

Proposed Otolith Marks for Brood Year 2014 Salmon in Russia

by

Elena Akinicheva, Vladimir Volobuev, Evgeny Fomin

Sakhalin Scientific and Research Institute of Fisheries & Oceanography Yuzhno-Sakhalinsk,
Magadan Scientific and Research Institute of Fisheries & Oceanography Magadan,
Russia

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Abstract

Otolith marking of salmon of 2014 brood year will be conducted in five regions of the Far East: Kamchatka, Magadan, Sakhalin, Khabarovsk and Kuril regions. Marking will be carried out using two methods: thermal and “dry”. Their application will be determined by the possibilities and specificity of water supply of incubated embryos at hatcheries of the Far East. The dominating method of marking will be a “dry” one – it will be used on the 77% of salmon hatcheries. Salmon will be marked at 32 hatcheries. Totally 42 otolith marks will be used.

Keywords: otolith marking, method of marking, juvenile salmon, hatcheries, marks.

The plan of otolith marking of Salmon of 2014 generation

Mass marking of juvenile salmon is an important instrument allowing to evaluate the rate of survivability of hatchery raised juvenile salmon after its seaward run from the hatcheries and rivers into the seashore area, and to study the ways of migration and fry salmon distribution in the Sea of Okhotsk and areas of fattening in the ocean. Moreover, otolith marking allows determining the effectiveness of hatcheries’ work by looking at the amount of returned hatchery raised fish.

Salmon of 2014 generation will be marked at 32 hatcheries of the Far East: 18 in Sakhalin, 5 in Kamchatka, 4 in Magadan, 4 in Kuril Islands and 1 in Khabarovsk. Totally 42 marks will be used: 36 marks will be used for chum, 14 – for pink, 6 marks for coho, 3 – for sockeye, 1 for chinook, 1 for masu. Like in previous years marking of the juvenile salmon in the Far East will be carried out by using two methods: thermal at 8 hatcheries and “dry” at 26 hatcheries. Thermal marking will be conducted by decreasing temperature rate.

It is necessary to mention that otolith marking will dominate at the “prehatch” stage. Nine marks will be used at the “post hatch” stage. One mark will be used at the both stages. One and the same marks will be used for marking broods of different kinds of salmon for the convenience of controlling the returned fish.

Russian plan of marking is shown in the Table 1. Samples of thermal and “dry” marking are given in Hatch code (Hagen et al., 2000).

References

Hagen, P., H. J. Geiger, E. C. Volk, and J. J. Grimm. 2000. Thermal mark patterns applied to salmon from Alaska, Washington and Oregon for brood year 1999 and some proposed marks for brood year 2000. (NPAFC Doc. 463 rev. 1) 8 p. Alaska Department of Fish and Game, Juneau, Alaska 99801-5526, USA.

