

Proposed Otolith Marks for Brood Year 2010 Salmon in Russia

by

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Abstract

Mass marking will be carried out in four regions of the Far East: Kamchatka, Sakhalin, Magadan, and Khabarovsk region. The marking will be conducted in two different ways: thermal and “dry” depending upon the possibilities and specificity of water supply of hatcheries. Juvenile salmon will be marked at twenty-four salmon hatcheries and thirty-two marks will be used. Thirty marks will be used for marking chum, eleven for pink, eight for coho, two for sockeye, one for masu and chinook. It is supposed to mark about 220 millions of juvenile salmon.

Plan Otolith Marks for 2010 brood year Salmon of Russia

In Russia mass otolith marking is used to evaluate the survival rate of young salmon in coastal areas, to see the distribution of fingerlings in the Okhotsk Sea, fattening regions and the migration ways in the north-eastern Pacific. Besides, marking is an important tool of defining the efficiency of the hatcheries based on the evaluation of the returned salmon raised at hatcheries. The brood of 2010 salmon will be marked at twenty-four hatcheries of the Far East, that is: five hatcheries in Kamchatka, four hatcheries in Magadan, eleven hatcheries in Sakhalin, three hatcheries of Kurilski island of Iturup and one hatchery in Khabarovsk region. Totally thirty-two marks will be used: thirty marks for chum, eleven for pink, eight for coho, two for sockey, and one for masu and chinook.

It is necessary to mention the growing activity in salmon marking in Sakhalino-Kurilski region since 2008. In previous years marking was carried out at ten hatcheries of Kamchatka, Magadan and Khabarovsk region in total volume of 50 millions of juvenile salmon. There are fifty-three hatcheries in Russia. Thirty-six hatcheries work on the territory of Sakhalin and Kurili (fig. 1). In 2008 marking was conducted at eight hatcheries of Sakhalin and Kurili. In 2010 marking will be carried out at eleven hatcheries of Sakhalin and three hatcheries of Iturup (Kurili). It is planned to conduct marking of sample portions of embryos at a number of hatcheries of Sakhalin. The production of marked juvenile salmon in this region has recently exceeded the number of 100 millions, total production of marked young salmon in the Far East exceeds the number of 200 millions of fish.

Marking of the brood of salmon of 2010 will be conducted in two ways: thermal and “dry”. The choice of marking will depend upon the water supply of hatcheries. Thermal marking will be prevail in Sakhalin and “dry” will be used mainly in other regions.

