOW            |                            |                |        |                      |        |               |      |     |     |                  |             |      |                |                  |
| 182857              | CHINOOK | FALL   | HATCH | 96    | R-CHILLIWACK RIVER  | BC                         | CDFO           | 41252  | 970602               | 990722 | 48            | 28   | 124 | 52  | W                | 550         | 2300 | F              | NE NORTH PACIFIC |
| 182857              | CHINOOK | FALL   | HATCH | 96    | R-CHILLIWACK RIVER  | BC                         | CDFO           | 41252  | 970602               | 990716 | 48            | 23   | 125 | 2   | W                | 560         | 2300 |                | NE NORTH PACIFIC |
| 183045              | CHINOOK | FALL   | HATCH | 97    | R-CAPILANO R        | BC                         | CDFO           | 25166  | 980520               | 990707 | 48            | 27   | 124 | 55  | W                | 450         | 1100 | F              | NE NORTH PACIFIC |
| 183209              | CHINOOK | SPRING | HATCH | 96    | R-BULKLEY R UP      | BC                         | CDFO           | 27198  | 980505               | 000326 | 53            | 30   | 165 | 44  | W                | 590         | 2610 |                | GULF OF ALASKA   |
| 183210              | CHINOOK | SPRING | HATCH | 96    | R-BULKLEY R UP      | BC                         | CDFO           | 27299  | 980505               | 990926 | 56            | 59   | 155 | 01  | W                | 550         | 2350 | M              | GULF OF ALASKA   |
| 183211              | CHINOOK | SPRING | HATCH | 96    | R-BULKLEY R UP      | BC                         | CDFO           | 27372  | 980505               | 990928 | 55            | 20   | 155 | 26  | W                | 530         | 2000 | F              | GULF OF ALASKA   |
| 183211              | CHINOOK | SPRING | HATCH | 96    | R-BULKLEY R UP      | BC                         | CDFO           | 27372  | 980505               | 990928 | 56            | 39   | 155 | 24  | W                | 510         |      | M              | GULF OF ALASKA   |
| 183211              | CHINOOK | SPRING | HATCH | 96    | R-BULKLEY R UP      | BC                         | CDFO           | 27372  | 980505               | 000511 | 58            | 23   | 149 | 16  | W                | 600         | 2900 | F              | GULF OF ALASKA   |
| 183352              | CHINOOK | SPRING | HATCH | 96    | R-SPIUS CR          | BC                         | CDFO           | 49201  | 980504               | 990919 | 56            | 46   | 155 | 10  | W                | 630         | 2300 | F              | GULF OF ALASKA   |
| 183355              | CHINOOK | FALL   | HATCH | 96    | R-TRANQUILLE EST    | BC                         | CDFO           | 50106  | 970630               | 000126 | NMFS area 517 |      |     | W   | 640              | 3880        |      | BERING SEA     |                  |
| 183356              | CHINOOK | SUMMER | HATCH | 96    | R-BABINE R          | BC                         | CDFO           | 48441  | 980504               | 991009 | 56            | 32   | 155 | 47  | W                | 510         | 2000 |                | GULF OF ALASKA   |
| 212957              | CHINOOK | FALL   | HATCH | 96    | CLEAR CR 11.0013C   | WA                         | NISQ           | 226046 | 970519               | 990722 | 48            | 29   | 124 | 52  | W                | 490         | 1800 |                | NE NORTH PACIFIC |
| 312507              | CHINOOK | SPRING | HATCH | 95    | HOMER SPIT 241-13   | AK                         | ADFG           | 39070  | 960605               | 981012 | 55            | 08   | 165 | 02  | W                | 610         | 3300 | M              | BERING SEA       |
| 312532              | CHINOOK | SPRING | HATCH | 97    | DECEPTION CR 247-41 | AK                         | ADFG           | 195615 | 980626               | 991009 | 56            | 38   | 155 | 31  | W                | 460         | 1500 | F              | GULF OF ALASKA   |
| 312532              | CHINOOK | SPRING | HATCH | 97    | DECEPTION CR 247-41 | AK                         | ADFG           | 195615 | 980626               | 991007 | 56            | 35   | 155 | 30  | W                | 460         | 1400 | F              | GULF OF ALASKA   |
| 312532              | CHINOOK | SPRING | HATCH | 97    | DECEPTION CR 247-41 | AK                         | ADFG           | 195615 | 980626               | 991010 | 56            | 46   | 155 | 19  | W                | 510         | 1800 | M              | GULF OF ALASKA   |

