NORTH ATLANTIC SALMON CONSERVATION ORGANIZATION

ORGANISATION POUR LA CONSERVATION DU SAUMON DE L'ATLANTIQUE NORD

Agenda item 5.2

Council

CNL(01)58

Application of the Decision Structure for Implementing the Precautionary Approach to Management of Atlantic Salmon Fisheries in Russia in 2001

(Tabled by the Russian Federation)

11 Rutland Square Edinburgh EH1 2AS Scotland UK
Telephone: (Int+44) 131 228 2551 Fax: (Int+44) 131 228 4384
e-mail: hq@nasco.int website: www.nasco.int

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Introduction

There are three regions in Russia with rivers containing Atlantic salmon: Murmansk Region, Archangel Region and Karelia.

At present, the precautionary approach is applied to management of fisheries only in the Murmansk Region.

In 1991 conservation limits were established for rivers with in-river commercial fisheries and in 1998 for the majority of salmon rivers on the Kola Peninsula (Murmansk Region).

The decision structure has been applied on a number of rivers in this region and two examples for the rivers Varzuga and Kola are given.

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EXAMPLE 1: KOLA RIVER, KOLA PENINSULA

The river flows into the Kola fjord in the Barents Sea. Positions of the mouth 68°53' N, 33°02'E. Length of the river 83 km, catchment area 3846 km^2, mean yearly water flow 41.2 m^3/s.
In 1958-1999 commercial harvests varied from 6.5 t in 1958 to 57.5 t in 1984 (average 23.4 t), in number they varied from 997 salmon in 1958 to 14225 salmon in 1974, 6087 salmon on the average. There was no commercial fishery on the river in 1999.
In 1958-2000 returns varied from 2130 salmon in 1958 to 17420 salmon in 1974 (average 8560 salmon).
Since 1999 catch-and-release fishery is conducted. In 1999 138 salmon were caught and released, catch per unit effort was 0.98 salmon. In 2000 371 salmon and 0.81 salmon, respectively.
Forecast of return for 2001 gives an estimate of 5100 1SW salmon ± 1990 1SW salmon (95% confidence limit, r^2 – 46.6%), and 2830 MSW salmon ± 1060 MSW salmon (95% confidence limit).

Does the fishery exploit salmon from more than one river?

If, no see A

No, single stock fishery. Commercial fishery is at a barrier fence located 25 km up from the river mouth. Licensed fishery (catch-and-release angling and rod fishing) is conducted over the entire river length except a 2 km stretch at the river mouth.

If yes, see B.

Not applicable.

A. Single Stock

1. Is the stock threatened by external factors (e.g. acidification, disease)?

If yes, take special management action (e.g. establish gene bank).

Not applicable.

If no, go to A2.

No

2. Assess status of the stock (abundance and diversity)
(a) Have age-specific conservation limits been set?

Yes, in 1997. Conservation limit = 610 MSW salmon and 950 1SW salmon.

(i) If yes, is the conservation limit being exceeded according to agreed compliance criteria (e.g. 3 out of 4 years)?

In 1997 returns were 1010 MSW and 6030 1SW salmon, in 1998 - 560 MSW and 5640 1SW salmon, in 1999 - 2510 MSW and 5440 1SW salmon, in 2000 - 3240 MSW and 3120 1SW salmon. Returns of MSW salmon were below the conservation limit in 1998, i.e. in one of the last four years.

In the period from 1991 to 2000 returns of 1SW salmon were less than the conservation limit in three of 10 years, MSW salmon in two years.

In 1997-2000 parr density was about 0,2 indiv/м^2. Maximum parr density was recorded in 1993 (0,4 indiv/м^2), minimal – in 1996 (0,06 indiv/м^2).

Returns of hatchery origin adults varied between 8.6% and 26.5% in 1997-2000

(ii) If no, assess other measures of abundance.

Not applicable.

(b) Is the stock meeting other diversity criteria?

Yes.

3. If either abundance or diversity are unsatisfactory, then seek to identify the reasons

a) Immediately implement pre-agreed procedures to introduce appropriate measures to address reasons for failure (including stock rebuilding programmes).

Not applicable.

b) Monitor the effect of the measures and take the results into account in future management and assessment; include identification of information gaps, process and timeframe for resolution.

Not applicable.

4. If both abundance and diversity are satisfactory:

a) Implement pre-agreed management actions to permit harvest of the surplus taking into account uncertainty (where appropriate use management targets to establish the exploitable surplus).

Management target = conservation limit plus 300% = 2440 MSW salmon and 3800 1SW salmon.
Returns of MSW salmon were below management target in 1997 and of 1SW salmon in 2000.
For 2001 exploitable surplus is established at 2830 – 2440 = 380 MSW salmon and 5100 – 3800 = 1300 1SW salmon. A zero quota is allocated to the commercial fishery. Quota for catch-and-release angling is set at 1200 salmon and for rod fishery

where catch can be retained at 500 salmon.

