

NPAFC  
Doc.  
1058  
Rev. \_\_\_\_\_

## High Seas Salmonid Coded-Wire Tag Recovery Data, 2007

by

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Submitted to the

**NORTH PACIFIC ANADROMOUS FISH COMMISSION**

by

UNITED STATES OF AMERICA

October 2007

**THIS PAPER MAY BE CITED IN THE FOLLOWING MANNER:**

Celewycz, A.G., J.D. Berger, J. Cusick, N.D. Davis, and M. Fukuwaka. 2007. High seas salmonid coded-wire tag recovery data, 2007. NPAFC Doc. 1058. 21 pp. (Available at <http://www.npafc.org>).

# HIGH SEAS SALMONID CODED-WIRE TAG RECOVERY DATA, 2007

## ABSTRACT

Information on high seas recoveries of coded-wire tagged (CWT) salmonids (*Oncorhynchus* spp.) has been reported annually to the International North Pacific Fisheries Commission (1981-1992) and to the North Pacific Anadromous Fish Commission (NPAFC, 1993-present). Data from these CWT recoveries are also reported into the coastwide on-line CWT recovery database (<http://www.rmfc.org>) maintained by the Regional Mark Processing Center (RMPC) of the Pacific States Marine Fisheries Commission (PSMFC). This document lists recovery data for 63 CWT salmonids that will be reported to PSMFC/RMPC for the first time. These 63 CWTs were recovered from the 2006-2007 U.S. groundfish trawl fisheries in the eastern Bering Sea-Aleutian Islands (8 Chinook salmon, *Oncorhynchus tshawytscha*) and Gulf of Alaska (8 Chinook salmon), from the 2006 Pacific hake (*Merluccius productus*) trawl fishery in the Northern Pacific Ocean off Washington/Oregon/California (WA/OR/CA, 44 Chinook salmon), and from 2005 and 2007 Japanese research vessel operations in the central North Pacific Ocean (3 steelhead, *Oncorhynchus mykiss*).

## INTRODUCTION

Since 1981, Pacific salmon (*Oncorhynchus* spp.) tagged with coded-wire tags (CWTs) have been recovered in commercial fisheries and research programs in the North Pacific Ocean, Gulf of Alaska, and Bering Sea-Aleutian Islands. Data from these high seas CWT recoveries have been reported annually to the International North Pacific Fisheries Commission (Dahlberg 1981-1982; Wertheimer and Dahlberg 1983-1984; Dahlberg and Fowler 1985; Dahlberg et al. 1986-1992; 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. 1998-2005; Morris 2004; Celewycz et al. 2006). Data from these CWT recoveries have also been reported into the coastwide on-line CWT recovery database (<http://www.rmfc.org>) maintained by the Regional Mark Processing Center (RMPC) of the Pacific States Marine Fisheries Commission (PSMFC).

In this document, we list previously unreported data for CWT recoveries from the salmon bycatch of U.S. groundfish trawl fisheries for walleye pollock (*Theragra chalcogramma*) in the eastern Bering Sea-Aleutian Islands and Gulf of Alaska, from the salmon bycatch of U.S. groundfish trawl fishery for Pacific hake (*Merluccius productus*) in the North Pacific Ocean off Washington/Oregon/California (WA/OR/CA), and from Japanese salmon research vessel operations in the central North Pacific Ocean. New recoveries of CWT salmonids are compared to previous recoveries of CWTs reported to the International North Pacific Fisheries Commission (INPFC, 1956-2002) and to NPAFC (2003-present).

## RESULTS AND DISCUSSION

This document lists recovery data for 63 CWT salmonids that will be reported to PSMFC/RMPC database for the first time. Of these 63 new CWT recoveries, 8 CWT Chinook salmon were recovered from the Gulf of Alaska trawl fishery in 2006 and 2007 (Table 1), 8 CWT Chinook salmon were recovered from the Bering Sea-Aleutian Islands trawl fishery in 2006 and 2007 (Table 2), 44 CWT Chinook salmon were recovered from the Pacific hake trawl fishery in the North Pacific Ocean off WA/OR/CA in 2006 (Table 3), and 3 CWT steelhead were also recovered from Japanese gillnet research in the central North Pacific Ocean (Table 4).

The geographic locations of new recoveries of CWT Chinook salmon and steelhead are compared to previous recoveries and are summarized by province or state of origin (Figures 1-8). Unlike past years, there are no significant new range extensions of ocean distribution of particular stocks of salmonids to report.

## ACKNOWLEDGMENTS

Fishermen, processors, observers, and scientists who participated in the high seas CWT recovery program are gratefully acknowledged. Cathy Robinson dissected salmon snouts, decoded CWTs, and entered CWT recovery data in an electronic database.

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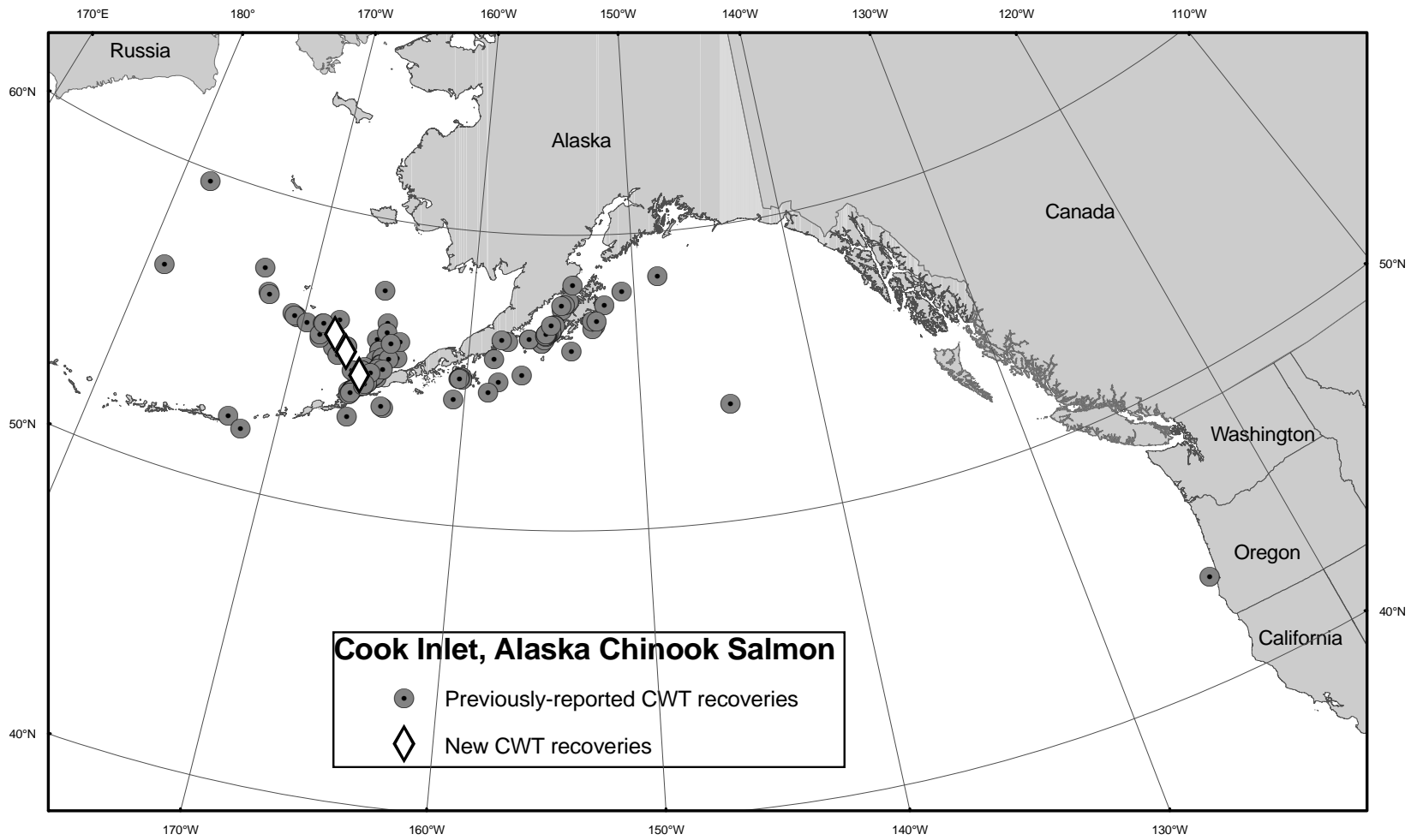


