

Agenda item 6.2
For decision

Council

CNL(04)15

***Report on Progress with Application of the Decision Structure for
Management of North Atlantic Salmon Fisheries***

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Management of North Atlantic Salmon Fisheries***

Summary

1. To assist NASCO and the relevant authorities in applying the Precautionary Approach to the management of North Atlantic salmon fisheries, a Decision Structure was adopted on a provisional basis in 2000. After further development and evaluation, a revised Decision Structure was adopted by the Council in 2002 in order to provide a basis for more consistent approaches to the management of exploitation of salmon throughout the North Atlantic region. Application of this Decision Structure by the Parties is intended to assist in safeguarding the abundance and diversity of the resource. It is the Council's request that the Decision Structure be widely applied, without delay, by managers in cooperation with stakeholders on salmon rivers.
2. In order to facilitate annual reporting by the Parties on the extent of implementation of the Decision Structure and their experiences with its application, a simple format for reporting was developed and was used on a trial basis for last year's returns. It was recognized that the Decision Structure is being used both to provide a record of decisions taken and to provide guidance to managers on how to reach management decisions. Last year, a revised reporting format was agreed and used for the first time for this year's returns. The information provided by the Parties is attached. At the time of preparation of this report, no return of information was available for some EU Member States (France, Portugal and Spain) with salmon stocks.

Use of the Decision Structure

3. The Decision Structure appears to have been widely used as a guide to management of salmon fisheries in Canada, the EU (Ireland, England and Wales and Northern Ireland), Norway and the Russian Federation. In Iceland, the Decision Structure has been used as a record of management decisions on two rivers. In the EU (Scotland), discussions are ongoing to develop the Decision Structure as a management tool. There are no Atlantic salmon fisheries in the EU (Germany) or the US. In the EU (Sweden), the Decision Structure has not been applied to the management of salmon fisheries but work to develop an index river has continued. The Decision Structure was not applied to the subsistence-only fishery at West Greenland in 2003.

Compilation of Decision Structure forms and examples of its application

4. Information has been provided by Canada, the EU (Ireland, England and Wales and Northern Ireland) on how the Decision Structure forms are being compiled and retained. In Canada, the Decision Structure forms are not being used regularly but management plans are held at DFO regional offices and by the Province of Quebec. In the EU (Ireland), the forms are being compiled by the Marine Institute prior to formal application. In the EU (England and Wales), Salmon Action Plans which cover all aspects of the Decision Structure are held by the Environment Agency. In the EU (Northern Ireland), the Decision Structure form has been completed for the Foyle and will be completed for other catchments in 2004. In Norway, the existing

reporting system under the river categorization system is being developed to incorporate the elements included in the Decision Structure. Examples of the use of the Decision Structure have been provided by the EU (Ireland), Iceland and the Russian Federation.

Comments on the usefulness of the Decision Structure and on how it might be improved

5. Feedback from the EU (Ireland, England and Wales and Northern Ireland), Norway and the Russian Federation indicates that managers have found the Decision Structure to be a useful guide to management of salmon fisheries. In Iceland, it is felt that as the salmon fisheries are managed on the basis of limited entry, there are no options for in-season measures except in emergency situations so the use of the Decision Structure is likely to be descriptive. In the EU (Scotland), work is ongoing to develop the basic structure to reflect salmon fishery management requirements in that country. No suggestions for improvements to the Decision Structure have been made by any Party.

Additional guidance on the use of the Decision Structure

6. In Norway, general guidelines have been developed on the regulation of salmon fisheries and specific guidelines for each river category. Elements from the Decision Structure have been incorporated in these guidelines. No additional guidance on the use of the Decision Structure itself has been developed by any Party.
7. **In short**, it is only two years since the Decision Structure was adopted. The first returns under the new reporting format agreed last year indicate that real progress has been made by a number of Parties and EU Member States in using the Decision Structure as a guide to management decisions. In Iceland, the Decision Structure has been used as a record of management decisions in two rivers. Some examples of its use have been provided. The general feedback is that it is a useful aid to managers. No proposals for improvements to the Decision Structure have been made and no additional guidance on its use has been developed by any Party.