Table1. Plan marks from Russia for 2014 brood year stocks of salmon

Mark TYPE	BROOD YEAR	SPECIES	COUNTRY	STATE/ PROVINCE	FACILITY	HATCH CODE	GRAPHIC IMAGE		MARK SCHEDULE
							PREHATCH	POSTHATCH	
1	2	3	4	5	6	7	8	9	10
DM	2014	Chum	Russia	Magadan	Armansky Hatchery	5H	I I I I I		(5X)24D:24W
DM	2014	Chum	Russia	Magadan	Olsky Hatchery	3n,3H	III I I I		(2X)12D:12W,(1X)12D:48W, (3X)24D:24W
DM	2014	Chum	Russia	Magadan	Olsky Hatchery	5,3nH	I I I I I III		(4X)24D:24W,(1X)24D:48W,(3X)12D:12W
DM	2014	Chum	Russia	Magadan	Olsky Hatchery	1,3,1H	I I I I I		(1X)24D:48W,(2X)24D:24W, (2X)24D:48W
DM	2014	Chum	Russia	Magadan	Tauysky Hatchery	4,3H	I I I I I I I		(3X)24D:24W,(1X)24D:48W, (3X)24D:24W
DM	2014	Chum	Russia	Magadan	Yansky Hatchery	1,2,1H	I I I I		(1X)24D:48W,(1X)24D:24W, (2X)24D:48W
DM	2014	Chum	Russia	Kamchatka	Ozerkovsky Hatchery	3,2H	I I I I I		(2X)24D:24W,(1X)24D:48W, (2X)24D:24W
DM	2014	Chum	Russia	Kamchatka	Ketkinsky Hatchery	7H	I I I I I I I		(7X)24D:24W
TM	2014	Chum	Russia	Kamchatka	Paratunsky Hatchery	H3,4		I I I I I I I	(2X)24C:24H,(1X)24C:48H, (4X)24C:24H
TM	2014	Chum	Russia	Sakhalin	Ado-Tymovsky Hatchery	3H3,2	I I I	I I I I I	(3X)24C:24H+(2X)24C:24H,(1X)24C:48H, (2X)24C:24H
DM	2014	Chum	Russia	Sakhalin	Pobedinsky Hatchery	5,1H	I I I I I I		(4X)24D:24W,(2X)24D:48W
DM	2014	Chum	Russia	Sakhalin	Buyuklovsky Hatchery	1,5H	I I I I I I I		(1X)24D:48W,(5X)24D:24W
TM	2014	Chum	Russia	Sakhalin	Sokolovsky Hatchery	H3,2,2		I I I I I I I	(2X)24C:24H,(1X)24C:48H, (1X)24C:24H,(1X)24C:48H,(2X)24C:24H
TM	2014	Chum	Russia	Sakhalin	Bereznyakovsky Hatchery	H3,1,3		I I I I I I I	(2X)24C:24H,(2X)24C:48H,(3X)24C:24H
DM	2014	Chum	Russia	Sakhalin	Taranaysky Hatchery	4,2H	I I I I I I		(3X)24D:24W,(1X)24D:48W, (2X)24D:24W
DM	2014	Chum	Russia	Sakhalin	Sokolnikovsky Hatchery	3n,1,3H	III I I I I		(2X)12D:12W,(1X)12D:48W, (1X)24D:48W,(3X)24D:24W
DM	2014	Chum	Russia	Sakhalin	Yasnomorsky Hatchery	3n,2,1H	III I I I		(2X)12D:12W,(1X)12D:48W, (1X)24D:24W,(1X)24D:48W, (1X)24D:24W
DM	2014	Chum	Russia	Sakhalin	Kalininsky Hatchery	3n,1,2nH	III I I I		(2X)12D:12W,(1X)12D:48W, (1X)24D:48W,(2X)12D:12W
DM	2014	Chum	Russia	Sakhalin	Urozhayny Hatchery	6nH	IIIIII		(6X)12D:12W
DM	2014	Chum	Russia	Sakhalin	Ohotsky Hatchery	3,3nH	I I I III		(2X)24D:24W,(1X)24D:48W, (3X)12D:12W
DM	2014	Chum	Russia	Sakhalin	Lesnoy Hatchery	3n,4H	III I I I I		(2X)12D:12W,(1X)12D:48W, (4X)24D:24W
DM	2014	Chum	Russia	Sakhalin	Bakhura Hatchery	4,2nH	I I I I I I		(3X)24D:24W,(1X)24D:48W, (2X)12D:12W
TM	2014	Chum	Russia	Sakhalin	Sova Hatchery	H3,1,3n		I I I I I III	(2X)24C:24H,(2X)24C:48H,(3X)12C:12H
TM	2014	Chum	Russia	Sakhalin	Sova Hatchery	3,1,3nH	I I I I I III		(2X)24C:24H,(2X)24C:48H,(3X)12C:12H
DM	2014	Chum	Russia	Sakhalin	Sova Hatchery	4n,1,2H	IIII I I I		(3X)12D:12W,(1X)12D:48W, (1X)24D:48W,(2X)24D:24W
DM	2014	Chum	Russia	Sakhalin	Monetka Hatchery	3,1,2nH	I I I I I I		(2X)24D:24W,(2X)24D:48W,(2X)12D:12W
DM	2014	Chum	Russia	Sakhalin	Zalom Hatchery	3n,1,2H	III I I I I		(2X)12D:12W,(1X)12D:48W,(1X)24D:48W,(2X)24D:24W
DM	2014	Chum	Russia	Iturup	Kuril'sky Hatchery	3,4H	I I I I I I I		(2X)24D:24W,(1X)24D:48W, (4X)24D:24W
TM	2014	Chum	Russia	Iturup	Reydovyy Hatchery	H1,2,2		I I I I I	(1X)24C:48H,(1X)24C:24H, (1X)24C:48H,(2X)24C:24H
TM	2014	Chum	Russia	Iturup	Reydovyy Hatchery	1,2,2H	I I I I I		(1X)24C:48H,(1X)24C:24H, (1X)24C:48H,(2X)24C:24H
DM	2014	Chum	Russia	Iturup	Hatchery on bay Olya	3,3H	I I I I I I		(2X)24D:24W,(1X)24D:48W, (3X)24D:24W