Table 1. Continued.

| RELEASE INFORMATION |         |        |       |       |                         |                            |               |        | RECOVERY INFORMATION |        |               |      |     |     |                  |             |      |                |                  |
|---------------------|---------|--------|-------|-------|-------------------------|----------------------------|---------------|--------|----------------------|--------|---------------|------|-----|-----|------------------|-------------|------|----------------|------------------|
| TAG CODE            | SPECIES | RUN    | REAR  | BROOD | RELEASE SITE            | STATE OR PROVINCE & AGENCY | NUMBER TAGGED | DATE   | DATE                 | LAT    |               | LONG |     |     | LENGTH TSFT (mm) | WEIGHT (gm) | SEX  | OCEANIC REGION |                  |
|                     |         |        | TYPE  | YEAR  |                         |                            |               |        |                      | D      | M             | D    | M   | DIR |                  |             |      |                |                  |
| 312532              | CHINOOK | SPRING | HATCH | 97    | DECEPTION CR<br>247-41  | AK                         | ADFG          | 195615 | 980626               | 990919 | 56            | 46   | 155 | 10  | W                | 570         | 2300 | M              | GULF OF ALASKA   |
| 312532              | CHINOOK | SPRING | HATCH | 97    | DECEPTION CR<br>247-41  | AK                         | ADFG          | 195615 | 980626               | 991008 | 56            | 42   | 155 | 21  | W                | 430         | 1000 | M              | GULF OF ALASKA   |
| 312555              | CHINOOK | SPRING | HATCH | 96    | CROOKED CR<br>244-30    | AK                         | ADFG          | 39038  | 970530               | 990611 | 56            | 58   | 154 | 58  | W                | 540         | 1800 |                | GULF OF ALASKA   |
| 312555              | CHINOOK | SPRING | HATCH | 96    | CROOKED CR<br>244-30    | AK                         | ADFG          | 39038  | 970530               | 991008 | 56            | 41   | 155 | 27  | W                | 620         | 4400 | M              | GULF OF ALASKA   |
| 312558              | CHINOOK | SPRING | HATCH | 96    | HALIBUT CV<br>LAG241-15 | AK                         | ADFG          | 39487  | 970609               | 990921 | NMFS area 517 |      |     | W   | 570              | 2600        |      | BERING SEA     |                  |
| 312603              | CHINOOK | SPRING | HATCH | 96    | DECEPTION CR<br>247-41  | AK                         | ADFG          | 47078  | 970620               | 981011 | 55            | 08   | 165 | 06  | W                | 570         | 1400 | M              | BERING SEA       |
| 312605              | CHINOOK | SPRING | HATCH | 96    | DECEPTION CR<br>247-41  | AK                         | ADFG          | 46072  | 970620               | 981012 | 55            | 08   | 165 | 02  | W                | 480         | 1500 | M              | BERING SEA       |
| 312607              | CHINOOK | SPRING | HATCH | 96    | DECEPTION CR<br>247-41  | AK                         | ADFG          | 20578  | 970620               | 991009 | 56            | 39   | 155 | 26  | W                | 560         | 2200 | F              | GULF OF ALASKA   |
| 312607              | CHINOOK | SPRING | HATCH | 96    | DECEPTION CR<br>247-41  | AK                         | ADFG          | 20578  | 970620               | 991015 | 54            | 21   | 165 | 52  | W                | 550         | 2240 |                | BERING SEA       |
| 312631              | CHINOOK | SPRING | HATCH | 97    | SELDOVIA<br>HBR 241-11  | AK                         | ADFG          | 40125  | 980609               | 991008 | 56            | 41   | 155 | 27  | W                | 450         | 1300 | F              | GULF OF ALASKA   |
| 312635              | CHINOOK | SPRING | HATCH | 97    | NINILCHIK R<br>244-20   | AK                         | ADFG          | 47480  | 980615               | 991009 | 56            | 37   | 155 | 32  | W                | 440         | 900  | F              | GULF OF ALASKA   |
| 312635              | CHINOOK | SPRING | HATCH | 97    | NINILCHIK R<br>244-20   | AK                         | ADFG          | 47480  | 980615               | 991009 | 56            | 37   | 155 | 32  | W                | 430         | 1000 | F              | GULF OF ALASKA   |
| 630148              | CHINOOK | FALL   | HATCH | 96    | PURDY CR<br>16.0005     | WA                         | WDFW          | 217308 | 970516               | 990729 | 48            | 10   | 125 | 19  | W                | 570         | 2600 |                | NE NORTH PACIFIC |
| 630157              | CHINOOK | SPRING | HATCH | 96    | MINTER CR<br>15.0048    | WA                         | WDFW          | 253221 | 970529               | 990722 | 48            | 24   | 124 | 52  | W                | 530         | 1700 |                | NE NORTH PACIFIC |
| 630157              | CHINOOK | SPRING | HATCH | 96    | MINTER CR<br>15.0048    | WA                         | WDFW          | 253221 | 970529               | 990714 | 48            | 9    | 125 | 12  | W                | 560         | 1900 |                | NE NORTH PACIFIC |
| 630443              | CHINOOK | FALL   | HATCH | 96    | GUEMES CHANNEL          | WA                         | WREG          | 57131  | 980107               | 990713 | 48            | 20   | 125 | 17  | W                | 520         | 1800 | M              | NE NORTH PACIFIC |
| 634129              | CHINOOK | SUMMER | HATCH | 95    | COLUMBIA R -<br>GENERAL | WA                         | WDFW          | 187847 | 970418               | 990722 | 48            | 8    | 125 | 16  | W                | 650         | 3500 |                | NE NORTH PACIFIC |

