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Proposed Otolith Marks for Brood Year 2012 Salmon in Russia

by

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Abstract

Otolith marking of salmon of 2012 brood year will be conducted in four regions of the Far East: Kamchatka, Magadan, Sakhalin, 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 81% of salmon at hatcheries. Salmon will be marked at 27 hatcheries. Totally 39 otolith marks will be used.

The plan of otolith marking of salmon of 2012 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 2012 generation will be marked at 27 hatcheries of the Far East: 14 in Sakhalin, 5 in Kamchatka, 4 in Magadan, 4 in Kuril Islands. Totally 39 marks will be used: 30 marks will be used for chum, 13 – for pink, 5marks for coho, 3 – for sockeye, 1 for chinook. 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 22 hatcheries. Thermal marking will be conducted by decreasing temperature rate.

It is necessary to mention that otolith marking will dominate at the “prehatch” stage. Seven marks will be used at the “post hatch” stage. 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 RBr records (Munk and Geiger, 1998) and the system of 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.

Munk, K. M., and H. J. Geiger. 1998. Thermal marking of otoliths: the "RBr" coding structure of thermal marks. (NPAFC Doc. 367) 19 p. CWT &Otolith Processing Lab., Alaska Department of Fish and Game, Juneau, Alaska, USA.

Table1.Plan marks from Russia for 2012 brood year stocks of salmon

Mark Type	BROOD YEAR	SPECIES	COUNTRY	STATE/ PROVINCE	HATCH CODE	FACILITY	RBr	GRAPHIC IMAGE		MARK SCHEDULE
								PREHATCH	POSTHATCH	
1	2	3	4	5	6	7	8	9	10	11
DM	2012	Chum	Russia	Magadan	3n,4H	ArmanskyHatchery	1:1.3n,2.4	III I III		(2X)12D:12W,(1X)12D:60W, (4X)24D:24W
DM	2012	Chum	Russia	Magadan	7H	OlskyHatchery	1:1.7	I IIIIII		(7X)24D:24W
DM	2012	Chum	Russia	Magadan	3n-3nH	OlskyHatchery	1:1.3n-2.3n	III III		(2X)12D:12W,(1X)12D:108W,(3X)12D:12W
DM	2012	Chum	Russia	Magadan	1,2H	OlskyHatchery	1:1.1,2.2	I II		(1X)24D:48W,(2X)24D:24W
DM	2012	Chum	Russia	Magadan	1,3,1H	TauyskyHatchery	1:1.1,2.3,3.1	I IIII		(1X)24D:48W,(2X)24D:24W,(1X)24D:48W,(1X)24D:24W
DM	2012	Chum	Russia	Magadan	5,1H	YanskyHatchery	1:1.5,2.1	I IIIII		(4X)24D:24W,(1X)24D:48W,(1X)24D:24W
DM	2012	Chum	Russia	Kamchatka	3H	OzerkovskyHatchery	1:1.3	I II		(3X)24D:24W
DM	2012	Chum	Russia	Kamchatka	5H	KetkinskyHatchery	1:1.5	I IIII		(5X)24D:24W