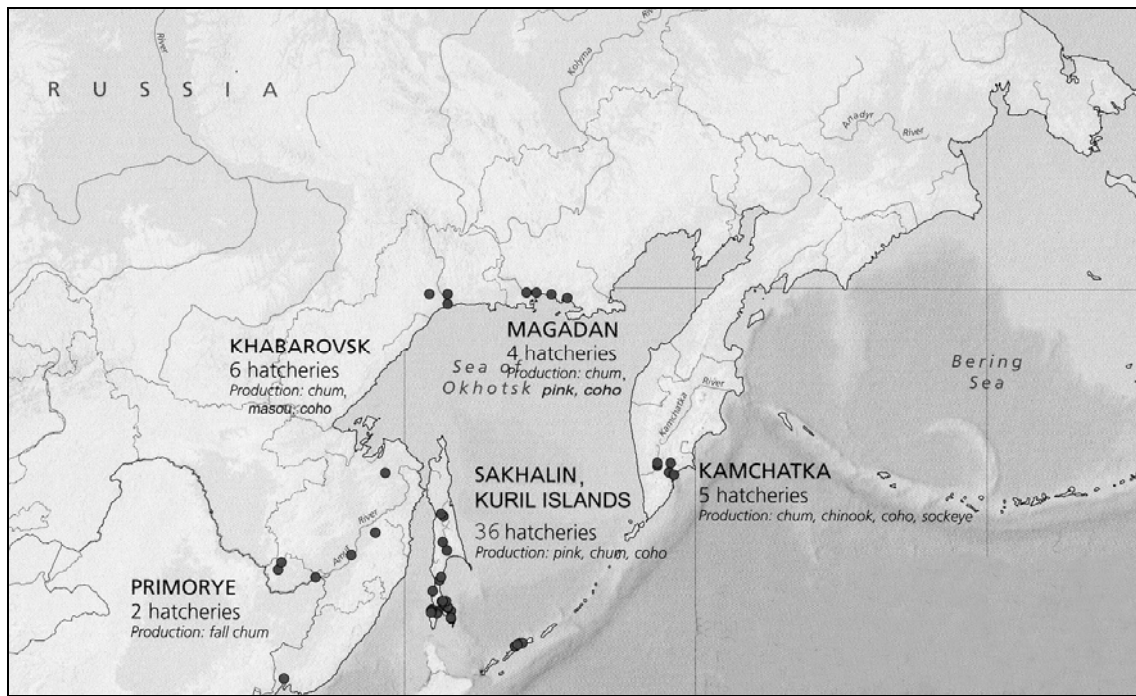


Fig. 1. Locations of hatcheries where brood year 2010 salmon will be marked

It is necessary to note that pre-hatch marking dominates. Seven marks will be used for marking at the stage of post-hatch. Because of the climatic peculiarities of the regions and water supply of the hatcheries it is difficult to determine in advance if 100% salmon will be marked as embryos or part of them will be marked after hatching. That is why the marking plan is to be corrected in a speedy way. In the presented plan we took into account the possibility to use the same mark both before and after the hatching not doubling the marks of other countries. One and the same mark is usually used for all kinds of fish raised at hatcheries to make the process of marking convenient and to control the returning fish.

The marking plan is shown in Table 1. Thermal marking pattern is presented as the RBr notation (Munk and Geiger 1998) and Hatch code notation (Hagen et al., 2000).

References

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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.