Table 1. Continued.

| RELEASE INFORMATION |         |        |       |       |                         |                            |      |               | RECOVERY INFORMATION |        |     |    |      |    |     |                  |             |     |                  |
|---------------------|---------|--------|-------|-------|-------------------------|----------------------------|------|---------------|----------------------|--------|-----|----|------|----|-----|------------------|-------------|-----|------------------|
| TAG CODE            | SPECIES | RUN    | REAR  | BROOD | RELEASE SITE            | STATE OR PROVINCE & AGENCY |      | NUMBER TAGGED | DATE                 | DATE   | LAT |    | LONG |    |     | LENGTH TSFT (mm) | WEIGHT (gm) | SEX | OCEANIC REGION   |
|                     |         |        | TYPE  | YEAR  |                         | WA                         | WDFW |               |                      |        | D   | M  | D    | M  | DIR |                  |             |     |                  |
| 635533              | CHINOOK | SPRING | HATCH | 96    | KENDALL CR<br>01.0406   | WA                         | WDFW | 147651        | 980401               | 990805 | 48  | 4  | 125  | 18 | W   | 550              | 1900        |     | NE NORTH PACIFIC |
| 635957              | CHINOOK | FALL   | HATCH | 95    | SNAKE R ABV<br>CLARKSTN | ID                         | NEZP | 72231         | 970414               | 990722 | 48  | 28 | 124  | 52 | W   | 570              | 2700        |     | NE NORTH PACIFIC |
| 636061              | CHINOOK | FALL   | HATCH | 95    | FINCH CR<br>16.0222     | WA                         | WDFW | 98163         | 970417               | 990515 | 47  | 2  | 124  | 58 | W   | 650              | 4810        | F   | NE NORTH PACIFIC |
| 636341              | CHINOOK | SPRING | HATCH | 96    | LEWIS R -NF<br>27.0168  | WA                         | WDFW | 49607         | 980328               | 990929 | 55  | 20 | 155  | 26 | W   | 600              | 3000        | M   | GULF OF ALASKA   |
| 636342              | CHINOOK | FALL   | HATCH | 96    | FINCH CR<br>16.0222     | WA                         | WDFW | 50053         | 980410               | 990605 | 48  | 19 | 124  | 57 | W   | 490              | 1500        | F   | NE NORTH PACIFIC |
| 180214              | CHUM    | FALL   | HATCH | 95    | R-STAVE R               | BC                         | CDFO | 24097         | 960424               | 990803 | 56  | 24 | 165  | 27 | W   | 760              | 6400        | M   | BERING SEA       |
| 213163              | COHO    | FALL   | HATCH | 96    | CRISP CR<br>09.0113     | WA                         | MUCK | 49352         | 980506               | 990708 | 48  | 27 | 124  | 53 | W   | 490              | 1560        | F   | NE NORTH PACIFIC |

