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**Proposed Otolith Marks for Brood Year 2015 Salmon in  
Russia**

**by**

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## **Abstract**

Otolith marking of salmon of 2015 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 75% of salmon hatcheries. Salmon will be marked at 30 hatcheries. Totally 39 otolith marks will be used.

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

## **The plan of otolith marking of salmon of 2015 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 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 2015 generation will be marked at 30 hatcheries of the Far East: 15 in Sakhalin, 5 in Kamchatka, 4 in Magadan, 2 in Khabarovsk and 4 in Kuril Islands. Totally 39 marks will be used. Like in previous years marking of the juvenile salmon in the Far East will be carried out by using two methods: thermal at 6 hatcheries and “dry” at 24 hatcheries. Thermal marking will be conducted by decreasing temperature rate.

It is necessary to mention that otolith marking will dominate at the “prehatch” stage (83%). Seven marks will be used at the “post hatch” stage.

Russian plan of marking is shown in the Table 1. Samples of thermal and “dry” marking are given in the system of Hatch code (Hagen et al., 2000; Hagen, 1999).

## **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 2015 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	2015	Chum	Russia	Magadan	Armansky Hatchery	1,5H	I 11111		(1X)24D:48W,(5X)24D:24W
DM	2015	Chum	Russia	Magadan	Olsky Hatchery	1,2,1H	I 11 1		(1X)24D:48W,(1X)24D:24W, (2X)24D:48W
DM	2015	Chum	Russia	Magadan	Olsky Hatchery	3,3H	111 111		(2X)24D:24W,(1X)24D:48W, (3X)24D:24W
DM	2015	Chum	Russia	Magadan	Olsky Hatchery	4,3nH	1111 III		(3X)24D:24W,(1X)24D:48W, (3X)12D:12W
DM	2015	Chum	Russia	Magadan	Tauysky Hatchery	3n,4H	III 1111		(2X)12D:12W,(1X)12D:48W, (4X)24D:24W
DM	2015	Chum	Russia	Magadan	Yansky Hatchery	3,2n,2H	111 II 11		(2X)24D:24W,(1X)24D:48W, (1X)12D:12W,(1X)12D:48W,(2X)24D:24W
DM	2015	Chum	Russia	Kamchatka	Ozerkovsky Hatchery	4,3H	1111 111		(3X)24D:24W,(1X)24D:48W, (3X)24D:24W
DM	2015	Chum	Russia	Kamchatka	Ketkinsky Hatchery	5H	11111		(5X)24D:24W
TM	2015	Chum	Russia	Kamchatka	Paratunsky Hatchery	H6		111111	(6X)24C:24H
TM	2015	Chum	Russia	Sakhalin	Ado-Tymovsky Hatchery	3H5	111	11111	(3X)24D:24W+(5X)24C:24H
DM	2015	Chum	Russia	Sakhalin	Pobedinsky Hatchery	3,4H	111 1111		(2X)24D:24W,(1X)24D:48W, (4X)24D:24W
DM	2015	Chum	Russia	Sakhalin	Buyuklovsky Hatchery	5,2nH	11111 II		(4X)24D:24W,(1X)24D:48W, (2X)12D:12W
TM	2015	Chum	Russia	Sakhalin	Sokolovsky Hatchery	H3,4		111 1111	(2X)24C:24H,(1X)24C:48H, (4X)24C:24H
TM	2015	Chum	Russia	Sakhalin	Berezhnyakovsky Hatchery	H3,3		111 111	(2X)24C:24H,(1X)24C:48H, (3X)24C:24H
DM	2015	Chum	Russia	Sakhalin	Taranaysky Hatchery	3-3H	111 111		(2X)24D:24W,(1X)24D:72W, (3X)24D:24W
DM	2015	Chum	Russia	Sakhalin	Sokolnikovsky Hatchery	4,2nH	1111 II		(3X)24D:24W,(1X)24D:48W, (2X)12D:12W
DM	2015	Chum	Russia	Sakhalin	Yasnomorsky Hatchery	3,2H	111 11		(2X)24D:24W,(1X)24D:48W, (2X)24D:24W
DM	2015	Chum	Russia	Sakhalin	Kalininsky Hatchery	1,5nH	I IIIII		(1X)24D:48W,(5X)12D:12W
DM	2015	Chum	Russia	Sakhalin	Urozhayny Hatchery	4n,2H	IIII 11		(3X)12D:12W,(1X)12D:48W, (2X)24D:24W
DM	2015	Chum	Russia	Sakhalin	Ohotsky Hatchery	3,1,3nH	111 I III		(2X)24D:24W,(2X)24D:48W,(3X)12D:12W
DM	2015	Chum	Russia	Sakhalin	Lesnoy Hatchery	7H	1111111		(7X)24D:24W
DM	2015	Chum	Russia	Sakhalin	Bakhura Hatchery	3n,1,2H	III 1 11		(3X)12D:12W,(1X)12D:48W, (1X)24D:48W,(2X)24D:24W
DM	2015	Chum	Russia	Sakhalin	Monetka Hatchery	4n,3H	IIII 111		(3X)12D:12W,(1X)12D:48W, (3X)24D:24W
DM	2015	Chum	Russia	Iturup	Kuril'sky Hatchery	4n,1,2H	IIII 1 11		(3X)12D:12W,(1X)12D:48W, (1X)24D:48W,(2X)24D:24W
TM	2015	Chum	Russia	Iturup	Reydovyy Hatchery	5,3nH	1111 III		(4X)24C:24H,(1X)24C:48H, (3X)12C:12H