Figure 1. Ocean distribution of Cook Inlet, Alaska Chinook salmon from CWT recoveries, 1981-2007.



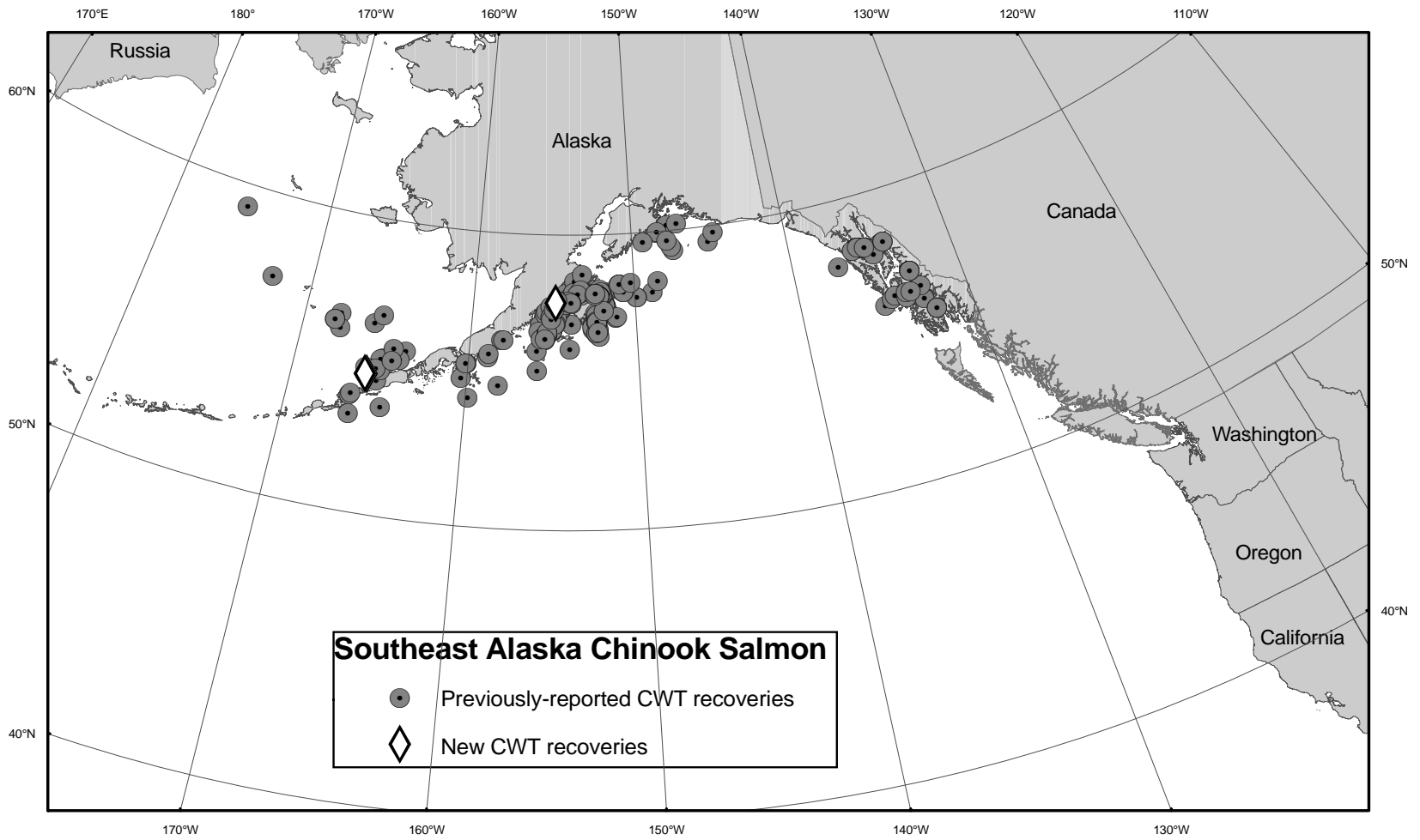


Figure 2. Ocean distribution of Southeast Alaska Chinook salmon from CWT recoveries, 1981-2007.

