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## **Proposed Thermal Marks for Salmon from Canada, Brood Year 2012**

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 60 million Pacific salmon for release in 2013/14. Thermal marking will include 46 thermal marks applied at 15 hatcheries with marked salmon released at 53 locations. The plan is similar to that of the 2011 brood year released in 2012/13 (DiNovo et al. 2011).

## **Introduction**

Thermal marking in Canada continues to focus primarily on Chinook and chum stocks with limited marking of sockeye and coho. Thermal marks are used to distinguish hatchery from naturally spawned (wild) salmon in terminal fisheries and in spawning populations. Thermal marks on sockeye, Chinook and coho 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 (Harkin et al. 2005).

## **Plan for 2012 Brood Year Stocks**

The proposed thermal marking program for salmon in Canada for the 2012 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 2011 (DiNovo et al. 2011) and proposed marks remain the same except where prevented by operational constraints. Important components of the plan in addition to regular marks 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. 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 thermal mark releases in 2013/14.

Brood Year	Species	Facility	Hatch Code	Proposed Release (Thousand's)
2012	Chinook	Chilliwack River Hatchery	H7	1,040
2012	Chinook	Conuma River Hatchery	H4,2	350
2012	Chinook	Conuma River Hatchery	H5-2	850
2012	Chinook	Conuma River Hatchery	H5-3	850
2012	Chinook	Conuma River Hatchery	H2,4	300
2012	Chinook	Conuma River Hatchery	H3	80
2012	Chinook	Cowichan River Hatchery	4-1H	600
2012	Chinook	Gwani Hatchery	3,3nH	500
2012	Chinook	Marble River Hatchery	3,2,2H	910
2012	Chinook	Marble River Hatchery	3,2,3H	90
2012	Chinook	Nanaimo River Hatchery	H2-3	350
2012	Chinook	Nanaimo River Hatchery	H5	180
2012	Chinook	Nitinat River Hatchery	H2,3,2	1,500
2012	Chinook	Nitinat River Hatchery	H2,3,2,3	750
2012	Chinook	Nitinat River Hatchery	H2,3,2,2	750
2012	Chinook	Nitinat River Hatchery	H3,2,3	200
2012	Chinook	Nitinat River Hatchery	H3,2,4	200
2012	Chinook	Nitinat River Hatchery	H3,1,3	50
2012	Chinook	Nitinat River Hatchery	H3,1,4	50
2012	Chinook	Nitinat River Hatchery	H2,3,2	72
2012	Chinook	Nitinat River Hatchery for Goldstream H. and Sooke H.	4H	298
2012	Chinook	Quinsam River Hatchery	H2/2	1,000
2012	Chinook	Quinsam River Hatchery	3-4H	1,000
2012	Chinook	Quinsam River Hatchery	2-4H	15
2012	Chinook	Quinsam River Hatchery	H2/2/2	1,900
2012	Chinook	Quinsam River Hatchery	H2/2/2/2	120
2012	Chinook	Robertson Creek Hatchery	3/2H	5
2012	Chinook	Robertson Creek Hatchery	3/2H4	40
2012	Chinook	Robertson Creek Hatchery	3H	6,000
2012	Chinook	San Juan Enhancement Soc.	H3n/2	720
2012	Chinook	Spius Creek Hatchery	H4/4	80
2012	Chinook	Spius Creek Hatchery	H4/4,2	76
2012	Chinook	Tahsis River Hatchery	H7,3	110
2012	Chinook	Tahsis River Hatchery	H9	110
2012	Chinook	Tenderfoot Hatchery	H3/3	120
2012	Chum	Conuma River Hatchery	H5	1,500
2012	Chum	Conuma River Hatchery	H2,2	1,000
2012	Chum	Conuma River Hatchery	H2,3	2,000
2012	Chum	Nitinat River Hatchery	3,1H	25,000
2012	Chum	Nitinat River Hatchery	3,2H	5,000
2012	Coho	Nitinat River Hatchery	H3	100
2012	Coho	Nitinat River Hatchery	H4	100
2012	Sockeye	Inch Creek Hatchery	H4,2	2,000
2012	Sockeye	Gwani Hatchery	3H	1,500
2012	Sockeye	Shuswap River Hatchery	H3,4	468
2012	Sockeye	Shuswap River Hatchery	H3,4,2	468
<b>Totals by species</b>				
	Chinook			21,266
	Chum			34,500
	Coho			200
	Sockeye			3,700
	<b>Grand Total</b>			<b>59,666</b>