Table 2. Release and recovery information for coded-wire tagged salmon caught in Japanese and U.S. research trawls (RESTRAWL) and gillnets (RESGILL) in the North Pacific Ocean. All recoveries in the table are reported for the first time (1 September 1999 - 31 August 2000 reporting period). ADFG=Alaska Department of Fish and Game, DIPC=Douglas Island Pink and Chum, Inc., FWS=US Fish and Wildlife Service, IDFG=Idaho Department of Fish and Game, NSRA=Northern Southeast Regional Aquaculture Assoc., and QDNR=Quinault Dept. of Natural Resources. D=degree, M=minute. TSFT= body length measurement from the tip of the snout to the fork of the tail. WT. = whole body weight.

| RELEASE INFORMATION |           |              |       |       |                        |            |          |        |        | RECOVERY INFORMATION |     |      |    |      |      |      |     |          |                       |
|---------------------|-----------|--------------|-------|-------|------------------------|------------|----------|--------|--------|----------------------|-----|------|----|------|------|------|-----|----------|-----------------------|
| TAG                 |           |              | REAR  | BROOD | RELEASE                | STATE/PROV | NUMBE    |        |        |                      | LAT | LONG |    | TSFT | WT.  |      |     | OCEANIC  |                       |
| CODE                | SPECIES   | RUN          | TYPE  | YEAR  | SITE                   | & AGENCY   | R TAGGED | DATE   | DATE   | D                    | M   | D    | M  | DIR  | (mm) | (gm) | SEX | GEAR     | REGION                |
| 312603              | CHINOOK   | SPRING       | HATCH | 96    | DECEPTION CR 247-41    | AK ADFG    | 47078    | 970620 | 990712 | 54                   | 0   | 145  | 0  | W    | 642  | 3480 | M   | RESGILL  | GULF OF ALASKA        |
| 104626              | CHINOOK   | SPRING       | HATCH | 96    | POWELL REARING PONDS   | ID IDFG    | 55685    | 980408 | 980728 | 59                   | 01  | 140  | 36 | W    | 248  | 150  |     | RESTRAWL | GULF OF ALASKA        |
| 044350              | COHO      |              | WILD  | 95    | HUGH SMITH LK 101-30   | AK ADFG    | 8677     | 980602 | 990710 | 52                   | 0   | 145  | 0  | W    | 590  | 2370 | M   | RESGILL  | GULF OF ALASKA        |
| 044530              | COHO      |              | WILD  | 95    | BERNERS R 115-20       | AK ADFG    | 23999    | 980527 | 990714 | 56                   | 0   | 145  | 0  | W    | 606  | 2720 | F   | RESGILL  | GULF OF ALASKA        |
| 044708              | COHO      |              | HATCH | 96    | SHAMROCK BAY 113-32    | AK NSRA    | 40069    | 980522 | 990712 | 54                   | 0   | 145  | 0  | W    | 614  | 2620 | F   | RESGILL  | GULF OF ALASKA        |
| 312655              | COHO      | FALL         | HATCH | 96    | EKLUTNA TAILRACE 247   | AK ADFG    | 22998    | 980519 | 990708 | 50                   | 0   | 145  | 0  | W    | 590  | 2860 | M   | RESGILL  | GULF OF ALASKA        |
| 500432              | COHO      | FALL         | HATCH | 96    | GASTINEAU CH 111-40    | AK DIPC    | 10312    | 980602 | 990713 | 55                   | 0   | 145  | 0  | W    | 560  | 2240 | F   | RESGILL  | GULF OF ALASKA        |
| 500435              | COHO      | FALL         | HATCH | 96    | GASTINEAU CH 111-40    | AK DIPC    | 9876     | 980602 | 990708 | 50                   | 0   | 145  | 0  | W    | 470  | 1330 | F   | RESGILL  | GULF OF ALASKA        |
| 102145              | STEELHEAD | B-RUN SUMMER | HATCH | 97    | E FK SALMON R DUMPSTER | ID IDFG    | 2424     | 980507 | 990620 | 43                   | 0   | 180  | 0  |      | 562  | 1770 | M   | RESGILL  | CENTRAL NORTH PACIFIC |
| 102146              | STEELHEAD | B-RUN SUMMER | HATCH | 97    | SLATE CRK: SALMON R    | ID IDFG    | 21828    | 980429 | 980709 | 50                   | 0   | 145  | 0  | W    | 300  | 255  | F   | RESGILL  | GULF OF ALASKA        |
| 210101              | STEELHEAD | WINTER       | HATCH | 97    | HOH R 20.0422          | WA FWS     | 15181    | 980515 | 990628 | 45                   | 30  | 165  | 0  | W    | 620  | 2270 | M   | RESGILL  | GULF OF ALASKA        |