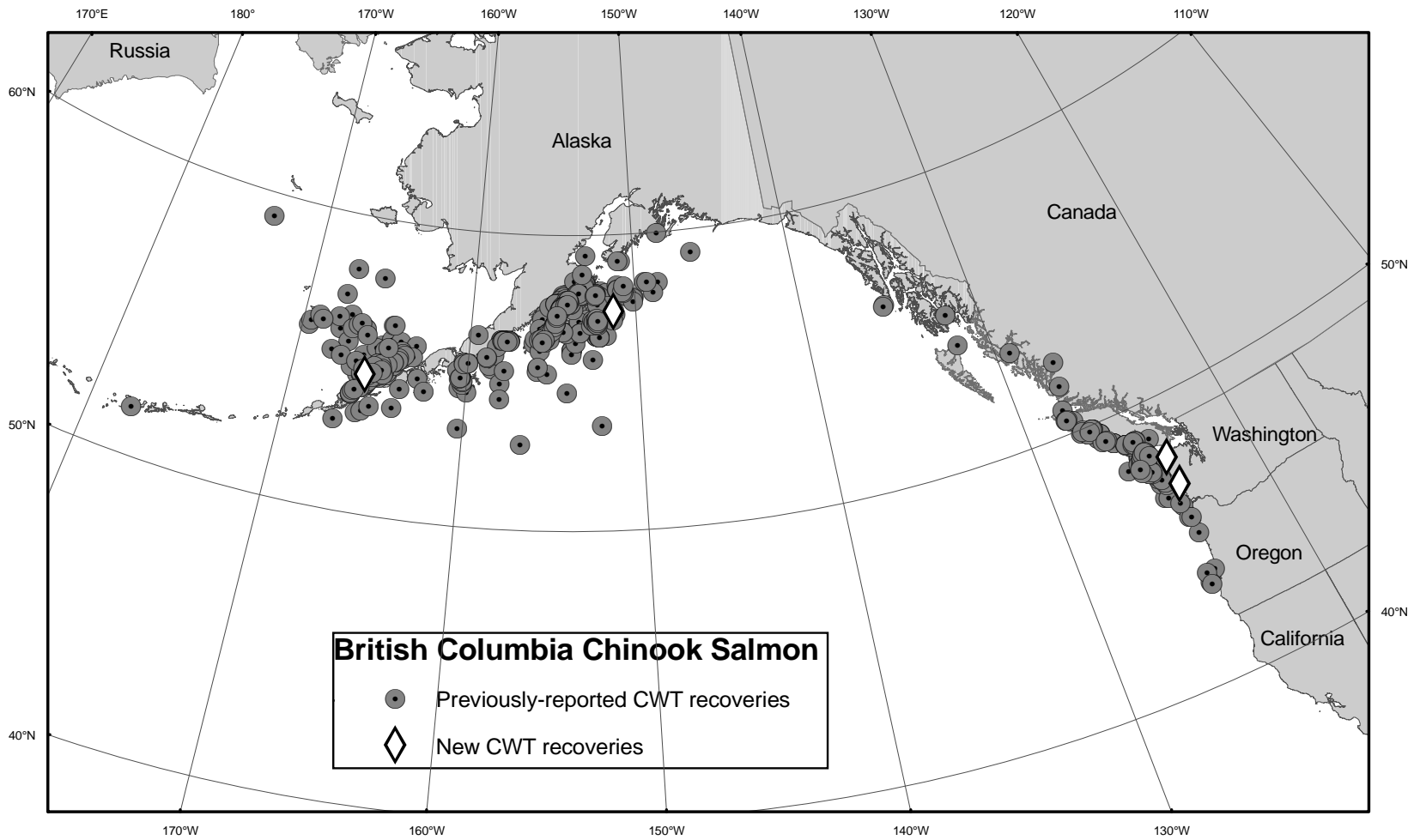


Figure 3. Ocean distribution of British Columbia Chinook salmon from CWT recoveries, 1981-2007.

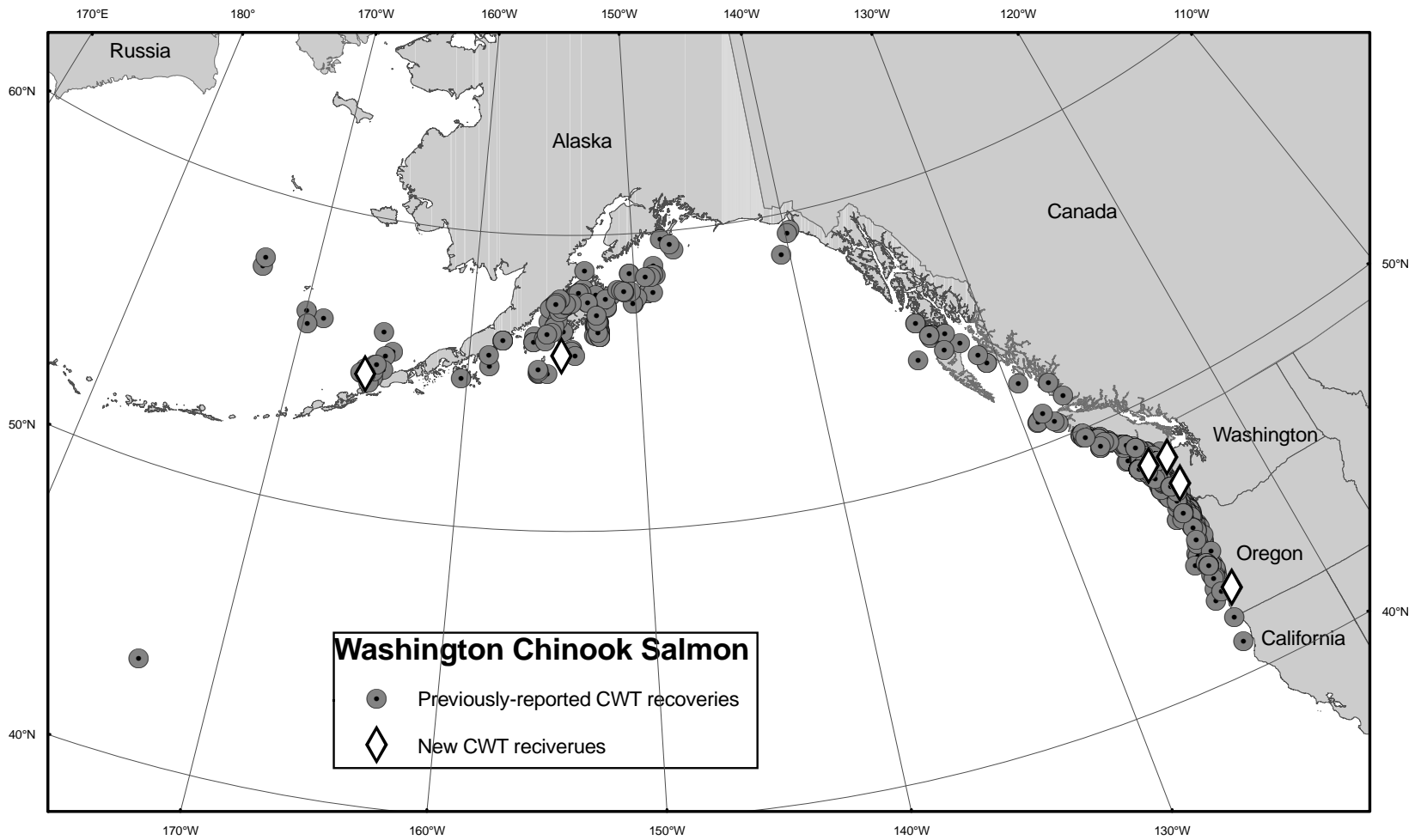


Figure 4. Ocean distribution of Washington Chinook salmon from CWT recoveries, 1981-2007.