Secretary
Edinburgh
11 May, 2004

1. Provide a summary of the fisheries for which the Decision Structure has been applied, indicating whether it has been used as a guide to, or a record of, management decisions.

Canada

For Atlantic salmon management, Canada uses a river classification system. River classifications establish certain management measures (e.g. retention limits, closures, catch and release only) for each river, based on factors such as: are conservation spawning requirements being met, level of angling effort, proximity to densely populated areas, and overall size of the river and of the salmon population in it.

Conservation limits are set where enough information exists, management targets are established, and in-season monitoring indicates whether conservation limits will be met. When the limits are not met, the management process provides for pre-agreed management actions to be implemented, such as catch and release fishing only, or complete closure of the river.

The NASCO Decision Structure is used as a guide to management decisions.

Denmark (in respect of the Faroe Island and Greenland)

Greenland

The Decision Structure has not been applied. Sections 2-4 of this document are not therefore applicable.

European Union

Ireland

The Decision Structure has been applied to the national fishery and all fishing methods.

United Kingdom

England and Wales

Conservation Limits and Management Targets have been set for all principal salmon rivers in accordance with the Decision Structure. Salmon Action Plans are used to address other issues defined within the Decision Structure, including: the status of the stock; other diversity criteria; selectivity of fisheries; factors threatening the stock; and proposed management actions.

Germany

The Decision Structure has not yet been applied in Northrhine-Westfalia, since there are no fisheries as salmon populations have first to be re-established. Sections 2-4 of this document are, therefore, not applicable.

Northern Ireland

The Decision Structure has been used as a guide to the implementation of a Salmon Management Plan in the Fisheries Conservancy Board (FCB) area of Northern Ireland which mirrors that developed in the Foyle area.

In 2003 habitat, juvenile populations and adult escapement data were compiled for the Rivers Bush, Glendun, Maine and Blackwater in the FCB area and the Foyle system. Conservation limits were updated as more information is assembled.

Scotland

Discussions have continued with Fisheries Research Services (FRS), the Association of Salmon Fishery Boards (ASFB), and District Salmon Fishery Boards (DSFBs) to develop the Decision Structure as a tool for use in management operations.

Sweden

Work to establish an index river on the Swedish West Coast has continued in 2003.

Iceland

The Decision Structure has been used as a record of management decisions in the salmon river Vesturdalsá in eastern Iceland (see CNL(03)36), and in the River Hvítá in Borgarfjörður.

Norway

The Decision Structure has been used as a guide to management decisions in all salmon fisheries. The Decision Structure for sea-fisheries requires identification of the river stocks being exploited by the fishery. To approach this problem the coast has been divided into 19 regions, each constituting a fishery that mainly exploits river stocks within the region's boundaries. The sea-fishery is regulated according to the status of the stocks within the region.

Russian Federation

The Decision Structure has been applied to the management of fisheries on 38 White Sea rivers and 37 Barents Sea rivers on the Kola Peninsula. For each river the Polar Research Institute (PINRO) provides advice on the abundance of the spawning stocks, conservation limits and the catch options. On the basis of this advice the Science and Fisheries Council makes management decisions concerning catch limits in each fishery (commercial, catch-and-retain, catch-and-release) on a river-by-river basis. Murmanrybvod details the fishing regime for each river including time of fishing, fishing gears, sites and catch limit for each site. This information is notified to the users of the resource on a given river. Control and enforcement is the responsibility of Murmanrybvod.

USA

There are no salmon fisheries within US jurisdiction. Sections 2-4 of this document are therefore not applicable.

Other Parties

No information on the use of the Decision Structure has been provided by the Faroe Islands or the other EU Member States.

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| 2. Indicate where and how completed Decision Structure forms are being compiled and retained, and provide an example of its application. |
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Canada

The Decision Structure forms are not being regularly used by those making decisions on Atlantic salmon fisheries. Atlantic salmon fishing is regulated under management plans that are developed for each area, with conservation limits, and pre-agreed rules for actions to be taken if conservation limits are not being met. These management plans are held in each regional office of the Department of Fisheries and Oceans and by the Province of Québec.