DM	2012	Coho	Russia	Kamchatka	5H	ViluyskyHatchery	1:1.5	I IIII		(5X)24D:24W
TM	2012	Chum	Russia	Kamchatka	H9	ParatunskyHatchery	2:1.9		I IIIIIIII	(9X)24H:24C
DM	2012	Chum	Russia	Sakhalin	3,2nH	Ado-TymovskyHatchery	1:1.3,2.2n	I II II		(2X)24D:24W,(1X)24D:48W, (2X)12D:12W
DM	2012	Chum	Russia	Sakhalin	1,4n,1H	PobedinskyHatchery	1:1.1,2.4n,3.1	I IIII I		(1X)24D:48W,(3X)12D:12W,(1X)12D:48W,(1X)24D:24W
DM	2012	Chum	Russia	Sakhalin	4,3H	BuyuklovskyHatchery	1:1.4,2.3	I IIIIII		(3X)24D:24W,(1X)24D:48W,(3X)24D:24W
TM	2012	Chum	Russia	Sakhalin	H1,4,1	SokolovskyHatchery	2:1.1,2.4,3.1		I IIIII	(1X)24H:48W,(3X)24H:24W,(1X)24H:48W,(1X)24H:24W
DM	2012	Chum	Russia	Sakhalin	1,4,1H	SokolovskyHatchery	1:1.1,2.4,3.1	I IIIII		(1X)24D:48W,(3X)24D:24W,(1X)24D:48W,(1X)24D:24W
TM	2012	Chum	Russia	Sakhalin	H4	BereznyakovskyHatchery	2:1.4		I III	(4X)24H:24C
TM	2012	Chum	Russia	Sakhalin	3,4H	TaranayskyHatchery	1:1.3,1.4	I IIIIII		(2X)24H:24C,(1X)24H:48C,(4X)24H:24C
TM	2012	Chum	Russia	Sakhalin	H3,4	TaranayskyHatchery	2:1.3,2.4		I IIIIII	(2X)24H:24C,(1X)24H:48C,(4X)24H:24C
DM	2012	Chum	Russia	Sakhalin	4,1H	SokolnikovskyHatchery	1:1.4,2.1	I IIII		(3X)24D:24W,(1X)24D:48W, (1X)24D:24W
DM	2012	Chum	Russia	Sakhalin	1,3n,1H	YasnomorskyHatchery	1:1.1,2.3n,3.1	I III I		(1X)24D:48W,(2X)12D:12W,(1X)12D:48W,(1X)24D:24W
DM	2012	Chum	Russia	Sakhalin	1,2n,2H	KalininskyHatchery	1:1.1,2.2n,3.2	I II I I		(1X)24D:48W,(1X)12D:12W,(1X)12D:48W,(2X)24D:24W
DM	2012	Chum	Russia	Sakhalin	9nH	UrozhaynyHatchery	1:1.9n	IIIIIIIII		(9X)12D:12W
DM	2012	Chum	Russia	Sakhalin	6H	ZalomHatchery	1:1.6	I IIIII		(5X)24D:24C
DM	2012	Chum	Russia	Sakhalin	3n,2,1H	MonetkaHatchery	1:1.3n,2.2,3.1	III I II		(2X)12D:12W,(1X12D:48W,(1X)24D:24W,(1X)24D:48W,(1X)24D:24W
DM	2012	Chum	Russia	Iturup	3,2H	Kuril`skyHatchery	1:1.3,2.2	I IIII		(2X)24D:24W,(1X)24D:48W, (2X)24D:24W
TM	2012	Chum	Russia	Iturup	H3n,3	ReydovyyHatchery	2:1.3n,2.3		III I II	(2X)12H:12W,(1X)12H:48W, (3X)24H:24W
TM	2012	Chum	Russia	Iturup	3n,3H	ReydovyyHatchery	1:1.3n,2.3	III I II		(2X)12H:12W,(1X)12H:48W, (3X)24H:24W
DM	2012	Chum	Russia	Iturup	5nH	HatcheryonbayOlya	1:1.5n	IIIII		(5X)12D:12W
DM	2012	Chum	Russia	Iturup	1,2,3nH	HatcheryonbayOlya	1:1.1,2.2,3.3n	I II III		(1X)24D:48W,(1X)24D:24W,(1X)24D:48W,(3X)12D:12W
DM	2012	Chum	Russia	Iturup	1,2n,3H	HatcheryonbayOlya	1:1.1,2.2n,3.3	I II I II		(1X)24D:48W,(1X)12D:12W,(1X)12D:48W,(3X)24D:24W
DM	2012	Chum	Russia	Iturup	3,3H	KitovyyHatchery	1:1.3,2.3	I IIIII		(2X)24D:24W,(1X24D:48W,(3X)24D:24W