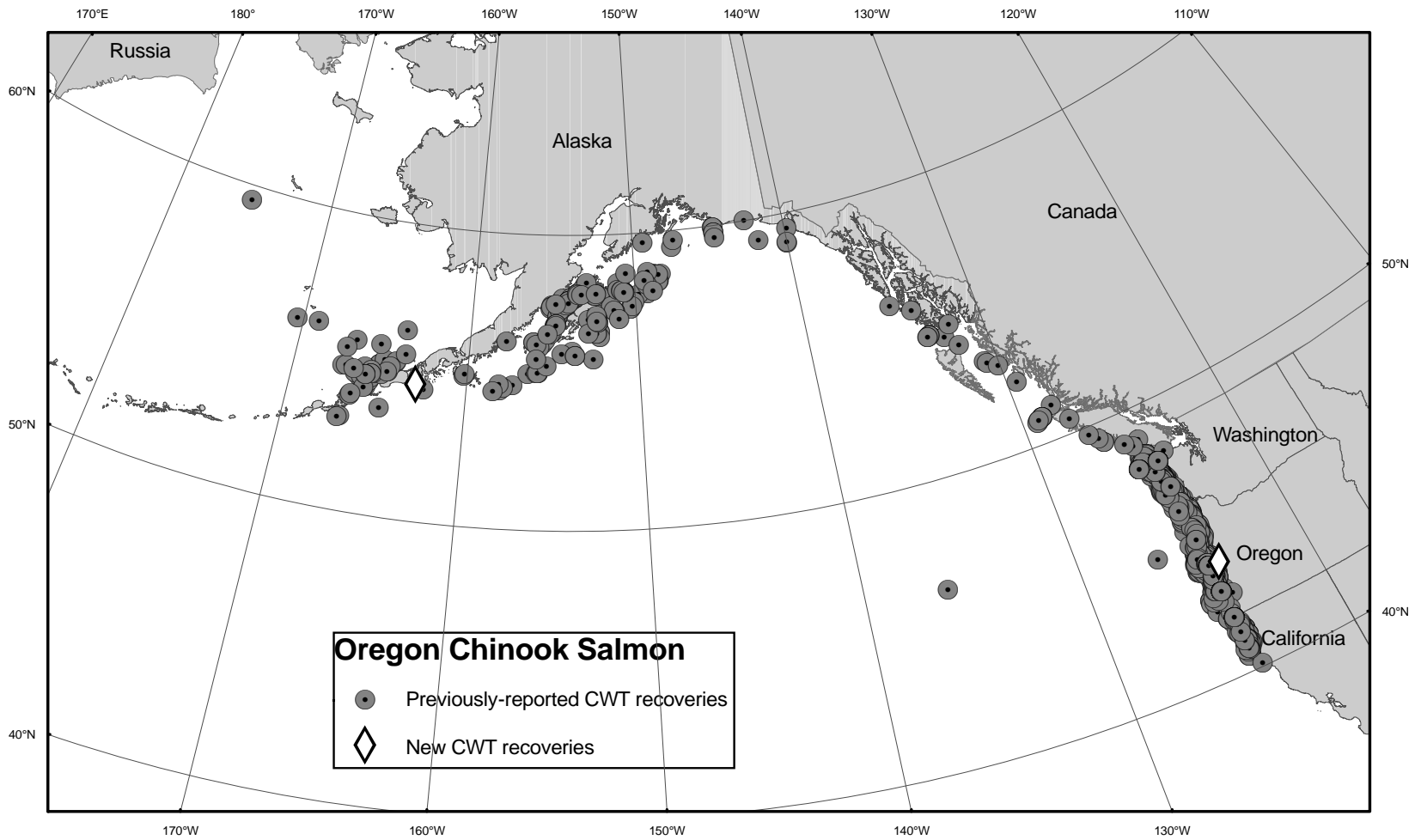


Figure 5. Ocean distribution of Oregon Chinook salmon from CWT recoveries, 1981-2007.