Table1(Continuation).Plan marks from Russia for 2014 brood year stocks of salmon

Mark TYPE	BROOD YEAR	SPECIES	COUNTRY	STATE/ PROVINCE	FACILITY	HATCH CODE	GRAPHIC IMAGE		MARK SCHEDULE
							PREHATCH	POSTHATCH	
1	2	3	4	5	6	7	8	9	10
DM	2014	Chum	Russia	Iturup	Kitovyy Hatchery	7nH	IIIIII		(7X)12D:12W
DM	2014	Chum	Russia	Iturup	Kitovyy Hatchery	3-2H	III II		(2X)24D:24W,(1X)24D:72W, (2X)24D:24W
DM	2014	Chum	Russia	Iturup	Kitovyy Hatchery	5n,3H	IIII III		(4X)12D:12W,(1X)12D:48W, (3X)24D:24W
TM	2014	Chum	Russia	Khabarovsk	Kometa Hatchery	H3-3		III III	(2X)24C:24H,(1X)24C:72H,(3X)24C:24H
TM	2014	Chum	Russia	Khabarovsk	Kometa Hatchery	3-3H	III III		(2X)24C:24H,(1X)24C:72H,(3X)24C:24H
DM	2014	Pink	Russia	Magadan	Armansky Hatchery	1,5H	I IIIII		(1X)24D:48W,(5X)24D:24W
DM	2014	Pink	Russia	Magadan	Olsky Hatchery	3,2nH	III II		(2X)24D:24W,(1X)24D:48W, (2X)12D:12W
DM	2014	Pink	Russia	Magadan	Yansky Hatchery	1,2,1H	I III I		(1X)24D:48W,(1X)24D:24W, (2X)24D:48W
DM	2014	Pink	Russia	Sakhalin	Anivsky Hatchery	3,2H	III III		(2X)24D:24W,(1X)24D:48W, (2X)24D:24W
DM	2014	Pink	Russia	Sakhalin	Taranaysky Hatchery	7H	IIIIIII		(7X)24D:24W
DM	2014	Pink	Russia	Sakhalin	Lesnoy Hatchery	1,4H	I IIIII		(1X)24D:48W,(4X)24D:24W
DM	2014	Pink	Russia	Sakhalin	Bakhura Hatchery	3n,4H	III IIII		(2X)12D:12W,(1X)12D:48W, (4X)24D:24W
DM	2014	Pink	Russia	Sakhalin	Pugachevsky Hatchery	5H	IIIIII		(5X)24D:24W
DM	2014	Pink	Russia	Sakhalin	Pugachevsky Hatchery	3,1,2H	III IIII		(2X)24D:24W,(2X)24D:48W, (2X)24D:24W
DM	2014	Pink	Russia	Sakhalin	Monetka Hatchery	3,4H	III IIII		(2X)24D:24W,(1X)24D:48W, (4X)24D:24W
DM	2014	Pink	Russia	Iturup	Kuril'sky Hatchery	5,1H	IIIIII I		(4X)24D:24W,(2X)24D:48W
TM	2014	Pink	Russia	Iturup	Reydovyy Hatchery	H1,2,2		I III II	(1X)24H:48C,(1X)24H:24C, (1X)24H:48C,(2X)24H:24C
TM	2014	Pink	Russia	Iturup	Reydovyy Hatchery	1,2,2H	I III II		(1X)24H:48C,(1X)24H:24C, (1X)24H:48C,(2X)24H:24C
DM	2014	Pink	Russia	Khabarovsk	Kometa Hatchery	3n,3H	III IIII		(2X)12D:12W,(1X)12D:48W, (3X)24D:24W
DM	2014	Coho	Russia	Magadan	Armansky Hatchery	3,2nH	III II		(2X)24D:24W,(1X)24D:48W, (2X)12D:12W
DM	2014	Coho	Russia	Magadan	Olsky Hatchery	5H	IIIIII		(5X)24D:24W
DM	2014	Coho	Russia	Magadan	Tauysky Hatchery	4,1H	IIII I		(3X)24D:24W,(2X)24D:48W
DM	2014	Coho	Russia	Magadan	Yansky Hatchery	1,2,1H	I III I		(1X)24D:48W,(1X)24D:24W, (2X)24D:48W
TM	2014	Coho	Russia	Kamchatka	Paratunsky Hatchery	H3,4		III IIII	(2X)24C:24H,(1X)24C:48H, (4X)24C:24H
DM	2014	Coho	Russia	Kamchatka	Viluysky Hatchery	5,1H	IIIIII I		(4X)24D:24W,(1X)24D:48W, (1X)24D
DM	2014	Sockeye	Russia	Magadan	Olsky Hatchery	7H	IIIIIII		(7X)24D:24W
TM	2014	Sockeye	Russia	Kamchatka	Malkinsky Hatchery	3,1H	III I		(2X)24C:24H,(2X)24C:48H
DM	2014	Sockeye	Russia	Kamchatka	Ozerkovsky Hatchery	3,3H	III IIII		(2X)24D:24W,(1X)24D:48W, (3X)24D:24W
TM	2014	Chinook	Russia	Kamchatka	Malkinsky Hatchery	H4		IIII	(4X)24C:24H
DM	2014	Masu	Russia	Khabarovsk	Kometa Hatchery	3,2H	III III		(2X)24D:24W,(1X)24D:48W, (2X)24D:24W