Table 2. Continued.

| RELEASE INFORMATION |           |        |           |       |                       |            |             |        |        | RECOVERY INFORMATION |     |    |      |   |     |      |      |     |         |                   |
|---------------------|-----------|--------|-----------|-------|-----------------------|------------|-------------|--------|--------|----------------------|-----|----|------|---|-----|------|------|-----|---------|-------------------|
| TAG                 |           |        | REAR      | BROOD | RELEASE               | STATE/PROV | NUMBE       |        |        |                      | LAT |    | LONG |   |     | TSFT | WT.  |     |         | OCEANIC           |
| CODE                | SPECIES   | RUN    | TYPE      | YEAR  | SITE                  | & AGENCY   | R<br>TAGGED | DATE   | DATE   |                      | D   | M  | D    | M | DIR | (mm) | (gm) | SEX | GEAR    | REGION            |
| 215511              | STEELHEAD | WINTER | HATC<br>H | 97    | QUINAULT R<br>21.0398 | WA QDNR    | 28504       | 980415 | 990628 |                      | 45  | 30 | 165  | 0 | W   | 540  | 1470 | F   | RESGILL | GULF OF<br>ALASKA |
| 215511              | STEELHEAD | WINTER | HATC<br>H | 97    | QUINAULT R<br>21.0398 | WA QDNR    | 28504       | 980415 | 990628 |                      | 45  | 30 | 165  | 0 | W   | 592  | 2050 | M   | RESGILL | GULF OF<br>ALASKA |