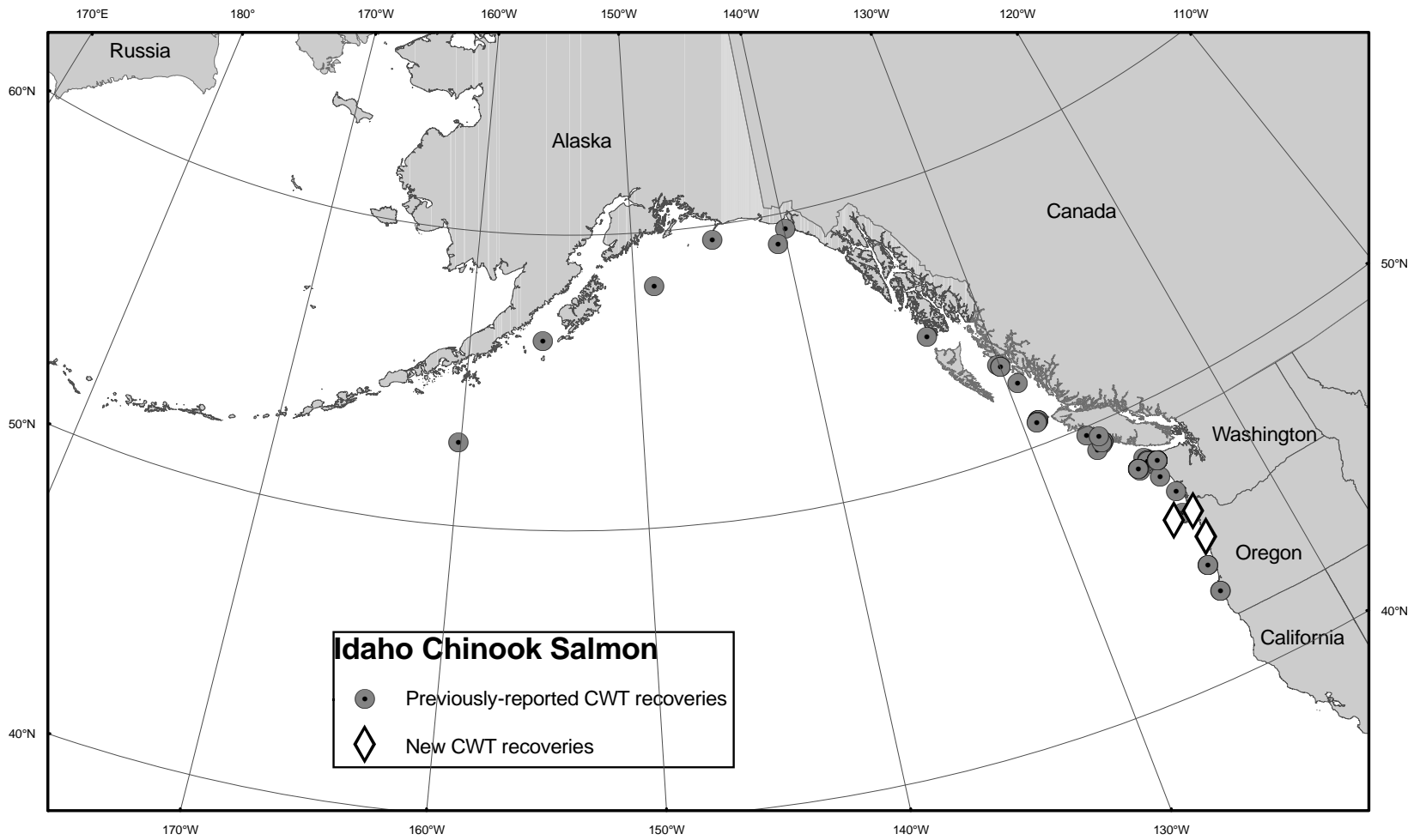


Figure 6. Ocean distribution of Idaho Chinook salmon from CWT recoveries, 1981-2007.

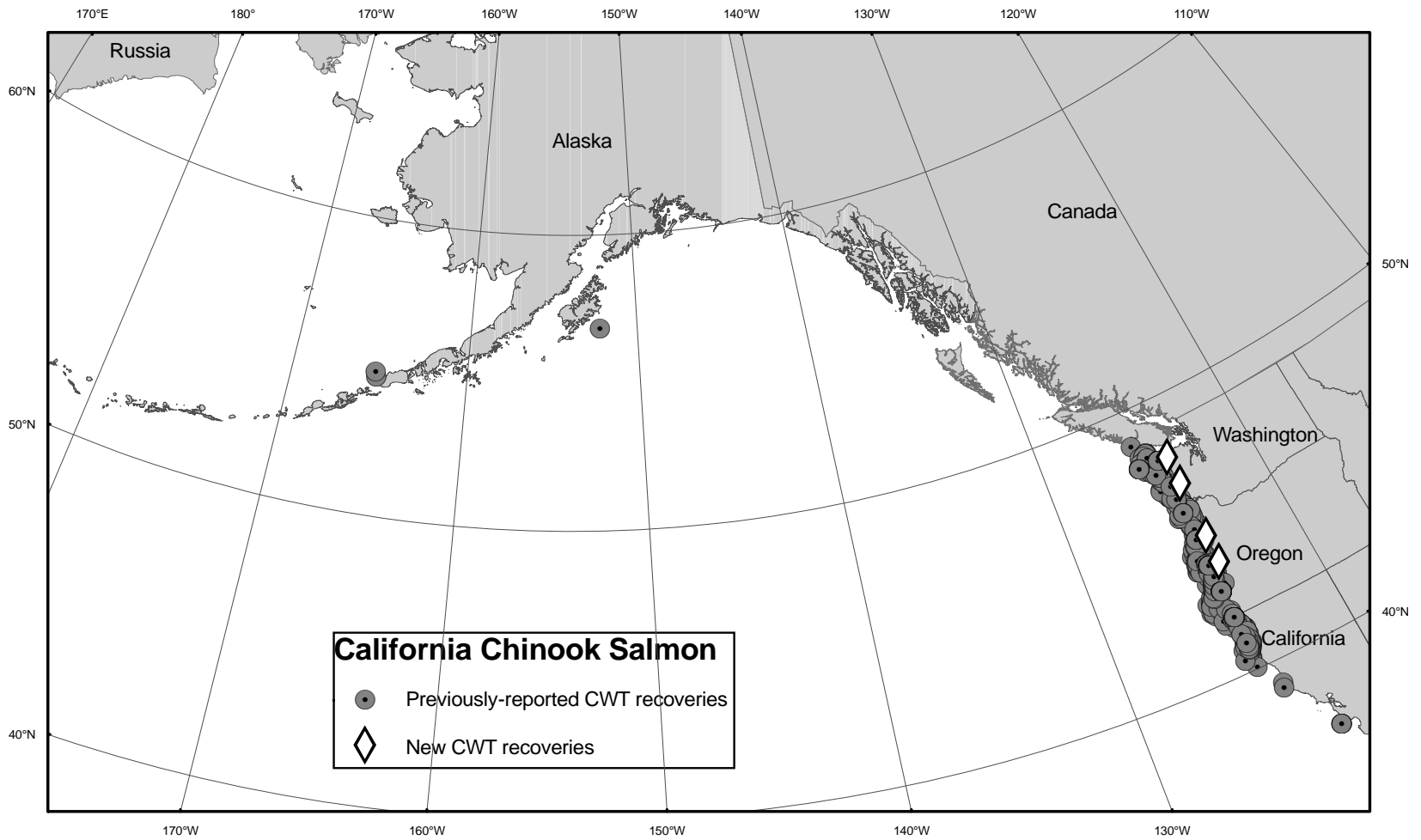


Figure 7. Ocean distribution of California Chinook salmon from CWT recoveries, 1981-2007.

