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**Proposed Thermal Marks for Salmon from Canada,
Brood Year 2016**

by

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Proposed Thermal Marks for Salmon from Canada, Brood Year 2016

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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 79 million Pacific salmon for release in 2017/18. Thermal marking will include 70 thermal marks applied at 17 hatcheries with marked salmon released at 44 locations. The plan is similar to the 2015 brood year marking plan, fish planned for release in 2016/17 (DiNovo et al. 2015).

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 2016 Brood Year Stocks

The proposed thermal marking program for salmon in Canada for the 2016 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 release in 2016/17 (DiNovo et al. 2015) 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 2017/18.

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

Table 1. Proposed Canadian releases of thermal marked salmon in 2017/18. (cont'd)

Species	Facility	Hatch Code	Proposed Release (Thousand's)
Chum	Conuma River Hatchery	H5	1,500
Chum	Conuma River Hatchery	H7	500
Chum	Conuma River Hatchery	H3	450
Chum	Conuma River Hatchery	H2,2	500
Chum	Conuma River Hatchery	H2,3	1,000
Chum	Kitimat River Hatchery	3/2H	340
Chum	Kitimat River Hatchery	3-2H	340
Chum	Kitimat River Hatchery	H1,4	340
Chum	Kitimat River Hatchery	H1-4	340
Chum	Kitimat River Hatchery	H1/4	340
Chum	Nitinat River Hatchery	3,1H	25,000
Coho	Nitinat River Hatchery	H3	50
Coho	Nitinat River Hatchery	H4	50
Coho	Nitinat River Hatchery	H2,3	50
Coho	Nitinat River Hatchery	H2,4	50
Sockeye	Inch Creek Hatchery	H4,2	2,000
Sockeye	Kl cp'elk'stim Hatchery	H3,4	700
Sockeye	Kl cp'elk'stim Hatchery	H3,4,2	700
Sockeye	Kl cp'elk'stim Hatchery	H3,4,1	700
Sockeye	Kl cp'elk'stim Hatchery	H3,4,3	700
Sockeye	Kl cp'elk'stim Hatchery	H3,3 rotational	0
Sockeye	Kl cp'elk'stim Hatchery	H3,3,2 rotational	0
Sockeye	Kl cp'elk'stim Hatchery	H3,3,1 rotational	0
Sockeye	Kl cp'elk'stim Hatchery	H3,3,3 rotational	0
Sockeye	Rosewall Hatchery	3H2-2	100
Sockeye	Rosewall Hatchery	3H2/2	100
Sockeye	Rosewall Hatchery	3H	800
Pink	Quinsam River Hatchery	H2/2	6,800
Pink	Quinsam River Hatchery	2/2H	8,000
Pink	Nanaimo River Hatchery	H4	900
Chinook			26,440
Chum			30,650
Coho			200
Sockeye			5,800
Pink			15,700
Grand Total			78,790