Continuation Table1.Plan marks from Russia for 2012 brood year stocks of salmon

1	2	3	4	5	6	7	8	9	10	11
DM	2012	Pink	Russia	Magadan	3n,4H	ArmanskyHatchery	1:1.3n,2.4	III I III		(2X)12D:12W,(1X)12D:60W, (4X)24D:24W
DM	2012	Pink	Russia	Magadan	7H	OlskyHatchery	1:1.7	I IIIIII		(7X)24D:24W
DM	2012	Pink	Russia	Magadan	5,1H	YanskyHatchery	1:1.5,2.1	I IIIII		(4X)24D:24W,(1X)24D:48W,(1X)24D:24W
DM	2012	Pink	Russia	Sakhalin	8nH	AnivskyHatchery	1:1.8n	IIIIIIII		(8X)12D:12W
DM	2012	Pink	Russia	Sakhalin	7nH	TaranayskyHatchery	1:1.7n	IIIIIII		(7X)12D:12W
DM	2012	Pink	Russia	Sakhalin	9nH	UrozhaynyHatchery	1:1.9n	IIIIIIIII		(9X)12D:12W
DM	2012	Pink	Russia	Sakhalin	3n,1,2H	MonetkaHatchery	1:1.3n,2.1,3.2	III I II		(2X)12D:12W,(1X12D:48W,(1X)24D:48W,(2X)24D:24W
DM	2012	Pink	Russia	Sakhalin	1,2,4nH	MonetkaHatchery	1:1.1,2.2,3.4n	I II IIII		(1X)24D:48W,(1X)24D:24W,(1X)24D:48W,(4X)12D:12W
DM	2012	Pink	Russia	Sakhalin	1,3,2nH	MonetkaHatchery	1:1.1,2.3,3.2n	I III II		(1X)24D:48W,(2X)24D:24W,(1X)24D:48W,(2X)12D:12W
DM	2012	Pink	Russia	Sakhalin	3,2nH	IgrivayaHatchery	1:1.3,2.2n	I II II		(2X)24D:24W,(1X24D:48W,(2X)12D:12W
DM	2012	Pink	Russia	Iturup	3,2H	Kuril`skyHatchery	1:1.3,2.2	I IIII		(2X)24D:24W,(1X24D:48W,(2X)24D:24W
DM	2012	Pink	Russia	Iturup	1,2n,2H	Kuril`skyHatchery	1:1.1,2.2n,3.2	I II I I		(1X)24D:48W,(1X)12D:12W,(1X)12D:48W,(2X)24D:24W
DM	2012	Pink	Russia	Iturup	3,4nH	Kuril`skyHatchery	1:1.3,2.4n	I II IIII		(2X)24D:24W,(1X24D:48W,(4X)12D:12W
DM	2012	Pink	Russia	Iturup	1,4H	Kuril`skyHatchery	1:1.1,2.4	I IIII		(1X)24D:48W,(4X)24D:24W
TM	2012	Pink	Russia	Iturup	H5	ReydovyyHatchery	2:1.5		I IIII	(5X)24H:24C
DM	2012	Coho	Russia	Magadan	3n,4H	ArmanskyHatchery	1:1.3n,2.4	III I III		(2X)12D:12W,(1X)12D:48W, (4X)24D:24W
DM	2012	Coho	Russia	Magadan	7H	OlskyHatchery	1:1.7	I IIIIII		(7X)24D:24W
DM	2012	Coho	Russia	Magadan	1,3,1H	TauyskyHatchery	1:1.1,2.3,3.1	I IIII		(1X)24D:48W,(2X)24D:24W,(1X)24D:48W,(1X)24D:24W
DM	2012	Coho	Russia	Magadan	5,1H	YanskyHatchery	1:1.5,2.1	I IIIII		(4X)24D:24W,(1X)24D:48W,(1X)24D:24W
TM	2012	Coho	Russia	Kamchatka	H9	ParatunskyHatchery	2:1.9		I IIIIIIII	(9X)24H:24C
TM	2012	Chinook	Russia	Kamchatka	H3,2	MalkinskyHatchery	2:1.3,2.2		I IIII	(2X)24H:24C,(1X)24H:48C,(2X)24H:24C
TM	2012	Sockeye	Russia	Kamchatka	3,2H	MalkinskyHatchery	1:1.3,2.2	I IIII		(2X)24H:24C,(1X)24H:48C,(2X)24H:24C
DM	2012	Sockeye	Russia	Kamchatka	3H	OzerkovskyHatchery	1:1.3	I II		(3X)24D:24W
DM	2012	Sockeye	Russia	Kamchatka	5H	OzerkovskyHatchery	1:1.5	I IIII		(5X)24D:24W