

**Proposed Thermal Marks for Salmon from Canada,
Brood Year 2017**

by

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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 2018/19. Thermal marking will include 76 thermal marks applied at 18 hatcheries with marked salmon released at 46 locations. The plan is similar to the 2016 brood year marking plan, fish planned for release in 2017/18 (DiNovo and Luedke 2016).

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 2017 Brood Year Stocks

The proposed thermal marking program for salmon in Canada for the 2017 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 the release of salmon from Canadian hatcheries in 2017/18 (DiNovo and Luedke 2016) 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

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Table 1. Proposed Canadian releases of thermal marked salmon in 2018/19.

Brood Year	Species	Facility	Hatch Code	Proposed Release (Thousand's)
2017	Chinook	Chilliwack River Hatchery	H7	1,040
2017	Chinook	Conuma River Hatchery	H4,2	350
2017	Chinook	Conuma River Hatchery	H5-2	1,350
2017	Chinook	Conuma River Hatchery	H5-3	1,350
2017	Chinook	Conuma River Hatchery	H5-4	500
2017	Chinook	Conuma River Hatchery	H2,4	350
2017	Chinook	Conuma River Hatchery	H2,5	150
2017	Chinook	Conuma River Hatchery	H3	80
2017	Chinook	Cowichan River Hatchery	4-1H	500
2017	Chinook	Cowichan River Hatchery	4,1H	500
2017	Chinook	Gwa'ni Hatchery	3,3nH	300
2017	Chinook	Marble River Hatchery	3,2,2H	900
2017	Chinook	Marble River Hatchery	3,2,3H	90
2017	Chinook	Nanaimo River Hatchery	H2-3	200
2017	Chinook	Nanaimo River Hatchery	H2,3	200
2017	Chinook	Nanaimo River Hatchery	H5	220
2017	Chinook	Nitinat River Hatchery	H2,3,2	1,000
2017	Chinook	Nitinat River Hatchery	H2,3,2,3	1,000
2017	Chinook	Nitinat River Hatchery	H2,3,2,2	1,000
2017	Chinook	Nitinat River Hatchery	H3,2,3,2	1,000
2017	Chinook	Nitinat River Hatchery	H3,2,3	125
2017	Chinook	Nitinat River Hatchery	H3,2,4	125
2017	Chinook	Nitinat River Hatchery	H3,1,3	125
2017	Chinook	Nitinat River Hatchery	H3,1,4	125
2017	Chinook	Nitinat River Hatchery for Goldstream H. and Sooke R.	4H	350
2017	Chinook	Nitinat River Hatchery for Sooke H.	1,4H	300
2017	Chinook	Puntledge River Hatchery	H6n	1,450
2017	Chinook	Quinsam River Hatchery	H2/2	1,000
2017	Chinook	Quinsam River Hatchery	3-4H	960
2017	Chinook	Quinsam River Hatchery	H2/2/4	250
2017	Chinook	Quinsam River Hatchery	H2/2/2	1,900
2017	Chinook	Quinsam River Hatchery	H2/2/2/2	120
2017	Chinook	Robertson Creek Hatchery	3/2H	15
2017	Chinook	Robertson Creek Hatchery	H3/2	15
2017	Chinook	Robertson Creek Hatchery	3H3/2	100
2017	Chinook	Robertson Creek Hatchery	3/2H4	100
2017	Chinook	Robertson Creek Hatchery	3/2H2	100
2017	Chinook	Robertson Creek Hatchery	3H4	100
2017	Chinook	Robertson Creek Hatchery	3H	5,800
2017	Chinook	San Juan Enhancement Soc.	H3n	720
2017	Chinook	Spius Creek Hatchery	H4/4	80
2017	Chinook	Spius Creek Hatchery	H4/4,2	80
2017	Chinook	Spius Creek Hatchery	H3/3	60
2017	Chinook	Spius Creek Hatchery	H3/3,2	60
2017	Chinook	Tahsis River Hatchery	H7,3	150
2017	Chinook	Conuma River Hatchery for Tahsis R. H.	H9	150

Table 1. Proposed Canadian releases of thermal marked salmon in 2018/19. (cont'd)

Brood Year	Species	Facility	Hatch Code	Proposed Release (Thousand's)
2017	Chum	Conuma River Hatchery	H5	1,500
2017	Chum	Conuma River Hatchery	H7	500
2017	Chum	Conuma River Hatchery	H3	450
2017	Chum	Conuma River Hatchery	H2,2	500
2017	Chum	Conuma River Hatchery	H2,3	1,000
2017	Chum	Kitimat River Hatchery	3/2H	283
2017	Chum	Kitimat River Hatchery	3-2H	283
2017	Chum	Kitimat River Hatchery	H1,4	283
2017	Chum	Kitimat River Hatchery	H1-4	283
2017	Chum	Kitimat River Hatchery	H1/4	283
2017	Chum	Kitimat River Hatchery	H1,4n	283
2017	Chum	Nitinat River Hatchery	3,1H	25,000
2017	Chum	Gwa'ni Hatchery	3,1,2H	58
2017	Chum	Gwa'ni Hatchery	H3,2	58
2017	Chum	Gwa'ni Hatchery	H3-2	58
2017	Chum	McIntyre Creek SIF	6,3H	7
2017	Chum	McIntyre Creek SIF	6--3H	7
2017	Chum	McIntyre Creek SIF	6/3H	7
2017	Coho	Nitinat River Hatchery	H3	50
2017	Coho	Nitinat River Hatchery	H4	50
2017	Coho	Nitinat River Hatchery	H2,3	50
2017	Coho	Nitinat River Hatchery	H2,4	50
2017	Sockeye	Inch Creek Hatchery	H4,2	2,000
2017	Sockeye	Kl cp'elk'stim Hatchery	H3,4 rotational	0
2017	Sockeye	Kl cp'elk'stim Hatchery	H3,4,2 rotational	0
2017	Sockeye	Kl cp'elk'stim Hatchery	H3,4,1 rotational	0
2017	Sockeye	Kl cp'elk'stim Hatchery	H3,4,3 rotational	0
2017	Sockeye	Kl cp'elk'stim Hatchery	H3,3	1,200
2017	Sockeye	Kl cp'elk'stim Hatchery	H3,3,2	1,200
2017	Sockeye	Kl cp'elk'stim Hatchery	H3,3,1	1,200
2017	Sockeye	Kl cp'elk'stim Hatchery	H3,3,3	1,200
2017	Sockeye	Rosewall Hatchery	3H2-2	100
2017	Sockeye	Rosewall Hatchery	3H2/2	100
2017	Sockeye	Rosewall Hatchery	3H	800
2017	Pink	Quinsam River Hatchery	H2/2 rotational	0
2017	Pink	Quinsam River Hatchery	2/2H rotational	0
2017	Pink	Nanaimo River Hatchery	H4	1,000
Totals by species				
	Chinook			26,440
	Chum			30,845
	Coho			200
	Sockeye			7,800
	Pink			1,000
	Grand Total			66,285