

NPAFC
Doc. 1471
Rev. _____

Proposed Thermal Marks for Salmon from Canada, Brood Year 2013

by

Susan DiNovo, David O'Brien and Wilf Luedke

Fisheries and Oceans Canada
South Coast Stock Assessment
Nanaimo, BC V9T 1K3
CANADA

Submitted to the

NORTH PACIFIC ANADROMOUS FISH COMMISSION

By

CANADA

April 2013

THIS PAPER MAY BE CITED IN THE FOLLOWING MANNER:

DiNovo, S., D. O'Brien and W. Luedke. 2013. Proposed Thermal Marks for Salmon from Canada, Brood Year 2013. NPAFC Doc. 1471. 4 pp. Fisheries and Oceans Canada, Nanaimo, British Columbia, Canada V9T 1K3. (Available at <http://www.npafc.org>).

Proposed Thermal Marks for Salmon from Canada, Brood Year 2013

Susan DiNovo, David O'Brien and Wilf Luedke

Fisheries & Oceans Canada, South Coast Stock Assessment,
3225 Stephenson Point Road, Nanaimo, British Columbia, Canada V9T 1K3

Abstract

Thermal marking continues to play an important role for both research and fisheries management in Canada. Canada plans to thermally mark approximately 66 million Pacific salmon for release in 2014/15. Thermal marking will include 53 thermal marks applied at 18 hatcheries with marked salmon released at 40 locations. The plan is similar to the 2012 brood year marking plan, fish planned for release in 2013/14 (DiNovo et al. 2012).

Introduction

Thermal marking in Canada continues to focus primarily on Chinook and chum stocks with limited marking of sockeye, coho and pink. Thermal marks are used to distinguish hatchery from naturally spawned (wild) salmon in terminal fisheries and in spawning populations. Thermal marks on sockeye, Chinook, coho and pink are also being used to assess different hatchery release strategies. 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, survival and straying rates of Chinook salmon estimated by coded-wire tag studies (Hankin et al. 2005).

Plan for 2013 Brood Year Stocks

The proposed thermal marking program for salmon in Canada for the 2013 brood year is shown in Table 1; using the Uniform Hatch Code notation (Johnson et al. 2006). The bulk of the proposal is similar to that submitted for 2012 (DiNovo et al. 2012) and proposed marks remain the same except where prevented by operational constraints. Important components of the plan include continuation of Chinook marking at both Cowichan and Nanaimo River Hatcheries on the East Coast of Vancouver Island (ECVI) to permit assessment of hatchery contribution to these depressed ECVI stocks. Additionally, the use of multiple thermal marks at Nitinat River Hatchery for both Chinook and coho will allow continued assessment of fast and slow growth hatchery rearing strategies as well as release locations for these species. Naturalization of rearing channels and ponds are also being studied for release advantage. Four different marks are being applied to sockeye releases into Skaha Lake on a two year cycle to enable assessment of different release strategies.

References

- Hankin, D. G., J. H. Clark, R. B. Deriso, J. C. Garza, G. S. Morishima, B. E. Riddell, C. Schwarz, and J. B. Scott. 2005. Report of the expert panel on the future of the coded wire tag recovery program for Pacific salmon. Report to the Pacific Salmon Commission. Vancouver, Canada. 243 p. Available from <http://www.psc.org/info_codedwiretagreview.htm>
- Johnson, W. F., R. P. Josephson, T. R. Frawley, and D. S. Oxman. 2006. Revised web-based North Pacific salmon otolith mark directory. North Pacific Anadromous Fisheries Commission Doc. 971. 39 p. Alaska Department of Fish and Game, Juneau, Alaska.
- DiNovo, S., J. Till and D. O'Brien. 2011. Proposed Thermal Marks for Salmon from Canada, Brood Year 2011. NPAFC Doc. 1317. 3 pp. Fisheries and Oceans Canada, Nanaimo, British Columbia, Canada V9T 1K3. (Available at <http://www.npafc.org>).
- DiNovo, S., and D. O'Brien. 2012. Proposed Thermal Marks for Salmon from Canada, Brood Year 2012. NPAFC Doc. 1374. 3 pp. Fisheries and Oceans Canada, Nanaimo, British Columbia, Canada V9T 1K3. (Available at <http://www.npafc.org>).

