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Proposed Thermal Marks for Salmon from British Columbia for Brood Year 2000

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Summary of British Columbia thermal marking programs

The primary use of thermal marking in British Columbia is to distinguish hatchery-origin chum and chinook salmon from wild salmon in terminal fisheries and in spawning populations. For chum salmon the use of thermal marks has replaced finclips as a means for marking fish at some hatcheries. Thermal marks are also being used to validate information on the harvest and survival of chinook salmon based on coded-wire tag studies. Hatchery sockeye salmon released into lakes in the Canada-Alaska transboundary area have been thermally marked in cooperation with the Alaska Department of Fish and Game. These studies are designed to evaluate the survival of fry released in different lake systems. In addition thermal marking has been used to compare the success of different hatchery release strategies including size of fish at release, timing of release and location of release, to identify hatchery fish in studies on early marine distribution and survival, and the interactions between hatchery and wild salmon.

The proposed thermal marking program for the 2000 brood year salmon in British Columbia is shown in Table 1. The proposed program is similar to the 1999 brood year program, however it is planned to mark sockeye salmon from Rivers Inlet and Smith Inlet in the central coast region for the first time. The notation used in Table 1 is the RBr system (Munk and Geiger 1998). However, note that the + is used only to separate details about different thermal bands and is not used to distinguish between pre and post hatch bands. The 'R' (Region) codes 1 (pre-hatch), 2 (post-hatch) and 3 (pre-hatch and post-hatch) are currently used in British Columbia for that purpose.

A summary of thermal mark releases for chum and chinook salmon in British Columbia for brood years 1992 to 1999 is provided (Table 2). Information regarding the thermal marking program in British Columbia is available from Fisheries and Oceans Canada, Pacific Biological Station, Nanaimo.

Reference

Munk K.M.and Geiger, H.J. 1998. Thermal Marking of Otoliths: the "RBr" Coding Structure of Thermal Marks (NPAFC Doc. 367). Alaska Department of Fish and Game, Juneau Alaska 99801-5526 19p.

Table 1 Proposed Thermal Mark Releases from British Columbia for 2000 Brood

Brood Year	Species	Facility	Release Site	Proposed Thermal Mark : RBr Code	Comments
2000	Chinook	Robertson Creek Hatchery	Stamp River	1 : 1.5	
2000	Chinook	Nitinat River Hatchery	Nitinat River	2 : [1.2 + 2.3 + 3.2]	
2000	Chinook	Nitinat River Hatchery	Sarita River	2 : [1.3 + 2.2 + 3.3]	
2000	Chinook	Conuma River Hatchery	Conuma River	2 : 1.5	
2000	Chinook	Conuma River Hatchery	Sucwoa River	2 : 1.3	May apply different mark to distinguish from Tlupana
2000	Chinook	Conuma River Hatchery	Tlupana River	2 : 1.3	
2000	Chinook	Chilliwack River Hatchery	Chilliwack River	2 : 1.7	
2000	Chinook	Quinsam River Hatchery	Quinsam/Campbell River	2 : [1.2 + 2.2 + 3.2]	
2000	Chinook	Quinsam River Hatchery	Seapen off Campbell Estuary	2 : [1.2 + 2.2]	
2000	Chum	Nitinat River Hatchery	Nitinat River (early release)	1 : 1.5	
2000	Chum	Nitinat River Hatchery	Nitinat River (late release)	1 : 1.5 + 2.2	
2000	Chum	Conuma River Hatchery	Conuma River	2 : 1.4	
2000	Chum	Conuma River Hatchery	Conuma Estuary (seapen)	2 : 1.5	
2000	Chum	Conuma River Hatchery	Tlupana River	2 : [1.2 + 2.3]	
2000	Chum	Conuma River Hatchery	Sucwoa River	2 : [1.2 + 2.3]	
2000	Chum	Conuma River Hatchery	Canton River	2 : [1.2 + 2.2]	
2000	Chum	Conuma River Hatchery	Deserted River	2 : [1.2 + 2.2]	
2000	Sockeye	Snootli River Hatchery	Rivers Inlet (Owikeno Lake stocks)	1:1.3+2.5	
2000	Sockeye	Snootli River Hatchery	Smiths Inlet (Long Lake stocks)	1:1.3+2.6	

Table 2 Preliminary Release Numbers for Thermally Marked Chinook and Chum in British Columbia

Chinook

Hatchery Facility:	Robertson Cr	Robertson Cr	Nitinat R	Nitinat R	Conuma R	Conuma R	Conuma R	Chilliwack R	Quinsam R
Release Site(s):	Stamp River	Nahmint R & Seapen	Nitinat R & Lake	Sarita R	Conuma R & Seapen	Tlupana R	Sucwoa River	Chilliwack R	Quinsam R. & Campbell R. & Seapen
Broodyear:									
1992	8,400,429		500,000	156,632	na			na	na
1993	6,939,205	134,594	6,195,122	210,776	na			na	na
1994	7,272,539		6,353,525	237,979	663,691			na	na
1995	8,273,553		4,073,259	7,086	390,040			813,089	na
1996	8,451,699	21,807	7,474,233	58,469	507,047	22,635	13,959	2,055,821	3,628,008
1997	8,927,415	5,539	6,341,195	307,914	176,496			1,921,522	2,712,900
1998	7,575,588		4,908,227	462,165	2,439,247	55,945		1,807,651	3,559,730
1999	7,676,568	412,614	3,513,460	447,777	unk	unk		1,226,873	4,662,299

Chum

Hatchery Facility:	Nitinat R	Conuma R	Conuma R	Conuma R	Conuma R	Conuma R	Conuma R
Release Site(s):	Nitinat R & Lake	Conuma R	Conuma Estuary	Tlupana River	Sucwoa River	Canton River	Deserted River
Broodyear:							
1993	28,363,894						
1994	30,831,080						
1995	24,649,925						
1996	31,941,437						
1997	34,830,668						
1998	35,455,056	1,105,067	3,686,051	1,234,402	1,998,626	1,340,117	2,058,209
1999	23,721,507	unk	unk	unk	unk	unk	unk

N.B. Some release numbers include both river and 'sea-pen' releases from nearby estuaries or lakes.