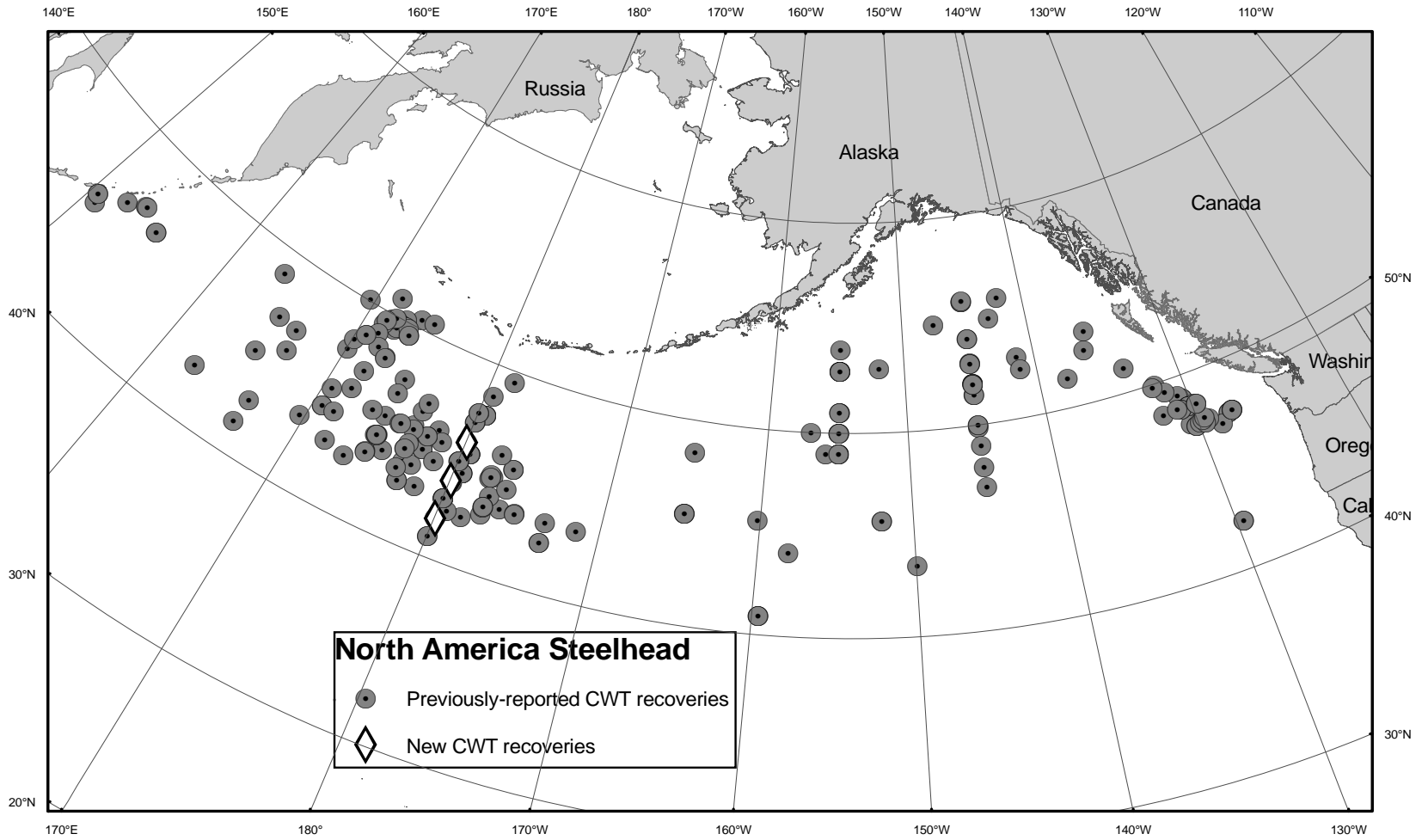


Figure 8. Ocean distribution of North America Steelhead from CWT recoveries, 1981-2007.

Table 1. Release and recovery information for CWT salmon (*Oncorhynchus spp.*) captured as bycatch in the Gulf of Alaska (GOA) trawl fishery for walleye pollock (*Theragra chalcogramma*). Species: 1 = Chinook salmon; run: 2 = Summer, 8 = Late Fall Upriver Bright Chinook; rearing type: H = hatchery, M = mixed hatchery and wild; release state: AK = Alaska, BC = British Columbia, WA = Washington. NMFS\_areas are shown in Appendix Table 1.

recovery_id	tag_code	species	stock_location_name	run	rearing_type	<sup>1</sup> release_location_psc_region	<sup>2</sup> release_location_psc_basin	release_location_name	release_location_state	<sup>3</sup> release_agency	brood_year	run_year	latitude (degrees)	longitude (degrees)	NMFS_area
2006091082	040723	1	CRYSTAL CR		H	SEAK	SEAK	GASTINEAU CH 111-40	AK	DIPC	2001	2006	57	-154	
2006091084	036368	1	CHICKAMIN R 101-71		H	SEAK	SEAK	L PORT WALTER 109-10	AK	NMFS	2002	2006	57	-155	
2006091085	040746	1	CRYSTAL CR		H	SEAK	SEAK	ANITA BAY 107-30	AK	SSRA	2001	2006	57	-154	
2006091086	040915	1	WHITMAN LK		H	SEAK	SEAK	HERRING COVE 101-45	AK	SSRA	2002	2006	57	-154	
2006091087	0501040308	1	COLUMBIA R UPRIVER S	8	H	CECR	WIND	LTL WHITE SALMON@NFH	WA	FWS	2003	2006	57	-155	
2006091098	184831	1	S-KITSUM ABV CANYON	2	H	NASK	SKNA	R-KITSUM ABV CANYON	BC	CDFO	2003	2006	57	-151	
2007091006	184831	1	S-KITSUM ABV CANYON	2	H	NASK	SKNA	R-KITSUM ABV CANYON	BC	CDFO	2003	2007			620
2007091010	632577	1	WELLS HATCHERY	2	M	CRGN	CRGNG	COLUMBIA R - GENERAL	WA	WDFW	2003	2007	55	-154	

<sup>1</sup>Region: CECR=Central Columbia R. (Bonneville Dam to McNary Dam), CRGN=Columbia River, general, NASK=Nass R. - Skeena R, SEAK=Southeast Alaska.

<sup>2</sup>Basin (if different than region):CRGNG=Columbia R; general, combined, unknown, or undefined; WIND=Wind R-White Salmon R/ WA.

<sup>3</sup>Agency: CDFO=Canadian Department of Fisheries and Oceans, DIPC=Douglas Island Pink and Chum, Inc. (AK), FWS=U.S. Fish and Wildlife Service, NMFS=National Marine Fisheries Service (AK), QDNR=Quinault Department of Natural Resources, SSRA=Southern Southeast Regional Aquaculture Assn. (AK), WDFW=Washington Department of Fish & Wildlife



Table 2. Release and recovery information for CWT salmon (*Oncorhynchus spp.*) captured as bycatch in the Bering Sea-Aleutian Islands (BSAI) trawl fishery for walleye pollock (*Thragra chalcogramma*). Species: 1 = Chinook salmon; run: 1 = Spring, 2 = Summer, 3 = Fall; rearing type: H = hatchery, M = mixed hatchery and wild, W = Wild; release state: AK = Alaska, BC = British Columbia, WA = Washington, OR = Oregon, ID = Idaho, CA = California. NMFS\_areas are shown in Appendix Table 1.

recovery_id	tag_code	species	stock_location_name	run	rearing_type	<sup>1</sup> release_location_psc_region	<sup>2</sup> release_location_psc_basin	release_location_name	release_location_state	<sup>3</sup> release_agency	brood_year	run_year	latitude (degrees)	longitude (degrees)	NMFS_area
2006091083	310276	1	DECEPTION CR 247-41		H	CNAK	COOK	ELMENDORF	AK	ADFG	2003	2006	55	-168	
2006091095	310275	1	DECEPTION CR 247-41		H	CNAK	COOK	ELMENDORF	AK	ADFG	2003	2006	55	-167	
2006091096	093842	1	TRASK R (TRASK HT)	3	H	NOOR	WTN	TRASK R HATCHERY	OR	ODFW	2002	2006	54	-162	
2006091097	310275	1	DECEPTION CR 247-41		H	CNAK	COOK	ELMENDORF	AK	ADFG	2003	2006	54	-166	
2007091001	040858	1	MEDVEJIE		H	SEAK	SEAK	MEDVEJIE	AK	NSRA	2002	2007	54	-165	
2007091007	184936	1	S-ATNARKO R LOW	2	H	COBC	CCST	H-SNOOTLI CR	BC	CDFO	2002	2007	54	-165	
2007091008	032273	1	UNUK R 101-75		H	SEAK	SEAK	LITTLE PORT WALTER	AK	NMFS	2003	2007	54	-165	
2007091009	210481	1	QUEETS R 21.0016	3	H	NWC	QEQU	SALMON R FISH CULTUR	WA	QDNR	2002	2007	54	-165	

<sup>1</sup>Region: COBC=Coastal British Columbia, CNAK=Alaska Central, NOOR=North Coastal Oregon, NWC=North Washington Coast, SEAK=Southeast Alaska.