Table 1. Plan marks from Russia for 2010 brood year stocks of salmon

№№	Mark Type	BROOD YEAR	SPECIES	COUNTRY	STATE/ PROVINCE	HATCH CODE	RBr	FACILITY
RU10-01	DM	2010	Chum	Russia	Kamchatka	3,2,2H	1:1.3,2.2,3.2	Ozerkovsky Hatchery
RU10-02	DM	2010	Chum	Russia	Kamchatka	3H	1:1.3	Ketkinsky Hatchery
RU10-03	TM	2010	Chum	Russia	Kamchatka	H6	2:1.6	Paratunsky Hatchery
RU10-04	DM	2010	Chum	Russia	Magadan	1,3,1H	1:1.1,2.3,3.1	Armansky Hatchery
RU10-05	DM	2010	Chum	Russia	Magadan	5,1H	1:1.5,2.1	Olsky Hatchery
RU10-06	DM	2010	Chum	Russia	Magadan	6H	1:1.6	Olsky Hatchery
RU10-07	DM	2010	Chum	Russia	Magadan	5H	1:1.5	Olsky Hatchery
RU10-08	DM	2010	Chum	Russia	Magadan	1,2H	1:1.1,2.2	Tauysky Hatchery
RU10-09	DM	2010	Chum	Russia	Magadan	4,2nH	1:1.4,2.2n	Yansky Hatchery
RU10-10	TM	2010	Chum	Russia	Sakhalin	H1,5	2:1.1,2.5	Ado-Tymovsky Hatchery
RU10-11	DM	2010	Chum	Russia	Sakhalin	1,5H	1:1.1,2.5	Ado-Tymovsky Hatchery
RU10-12	DM	2010	Chum	Russia	Sakhalin	1,4n,1H	1:1.1,2.4n,3.1	Pobedinsky Hatchery
RU10-13	TM	2010	Chum	Russia	Sakhalin	H1,4,1	2:1.1,2.4,3.1	Pobedinsky Hatchery
RU10-14	DM	2010	Chum	Russia	Sakhalin	8H	1:1.8	Buyuklovsky Hatchery
RU10-15	TM	2010	Chum	Russia	Sakhalin	H5,2	2:1.5,2.2	Sokolovsky Hatchery
RU10-16	DM	2010	Chum	Russia	Sakhalin	5,2H	1:1.5,2.2	Sokolovsky Hatchery
RU10-17	TM	2010	Chum	Russia	Sakhalin	H1,2,2,1	2:1.1,2.2,3.2,4.1	Bereznaykovsky Hatchery
RU10-18	DM	2010	Chum	Russia	Sakhalin	1,2,2,1H	1:1.1,2.2,3.2,4.1	Bereznaykovsky Hatchery
RU10-19	DM	2010	Chum	Russia	Sakhalin	4,3H	1:1.4,2.3	Anivsky Hatchery
RU10-20	DM	2010	Chum	Russia	Sakhalin	1,4H	1:1.1,2.4	Taranaysky Hatchery
RU10-21	TM	2010	Chum	Russia	Sakhalin	H3n,3	2:1.3n,2.3	Sokolnikovsky Hatchery
RU10-22	DM	2010	Chum	Russia	Sakhalin	3n,3H	1:1.3n,2.3	Sokolnikovsky Hatchery
RU10-23	DM	2010	Chum	Russia	Sakhalin	3,3H	1:1.3,2.3	Yasnomorsky Hatchery
RU10-24	DM	2010	Chum	Russia	Sakhalin	3,3nH	1:1.3,2.3n	Urozhayny Hatchery
RU10-25	DM	2010	Chum	Russia	Sakhalin	3n,3nH	1:1.3n,2.3n	Kalininsky Hatchery
RU10-26	DM	2010	Chum	Russia	Iturup	3,4H	1:1.3,2.4	Kuril'sky Hatchery
RU10-27	TM	2010	Chum	Russia	Iturup	4H4,2	1:1.4+2.4,3.2	Reydovyy Hatchery
RU10-28	TM	2010	Chum	Russia	Iturup	H4,2	2:1.4,2.2	Reydovyy Hatchery
RU10-29	DM	2010	Chum	Russia	Iturup	4H	1:1.4	Hatchery on bay Olya
RU10-30	DM	2010	Chum	Russia	Khabarovsk	7H	1:1.7	Kometa Hatchery
RU10-31	TM	2010	Pink	Russia	Sakhalin	H5,2	2:1.5,2.2	Sokolovsky Hatchery
RU10-32	DM	2010	Pink	Russia	Sakhalin	5,2H	1:1.5,2.2	Sokolovsky Hatchery
RU10-33	DM	2010	Pink	Russia	Sakhalin	4,3H	1:1.4,2.3	Anivsky Hatchery
RU10-34	DM	2010	Pink	Russia	Sakhalin	1,4H	1:1.1,2.4	Taranaysky Hatchery
RU10-35	DM	2010	Pink	Russia	Sakhalin	3,3nH	1:1.3,2.3n	Urozhayny Hatchery
RU10-36	DM	2010	Pink	Russia	Iturup	3,4H	1:1.3,2.4	Kuril'sky Hatchery
RU10-37	TM	2010	Pink	Russia	Iturup	4H4,2	1:1.4+2.4,3.2	Reydovyy Hatchery
RU10-38	TM	2010	Pink	Russia	Iturup	H4,2	2:1.4,2.2	Reydovyy Hatchery
RU10-39	DM	2010	Pink	Russia	Magadan	1,3,1H	1:1.1,2.3,3.1	Armansky Hatchery
RU10-40	DM	2010	Pink	Russia	Magadan	5,1H	1:1.5,2.1	Olsky Hatchery
RU10-41	DM	2010	Pink	Russia	Magadan	4,2nH	1:1.4,2.2n	Yansky Hatchery
RU10-42	DM	2010	Sockeye	Russia	Kamchatka	3,2,2H	1:1.3,2.2,3.2	Ozerkovsky Hatchery
RU10-43	DM	2010	Sockeye	Russia	Kamchatka	3,1H	1:1.3,2.1	Malkinsky Hatchery
RU10-44	TM	2010	Coho	Russia	Kamchatka	H6	2:1.6	Paratunsky Hatchery
RU10-45	DM	2010	Coho	Russia	Kamchatka	3,1H	1:1.3,2.1	Viluysky Hatchery
RU10-46	DM	2010	Coho	Russia	Magadan	1,3,1H	1:1.1,2.3,3.1	Armansky Hatchery
RU10-47	DM	2010	Coho	Russia	Magadan	5,1H	1:1.5,2.1	Olsky Hatchery
RU10-48	DM	2010	Coho	Russia	Magadan	1,2H	1:1.1,2.2	Tauysky Hatchery
RU10-49	DM	2010	Coho	Russia	Magadan	4,2nH	1:1.4,2.2n	Yansky Hatchery
RU10-50	TM	2010	Coho	Russia	Sakhalin	H1,5	2:1.1,2.5	Ado-Tymovsky Hatchery
RU10-51	DM	2010	Coho	Russia	Khabarovsk	7H	1:1.7	Kometa Hatchery
RU10-52	TM	2010	Chinook	Russia	Kamchatka	H3,1	2:1.3,2.1	Malkinsky Hatchery
RU10-53	DM	2010	Masu	Russia	Khabarovsk	7H	1:1.7	Kometa Hatchery