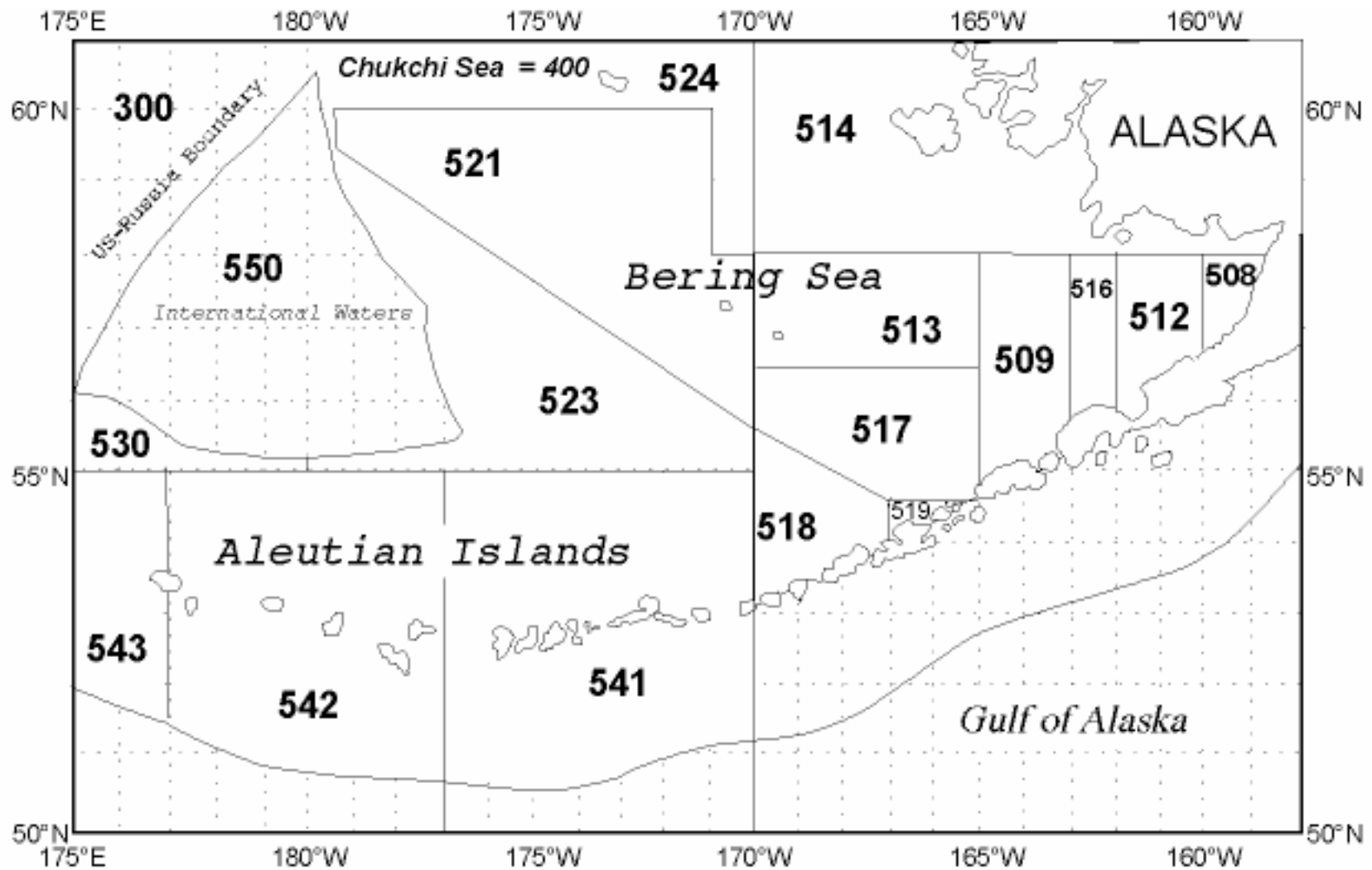


Figure 1. Locations of US National Marine Fisheries Service (NMFS) statistical areas in the eastern Bering Sea and Aleutian Islands portion of the US Exclusive Economic Zone (EEZ).