<sup>2</sup>Basin (if different than region): CCST=Central Coastal BC, COOK=Cook Inlet, QEQU=Queets R.-Quinault R., RIVR=Rivers & Smith Inlets, WTN=Wilson R.-Trask R.-Nestucca R.

<sup>3</sup>Agency: ADFG=Alaska Department of Fish & Game, CDFO=Canadian Department of Fisheries and Oceans, NMFS=National Marine Fisheries Service (AK), NSRA=Northern Southeast Regional Aquaculture Assn. (AK), ODFW=Oregon Department of Fish & Wildlife, QDNR=Quinault Department of Natural Resources.

Table 3. Release and recovery information for CWT salmon (*Oncorhynchus spp.*) captured as bycatch in the trawl fishery for Pacific hake (*Merluccius productus*) in the North Pacific Ocean off Washington/Oregon/California (WA/OR/CA). Species: 1 = Chinook salmon, 2 = coho salmon; run: 1 = Spring, 2 = Summer, 3 = Fall, 8 = Late Fall Upriver Bright Chinook; rearing type: H = hatchery; release state: AK = Alaska, BC = British Columbia, WA = Washington, OR = Oregon, ID = Idaho, CA = California.

recovery_id	tag_code	species	stock_location_name	run	rearing_type	<sup>1</sup> release_location_psc_region	<sup>2</sup> release_location_psc_basin	release_location_name	release_location_state	<sup>3</sup> release_agency	brood_year	run_year	latitude (degrees)	longitude (degrees)
2006B1001	051777	1	COLEMAN NFH	7	H	SACR	SACR	COLEMAN NFH	CA	FWS	2003	2006	47	-124
2006B1011	051699	1	COLEMAN NFH	7	H	SACR	SACR	COLEMAN NFH	CA	FWS	2003	2006	44	-124
2006B1022	091948	1	NESTUCCA R (CEDAR CR)	1	H	NOOR	WTN	NESTUCCA R	OR	ODFW	2002	2006	44	-124
2006B1147	065312	1	TRINITY RIVER	1	H	KLAM	TRIN	TRINITY R HATCHERY	CA	HVT	2003	2006	44	-124
2006B1268	631769	1	SNAKE R-LOWR 33.0002	8	H	SNAK	LOSN	LYONS FERRY REL.SITE	WA	WDFW	2003	2006	48	-124
2006B1423	631770	1	SNAKE R-LOWR 33.0002	3	H	SNAK	SNAKG	SNK BLW GRANDE RHOND	ID	WDFW	2003	2006	47	-124
2006B1446	632384	1	SAMISH (FRIDAY CR)	3	H	NOOK	SAM	FRIDAY CR 03.0017	WA	WDFW	2003	2006	47	-124
2006B1454	632374	1	GEORGE ADAMS (PURDY)	3	H	HOOD	SKDO	PURDY CR 16.0005	WA	WDFW	2003	2006	47	-124
2006B1465	184921	1	S-HARRISON R	3	H	FRTH	LWFR	R-CHEHALIS R	BC	CDFO	2002	2006	47	-124
2006B1473	065327	1	TRINITY RIVER	3	H	KLAM	TRIN	TRINITY R HATCHERY	CA	HVT	2004	2006	47	-124
2006B1578	632167	1	SNAKE R-LOWR 33.0002	8	H	SNAK	SNAKG	SNK BLW GRANDE RHOND	ID	WDFW	2002	2006	47	-124
2006B1606	185162	1	S-CHILLIWACK R	3	H	FRTH	LWFR	R-CHILLIWACK R	BC	CDFO	2003	2006	47	-124
2006B1632	632375	1	GEORGE ADAMS (PURDY)	3	H	HOOD	SKDO	PURDY CR 16.0005	WA	WDFW	2003	2006	47	-124
2006B1653	631770	1	SNAKE R-LOWR 33.0002	3	H	SNAK	SNAKG	SNK BLW GRANDE RHOND	ID	WDFW	2003	2006	47	-124
2006B1677	065318	1	TRINITY RIVER	3	H	KLAM	TRIN	TRINITY R HATCHERY	CA	HVT	2003	2006	45	-124
2006B1694	632389	1	FINCH CR 16.0222	3	H	HOOD	SKDO	FINCH CR 16.0222	WA	WDFW	2003	2006	47	-124
2006B1700	633164	1	METHOW & OKANOGAN	2	H	UPCR	MEOK	METHOW R 48.0002	WA	WDFW	2004	2006	47	-124
2006B1701	632283	1	GROVERS CR 15.0299	3	H	MPS	EKPN	GROVERS CR HATCHERY	WA	SUQ	2003	2006	47	-124
2006B1702	631769	1	SNAKE R-LOWR 33.0002	8	H	SNAK	LOSN	LYONS FERRY REL.SITE	WA	WDFW	2003	2006	47	-124

Table 3. cont.