Harvests in 1997 were 360 MSW salmon and 2150 1SW salmon.

Harvests in 1998 were 100 MSW salmon and 1430 1SW salmon.

Number of caught and released in 1999 was 60 MSW salmon and 130 1SW salmon.

Harvests together with caught and released in 2000 were 340 MSW salmon and 330 1SW salmon.

b) Monitor the effect of the measures and take the results into account in future management and assessment; include identification of information gaps, process and timeframe for resolution.

There exists a problem of poaching. Therefore, for a period of 5 years the management target = conservation limit plus 300% is used to establish exploitable surplus.

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EXAMPLE 2: VARZUGA RIVER, KOLA PENINSULA

The river flows into the White Sea. Positions of the mouth 66°16' N, 36°58' E. Length of the river 254 km, catchment area 9836 km^2, mean yearly water flow 76.5 m^3/s.

In 1960-2000 commercial harvests varied from 11.9 t in 1996 to 161.2 t in 1987 (average 65.14 t), and in number from 3668 salmon in 1996 to 56806 salmon in 1960 (average 23200 salmon).

Over the last 10 years returns varied from 58750 salmon to 83050 salmon, 69200 salmon on the average.

Catch-and-release fishing has been conducted since 1992. In 1999 1739 salmon were caught and released, catch per unit effort was 1.7 salmon. In 2000 2173 salmon and 1.5 salmon, respectively.

Forecast of return for 2001gives an estimate of 62770 ± 4880 1SW salmon (95% confidence limit, r^2 – 46.8%) and 5610 ± 430 MSW salmon (95% confidence limit).

Does the fishery exploit salmon from more than one river?

If no, see A.

No, single stock fishery. Commercial fishery is at a barrier fence located 12 km up from the river mouth. Licensed fishery (catch-and-release angling and rod fishing) is conducted over the entire river length except a 20 km stretch at the river mouth.

If yes, see B.

Not applicable.

B. Single Stock

1. Is the stock threatened by external factors (e.g. acidification, disease)?

If yes, take special management action (e.g. establish gene bank).

Not applicable.

If no, go to A2.

No

2. Assess status of the stock (abundance and diversity)
(c) Have age-specific conservation limits been set?

Yes, in 1997. Conservation limit = 2990 MSW salmon and 16980 1SW salmon.

(i) If yes, is the conservation limit being exceeded according to agreed compliance criteria (e.g. 3 out of 4 years)?

In 1997 returns were 2790 MSW and 70640 1SW salmon, in 1998 - 7640 MSW and 45410 1SW salmon, in 1999 - 9940 MSW and 61060 1SW salmon, in 2000 - 6270 MSW and 69270 1SW salmon. Returns of MSW were below the conservation limit in 1997.
In the period from 1991 to 2000 returns of MSW salmon were below the conservation limit in two of 10 years. Returns of 1SW salmon exceeded the conservation limit.
In 1997-2000 parr density was about 0.5 indiv/m^2. Maximum density was recorded in 1993 (0.74 indiv/m^2) and minimal in 1999 (0.37 indiv/m^2).

(ii) If no, assess other measures of abundance.

Not applicable.

(d) Is the stock meeting other diversity criteria?

Yes.

3. If either abundance or diversity are unsatisfactory, then seek to identify the reasons

c) Immediately implement pre-agreed procedures to introduce appropriate measures to address reasons for failure (including stock rebuilding programmes).

Not applicable.

d) Monitor the effect of the measures and take the results into account in future management and assessment; include identification of information gaps, process and timeframe for resolution.

Not applicable.

4. If both abundance and diversity are satisfactory:

c) Implement pre-agreed management actions to permit harvest of the surplus taking into account uncertainty (where appropriate use management targets to establish the exploitable surplus).

Management target = conservation limit plus 30% = 3890 MSW salmon and 22070 1SW salmon.

For 2001 exploitable surplus is established at 5610 – 3890 = 1720 MSW salmon and 72770 –22070 = 40700 1SW salmon. Quota for commercial fishery is set at 15700 salmon. Quota for catch-and-release angling is 3500 salmon and for rod fishery (catch can be retained) 1300 salmon.

Harvests together with caught and released in 1997 were 490 MSW salmon and 12220 1SW salmon .

Harvests together with caught and released in 1998 were 2120 MSW salmon and 20880 1SW salmon.

Harvests together with caught and released in 1999 were 2130 MSW salmon and 13090 1SW salmon.

Harvests together with caught and released in 2000 were 1550 MSW salmon and 17120 1SW salmon.

d) Monitor the effect of the measures and take the results into account in future management and assessment; include identification of information gaps, process and timeframe for resolution.

There are problems associated with coastal fishery where according to tagging experiments about 32% of catch is composed of Varzuga river salmon. Therefore, to establish the exploitable surplus a management target 30% above the conservation limit is used.