Table 1. Proposed Canadian releases of thermal marked salmon in 2014/15.

Brood Year	Species	Facility	Hatch Code	Proposed Release (Thousand's)
2013	Chinook	Chilliwack River Hatchery	H7	1,040
2013	Chinook	Conuma River Hatchery	H4,2	350
2013	Chinook	Conuma River Hatchery	H5-2	1,350
2013	Chinook	Conuma River Hatchery	H5-3	1,350
2013	Chinook	Conuma River Hatchery	H2,4	150
2013	Chinook	Conuma River Hatchery	H2,5	150
2013	Chinook	Conuma River Hatchery	H3	80
2013	Chinook	Cowichan River Hatchery	4-1H	1,000
2013	Chinook	Gwani Hatchery	3,3nH	250
2013	Chinook	Marble River Hatchery	3,2,2H	900
2013	Chinook	Marble River Hatchery	3,2,3H	90
2013	Chinook	Nanaimo River Hatchery	H2-3	400
2013	Chinook	Nanaimo River Hatchery	H5	220
2013	Chinook	Nitinat River Hatchery	H2,3,2	1,500
2013	Chinook	Nitinat River Hatchery	H2,3,2,3	750
2013	Chinook	Nitinat River Hatchery	H2,3,2,2	750
2013	Chinook	Nitinat River Hatchery	H3,2,3	165
2013	Chinook	Nitinat River Hatchery	H3,2,4	165
2013	Chinook	Nitinat River Hatchery	H3,1,3	50
2013	Chinook	Nitinat River Hatchery	H3,1,4	165
2013	Chinook	Nitinat River Hatchery for Goldstream H. and Sooke R.	4H	350
2013	Chinook	Nitinat River Hatchery for Sooke H.	1,4H	72
2013	Chinook	Puntledge River Hatchery	H6n	1,200
2013	Chinook	Quinsam River Hatchery	H2/2	1,000
2013	Chinook	Quinsam River Hatchery	3-4H	960
2013	Chinook	Quinsam River Hatchery	2-4H	250
2013	Chinook	Quinsam River Hatchery	H2/2/2	1,900
2013	Chinook	Quinsam River Hatchery	H2/2/2/2	120
2013	Chinook	Robertson Creek Hatchery	3/2H	75
2013	Chinook	Robertson Creek Hatchery	3H	6,000
2013	Chinook	San Juan Enhancement Soc.	H3n	720
2013	Chinook	Spius Creek Hatchery	H4/4	80
2013	Chinook	Spius Creek Hatchery	H4/4,2	80
2013	Chinook	Spius Creek Hatchery	H3/3	60
2013	Chinook	Spius Creek Hatchery	H3/3,2	60
2013	Chinook	Tahsis River Hatchery	H7,3	150
2013	Chinook	Tahsis River Hatchery	H9	150
2013	Chum	Conuma River Hatchery	H5	1,500
2013	Chum	Conuma River Hatchery	H2,2	1,000
2013	Chum	Conuma River Hatchery	H2,3	2,000
2013	Chum	Kitimat River Hatchery	2/2H	850
2013	Chum	Kitimat River Hatchery	2-2H	850
2013	Chum	Nitinat River Hatchery	3,1H	25,000
2013	Coho	Nitinat River Hatchery	H3	50
2013	Coho	Nitinat River Hatchery	H4	50
2013	Coho	Nitinat River Hatchery	H2,3	50
2013	Coho	Nitinat River Hatchery	H2,4	50
2013	Sockeye	Inch Creek Hatchery	H4,2	2,000
2013	Sockeye	Shuswap River Hatchery	H3,3	460
2013	Sockeye	Shuswap River Hatchery	H3,3,2	460
2013	Pink	Quinsam River Hatchery	H2/2	6,800
2013	Pink	Nanaimo River Hatchery	2/2H	50
2013	Pink	Nanaimo River Hatchery	H4	900

Table 1. Proposed Canadian releases of thermal marked salmon in 2014/15. (cont'd)

Totals by species	
Chinook	24,102
Chum	31,200
Coho	200
Sockeye	2,920
Pink	7,750
Grand Total	66,172