recovery_id	tag_code	species	stock_location_name	run	rearing_type	<sup>1</sup> release_location_psc_region	<sup>2</sup> release_location_psc_basin	release_location_name	release_location_state	<sup>3</sup> release_agency	brood_year	run_year	latitude (degrees)	longitude (degrees)
2006B1703	632283	1	GROVERS CR 15.0299	3	H	MPS	EKPN	GROVERS CR HATCHERY	WA	SUQ	2003	2006	47	-124
2006B1704	631770	1	SNAKE R-LOWR 33.0002	3	H	SNAK	SNAKG	SNK BLW GRANDE RHOND	ID	WDFW	2003	2006	47	-124
2006B1705	632388	1	ISSAQUAH CR 08.0178	3	H	MPS	LAKW	ISSAQUAH CR 08.0178	WA	WDFW	2003	2006	48	-125
2006B1706	632897	1	GEORGE ADAMS (PURDY)	3	H	HOOD	SKDO	PURDY CR 16.0005	WA	WDFW	2004	2006	48	-125
2006B1707	631770	1	SNAKE R-LOWR 33.0002	3	H	SNAK	SNAKG	SNK BLW GRANDE RHOND	ID	WDFW	2003	2006	48	-125
2006B1899	631769	1	SNAKE R-LOWR 33.0002	8	H	SNAK	LOSN	LYONS FERRY REL.SITE	WA	WDFW	2003	2006	47	-124
2006B1900	185535	1	S-CHILLIWACK R	3	H	FRTH	LWFR	R-CHILLIWACK R	BC	CDFO	2002	2006	47	-124
2006B1901	631783	1	BIG SOOS CR 09.0072	3	H	MPS	DUWA	BIG SOOS CR 09.0072	WA	WDFW	2002	2006	47	-124
2006B2400	632372	1	WHITE R 10.0031	1	H	SPS	EKPS	MINTER CR 15.0048	WA	WDFW	2004	2006	43	-124
2006B2407	632972	1	ISSAQUAH CR 08.0178	3	H	MPS	LAKW	ISSAQUAH CR 08.0178	WA	WDFW	2004	2006	43	-124
2006B2414	632964	1	VOIGHT CR 10.0414	3	H	MPS	PUYA	VOIGHT CR 10.0414	WA	WDFW	2004	2006	43	-124
2006B2416	632897	1	GEORGE ADAMS (PURDY)	3	H	HOOD	SKDO	PURDY CR 16.0005	WA	WDFW	2004	2006	43	-124
2006B2693	062705	1	FEATHER RIVER	3	H	SACR	FEA	LIVE OAK	CA	CDWR	2002	2006	44	-124
2006B2703	185028	1	S-CHILLIWACK R	3	H	FRTH	LWFR	R-CHILLIWACK R	BC	CDFO	2004	2006	48	-124
2006B2727	062402	1	FEATHER RIVER	1	H	SACR	SFBA	SAN PABLO BAY	CA	CDWR	2003	2006	48	-124
2006B2730	185163	1	S-CHILLIWACK R	3	H	FRTH	LWFR	R-CHILLIWACK R	BC	CDFO	2003	2006	48	-124
2006B2764	631770	1	SNAKE R-LOWR 33.0002	3	H	SNAK	SNAKG	SNK BLW GRANDE RHOND	ID	WDFW	2003	2006	48	-124
2006B2782	632388	1	ISSAQUAH CR 08.0178	3	H	MPS	LAKW	ISSAQUAH CR 08.0178	WA	WDFW	2003	2006	48	-124
2006B2785	632597	1	COWLITZ R 26.0002	1	H	LOCR	COWL	COWLITZ R 26.0002	WA	WDFW	2003	2006	48	-124
2006B2791	210547	1	CLEAR CR 11.0013C	3	H	SPS	NISQ	CLEAR CR 11.0013C	WA	NISQ	2003	2006	48	-124
2006B2812	210555	1	WHITE R 10.0031	1	H	MPS	PUYA	WHITE R 10.0031	WA	MUCK	2003	2006	48	-124
2006B2823	210484	1	CLEAR CR 11.0013C	3	H	SPS	NISQ	CLEAR CR 11.0013C	WA	NISQ	2002	2006	48	-124
2006B2840	632284	1	MINTER CR 15.0048	3	H	SPS	EKPS	MINTER CR 15.0048	WA	WDFW	2003	2006	48	-124
2006B2843	185532	1	S-CHILLIWACK R	3	H	FRTH	LWFR	R-CHILLIWACK R	BC	CDFO	2003	2006	48	-124
2006B2845	632966	1	BIG SOOS CR 09.0072	3	H	MPS	DUWA	BIG SOOS CR 09.0072	WA	WDFW	2004	2006	48	-124

Table 3. cont.

<sup>1</sup>Region: FRTH=Fraser R.-Thompson R., HOOD=Hood Canal, KLAM=Klamath R.-Trinity R., LOCR=Lower Columbia R. (mouth to Bonneville Dam), MPS=Puget Sound Mid, NOOK=Nooksack R., NOOR=North Coastal Oregon, SACR=Sacramento R., SNAK=Snake R. (ID), SPS=Puget Sound South, UPCR=Upper Columbia R. (above McNary Dam; excluding Snake R.).

<sup>2</sup>Basin (if different than region): COWL=Cowlitz R./WA, DUWA=Duwamish R.-Green R., EKPN=East Kitsap North of Narrows, EKPS=East Kitsap South of Narrows, FEA=Feather R., LAKW=Lake Washington, LOSN=Lower Snake R., below Perry/WA, LWFR=Lower Fraser R. (below Hope + tributaries), MEOK=Methow R.-Okanogan R./WA, NISQ=Nisqually R., PUYA=Puyallup R., SFBA=San Francisco-San Pablo-Grizzly-Susin Bays, SKDO=Skokomish R.-Dosewallips R.-Great Bend, SNAKG=Snake R., general, TRIN=Trinity R., WTN=Wilson R.-Trask R.-Nestucca R.

<sup>3</sup>Agency: CDFO=Canadian Department of Fisheries and Oceans, CDWR=California Department of Water Resources, HVT=Hoopa Valley Tribe (CA), FWS=U.S. Fish and Wildlife Service, MUCK=Muckleshoot Tribe (WA), NISQ=Nisqually Tribe (ID), ODFW=Oregon Department of Fish & Wildlife, SUQ=Suquamish Tribe (WA), WDFW=Washington Department of Fish & Wildlife.

Table 4. Release and recovery information for CWT salmon (*Oncorhynchus spp.*) captured in Japanese research cruises in the North Pacific Ocean in 2005 and 2007. Species: 3 = Steelhead; run: 2 = Summer, 4 = Winter; rearing type: H = hatchery; release state: WA = Washington, ID = Idaho.

recovery_id	tag_code	species	stock_location_name	run	rearing_type	<sup>1</sup> release_location_psc_region	<sup>2</sup> release_location_psc_basin	release_location_name	release_location_state	<sup>3</sup> release_agency	brood_year	run_year	latitude (degrees)	longitude (degrees)
2005092002	102675	3	PAH A	2	H	SNAK	SALM	PAHSIMEROI HATCHERY	ID	IDFG	2003	2005	42	180
2007092006	102171	3	SAWTOOTH A	2	H	SNAK	SALM	SAWTOOTH HATCHERY	ID	FWS	2005	2007	44	180
2007092010	210576	3	QUINALT LK (21)	4	H	NWC	QEQU	QUINALT R -BELOW LK	WA	QDNR	2004	2007	46	180

<sup>1</sup>Region: NWC=North Washington Coast, SNAK=Snake R.

<sup>2</sup>Basin (if different than region): QEQU=Queets R.-Quinalt R.,SALM=Salmon R/ ID.

<sup>3</sup>Agency: FWS=U.S. Fish and Wildlife Service, IDFG=Idaho Department of Fish & Game, QDNR=Quinalt Department of Natural Resources.

Appendix Fig 1. U.S. National Marine Fisheries Service (NMFS) statistical areas in the Bering Sea and Aleutian Islands (left panel) and Gulf of Alaska right panel).