## Early Ocean Distribution of Juvenile (ocean age .0) Snake River Basin, Idaho, Chinook Salmon

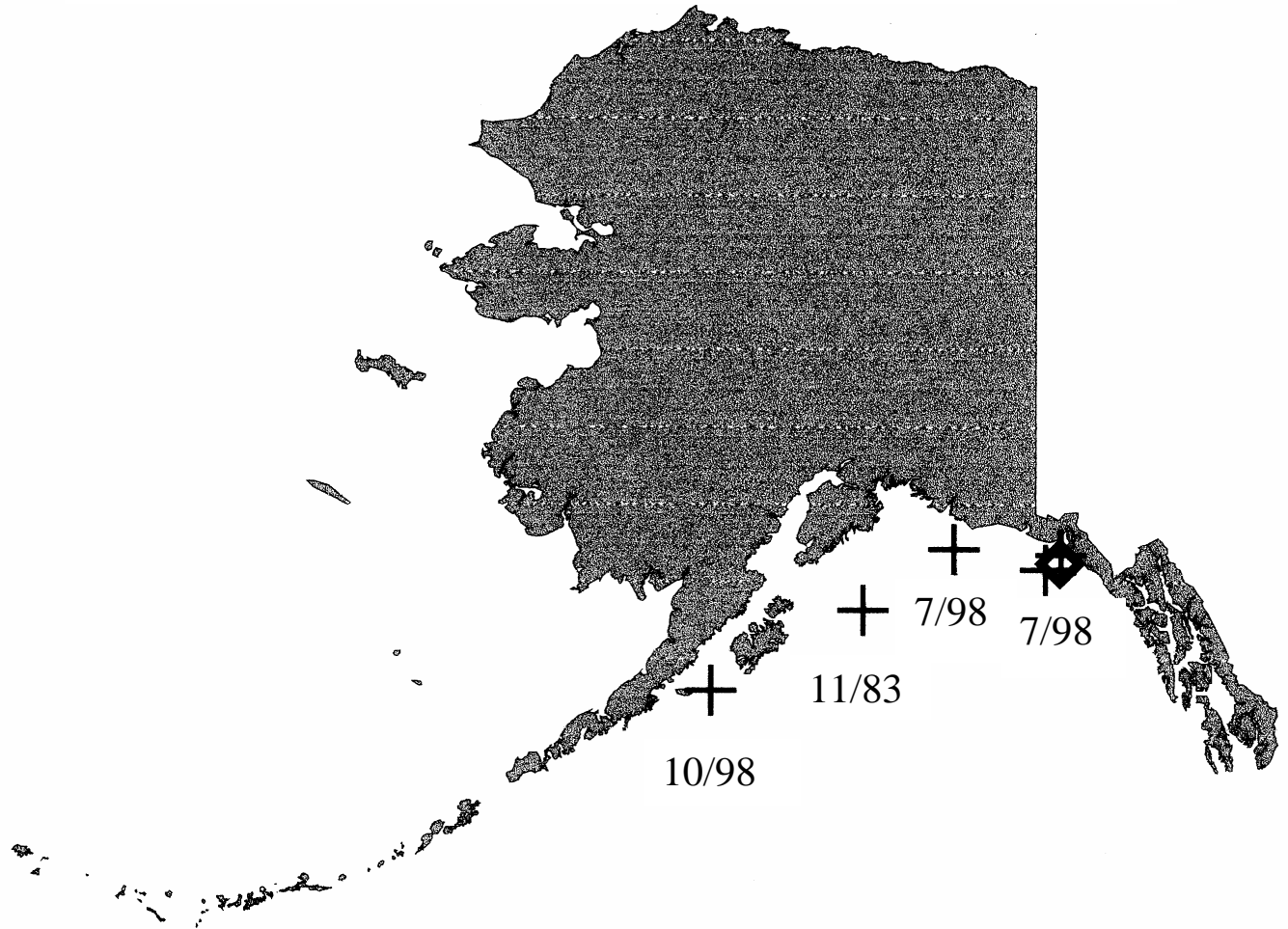


Figure 2. Ocean recovery locations and recovery dates (month/year) for five coded-wire tag (CWT) recoveries of juvenile (ocean age .0) chinook salmon from the Snake River Basin in Idaho. The crosses indicate CWT recovery locations. The open diamond indicates the release location of a juvenile chinook salmon tagged on 8/13/66 and recovered on 5/25/67 at Hell's Canyon Dam, Idaho (Hartt et al. 1970).