Table1. (Continuation).Plan marks from Russia for 2015 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	2015	Chum	Russia	Iturup	Hatchery on bay Olya	4,2H	I I I I I I		(3X)24D:24W,(1X)24D:48W, (2X)24D:24W
DM	2015	Chum	Russia	Iturup	Kitovyy Hatchery	3,5nH	I I I I I I I I		(2X)24D:24W,(1X)24D:48W, (5X)12D:12W
TM	2015	Chum	Russia	Khabarovsk	Kometa Hatchery	5n,3H	I I I I I I I I		(4X)12D:12W,(1X)12D:48W,(3X)24D:24W
DM	2015	Chum	Russia	Khabarovsk	Anyuysky Hatchery	1,3n,1H	I I I I I		(1X)24D:48W,(2X)12D:12W, (1X)12D:48W, (1X)24D:24W
DM	2015	Pink	Russia	Magadan	Armansky Hatchery	3n,4H	I I I I I I I I		(2X)12D:12W,(1X)12D:48W, (4X)24D:24W
DM	2015	Pink	Russia	Magadan	Olsky Hatchery	3,2H	I I I I I I		(2X)24D:24W,(1X)24D:48W, (2X)24D:24W
DM	2015	Pink	Russia	Magadan	Yansky Hatchery	4,2nH	I I I I I I I I		(3X)24D:24W,(1X)24D:48W, (2X)12D:12W
DM	2015	Pink	Russia	Sakhalin	Anivsky Hatchery	5,1H	I I I I I I I I		(4X)24D:24W,(2X)24D:48W
DM	2015	Pink	Russia	Sakhalin	Taranaysky Hatchery	3,4nH	I I I I I I I I		(2X)24H:24C,(1X)24H:48C, (4X)12H:12C
DM	2015	Pink	Russia	Sakhalin	Lesnoy Hatchery	1,5H	I I I I I I I I		(1X)24D:48W,(5X)24D:24W
DM	2015	Pink	Russia	Sakhalin	Bakhura Hatchery	3n,3H	I I I I I I I I		(2X)12D:12W,(1X)12D:48W, (3X)24D:24W
DM	2015	Pink	Russia	Sakhalin	Monetka Hatchery	1,4H	I I I I I I I I		(1X)24D:48W,(4X)24D:24W
DM	2015	Pink	Russia	Sakhalin	Urozhayny Hatchery	5nH	I I I I I I I I		(5X)12D:12W
DM	2015	Pink	Russia	Khabarovsk	Kometa Hatchery	5H	I I I I I I I I		(5X)24D:24W
DM	2015	Coho	Russia	Magadan	Armansky Hatchery	5H	I I I I I I I I		(5X)24D:24W
DM	2015	Coho	Russia	Magadan	Olsky Hatchery	4,1H	I I I I I I I I		(3X)24D:24W,(2X)24D:48W
DM	2015	Coho	Russia	Magadan	Tauysky Hatchery	3,4H	I I I I I I I I I I		(2X)24D:24W,(1X)24D:48W, (4X)24D:24W
DM	2015	Coho	Russia	Magadan	Yansky Hatchery	5,1H	I I I I I I I I I I		(4X)24D:24W,(2X)24D:48W
TM	2015	Coho	Russia	Kamchatka	Paratunsky Hatchery	H7		I I I I I I I I I I	(7X)24C:24H
DM	2015	Coho	Russia	Kamchatka	Viluyky Hatchery	3,3H	I I I I I I I I		(2X)24D:24W,(1X)24D:48W, (3X)24D:24W
TM	2015	Sockeye	Russia	Kamchatka	Malkinsky Hatchery	3H	I I I I I I		(3X)24C:24H
DM	2015	Sockeye	Russia	Kamchatka	Ozerkovsky Hatchery	3,1,3H	I I I I I I I I I I		(2X)24D:24W,(2X)24D:48W,(3X)24D:24W
TM	2015	Chinook	Russia	Kamchatka	Malkinsky Hatchery	H3		I I I I I I	(3X)24C:24H
DM	2015	Masu	Russia	Khabarovsk	Kometa Hatchery	3,2H	I I I I I I I I		(2X)24D:24W,(1X)24D:48W, (2X)24D:24W