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Proposed Thermal Marks for Salmon from British Columbia for Brood Year 2007

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Abstract

In British Columbia thermal marking continues to play an important role for both research and for fisheries management. For 2007 nearly 65 million salmon are expected to be thermally marked encompassing 35 different thermal mark releases from 15 hatcheries. The plan is similar to that proposed for 2006. A few smaller releases have been curtailed due to operational requirements while an extra sockeye release is proposed from Shuswap River Hatchery to look at differences in survival rates from different release locations.

Introduction

Thermal marks are being used to look at a number of different issues in British Columbia. They are being used to distinguish hatchery origin salmonids (chinook, chum and sockeye) from naturally spawned (wild) salmon in terminal fisheries and in spawning populations. Thermal marks on sockeye and chinook are also being used to assess the success of stock rebuilding. 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 and to look at straying rates of chinook.

Plan for 2007 Brood Year Stocks

The proposed thermal marking program for salmon in British Columbia for the 2007 brood year is shown in Table 1. The bulk of the proposal is similar to that submitted for 2006 (Till, J. 2006) and marks will remain the same except where prevented by operational constraints. Other important components of the plan in addition to the regular 'production' marks include:.

A continuation of chinook marking at both Cowichan and Nanaimo River hatcheries on the East Coast of Vancouver Island (ECVI) to look at hatchery contribution to depressed ECVI stocks. The marking of Quinsam River fed fry to assess survival rates of chinook that more closely mimic their wild counterparts than regular 'production' marks. Skaha Lake (Okanagan) sockeye marks will be used for long term assessment of both juvenile production and adult returns and will allow differentiation from other Columbia River adipose clipped stocks. They will also permit study of survival rates of nearshore and offshore release strategies in Skaha Lake.

The notation (including delimiters) used in Table 1 is consistent with the RBr system (Munk and Geiger 1998).

References

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.

Till, J. 2006. Proposed thermal marks for salmon from British Columbia for brood year 2006. (NPAFC Doc. 947) 4 p. Fisheries and Oceans Canada, Nanaimo, British Columbia, Canada V9T 1K3.

Table 1 Proposed Thermal Mark Releases from British Columbia for 2007 Brood Year					
Brood Year	**Species**	**Facility**	**Release Site**	**Proposed Thermal Mark : RBr Code**	**Proposed Release (thousand)**
2007	Chinook	Chilliwack River Hatchery	Chilliwack River	2:1.7	1,200
2007	Chinook	Conuma River Hatchery	Early seapen release.	2:1.5-2.2	850
2007	Chinook	Conuma River Hatchery	Late seapen release.	2:1.5-2.3	850
2007	Chinook	Conuma River Hatchery	Sucwoa River	2:1.3	40
2007	Chinook	Conuma River Hatchery	Tlupana River	2:1.3	40
2007	Chinook	Conuma River Hatchery	Burman River	2:1.4,2.2	250
2007	Chinook	Conuma River Hatchery. Transferred to Tahsis H.	Tahsis River	2:1.9	200
2007	Chinook	Cowichan River Hatchery	Cowichan River	1:1.4-2.1	1,800
2007	Chinook	Marble River Hatchery	Marble River	1:1.3,2.2,3.2	1,000
2007	Chinook	Nanaimo River Hatchery	Nanaimo River (summer run)	2:1.5	180
2007	Chinook	Nanaimo River Hatchery	Nanaimo River (fall run)	2:1.2-2.3	350
2007	Chinook	Nitinat River Hatchery	Nitinat River	2:1.2,2.3,3.2	1,920
2007	Chinook	Nitinat River Hatchery	Nitinat River	2:1.2,2.3,3.2,4.2	700
2007	Chinook	Nitinat River Hatchery	Sarita River	2:1.3,2.2,3.3	400
2007	Chinook	Nitinat River Hatchery. Transferred to Goldstream H.	Esquimault Harbour	1:1.4	100
2007	Chinook	Nitinat River Hatchery. Transferred to Sooke H.	Sooke River	1:1.4	128
2007	Chinook	Nitinat River Hatchery	Sooke Harbour	2:1.2,2.3,3.2	72
2007	Chinook	Quinsam River Hatchery	Quinsam River	2:1.2/2.2/3.2	1,900
2007	Chinook	Quinsam River Hatchery	Seapen off Campbell Estuary	2:1.2/2.2	1,000
2007	Chinook	Quinsam River Hatchery	Campbell River	1:1.3-2.4	1,000
2007	Chinook	Quinsam River Hatchery	Fed fry outplants to Upper Quinsam R.	1:1.2-2.4	0
2007	Chinook	Quinsam River Hatchery	Salmon River	2:1.2/2.2/3.2/4.2	50
2007	Chinook	Robertson Creek Hatchery	Stamp River	1:1.3	6,000
2007	Chinook	Robertson Creek Hatchery	Henderson Lake	1:1.5	100
2007	Chinook	Robertson Creek Hatchery	Nahmint River	1:1.3-2.2	250
2007	Chinook	San Juan Enhancement Soc.	San Juan River	2:1.3n	720
2007	Chum	Conuma River Hatchery	Conuma Estuary (seapen)	2:1.5	1,500
2007	Chum	Conuma River Hatchery	Canton River	2:1.2,2.2	1,000
2007	Chum	Conuma River Hatchery	Sucwoa River	2:1.2,2.3	1,000
2007	Chum	Conuma River Hatchery	Tlupana River	2:1.2,2.3	1,000
2007	Chum	Nitinat River Hatchery	Klanawa	1:1.3,2.1	3,000
2007	Chum	Nitinat River Hatchery	Nitinat River	1:1.3,2.1	30,000
2007	Sockeye	Inch Creek Hatchery	Pitt River	2:1.4,2.2	2,000
2007	Sockeye	Nimpkish River Hatchery	Woss/Vernon Lakes	1:1.3	1,500
2007	Sockeye	Shuswap River Hatchery	Skaha Lake (nearshore)	2:1.3,2.3	750
2007	Sockeye	Shuswap River Hatchery	Skaha Lake (offshore)	2:1.3,2.3,3.2	750