European Union

Ireland

Forms are being compiled on behalf of the Department of Communications, Marine and Natural Resources by the Marine Institute for general discussion before formal application. An example is attached in Annex 1.

United Kingdom

England and Wales

Completed Salmon Action Plans, which cover all aspects of the Decision Structure, are available from the Environment Agency, UK.

Northern Ireland

The form has already been completed and retained for the Foyle system and will be completed for the other catchments in 2004. Failure to achieve conservation limits in the Bush in recent years has prompted management action to restrict exploitation for both commercial fisheries and angling throughout the FCB area.

Scotland

The Decision Structure is still being developed for use by managers.

Iceland

The Decision Structure is still in an evaluation stage in the Icelandic management system. An example of its application in a mixed stock situation, the River Hvítá in Borgarfjörður, is contained in Annex 2.

Norway

The Decision Structure form has not been used to keep a record of management decisions. This information is still being stored in existing databases and archives. A reporting system for the Decision Structure will be developed and included in the existing reporting under the river categorization system. Many of the elements in the Decision Structure are being addressed through the Norwegian river categorization system. There is a form to be filled in for each fishery. The forms are stored digitally in a central database called the Salmon Register, which is administered by the Directorate for Nature Management. The forms contain information on: Category, threatening factors (including overfishing) and stock restoration. This reporting system and the Salmon Register is being developed to cover all the questions raised by the Decision Structure.

Russian Federation

An example of the application of the Decision Structure is the Kola river. In 2003 the spawning stock was 7,410 salmon. The conservation limit is 1,560 salmon. 300 salmon were allocated for fishing to monitor the biological structure of the population. 200 salmon were allocated for use by the hatchery for enhancement purposes, 20 salmon were allocated for scientific studies. The allocated catch in the catch-and retain fishery was 1,200 salmon and in the catch-and-release fishery 1,300 salmon. The fishing was conducted in accordance with established fishing regimes. Catch-and-retain fishing was conducted at two sites, time of fishing per licence was 6 hours, permitted catch per licence was 1 salmon. Catch-and-release was conducted at three sites in the main stem of the river and on three tributaries. A licence was issued to an angler for one-day fishing on one of the allocated sites. When fishing, anglers are obliged to follow the fishing regime and comply with the Regulations for the recreational fisheries. Each fisherman is responsible for recording the catch and reporting it to Murmanrybvod.

Other Parties

No information on the compilation and retention of Decision Structure forms or examples of its application have been provided by the other Parties or the other EU Member States.

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| 3. Provide comments on how useful managers have found the Decision Structure and suggestions for how it might be improved. |
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European Union

Ireland

The Decision Structure is useful for focusing on the main issues which need to be considered when managing fisheries. The national example is used to provide a comparative platform for application at a river, district or regional level. The Decision Structure represents guidelines, which may be modified in their application in particular circumstances.

United Kingdom

England and Wales

The Decision Structure has been used as an aide-memoire.

Northern Ireland

Information consistent with the Decision Structure is fundamental to management decisions.

Scotland

A Working Group (FRS/ASFB/DSFBs) has been supportive of the general proposal and are collaborating in the development of the basic structure to reflect more closely the Scottish salmon fishery management requirements.

Iceland

Icelandic salmon fisheries are based on a terminal fishery with severely limited entry. There are thus no options for in-season measures except in an emergency situation. The use of the Decision Structure in Icelandic rivers is thus likely to be of a descriptive nature. It might, for example, be useful to document other Icelandic salmon angling rivers in a similar manner as was done for River Vesturdalsá (see CNL(03)36).

Norway

Both central and regional managers have found the Decision Structure useful as an aid in determining the regulatory regime. However, in many cases the data requirements cannot be met and must be substituted by sound judgement based on whatever information is available. The Decision Structure has inspired authorities, managers and researchers to fill the information gap. Among several initiatives that have been taken are:

- a research project on the stock-recruitment relationship and methods for determining conservation limits;
- research and other activities aimed at increasing knowledge on the productive capacity of salmon rivers.

We see no immediate need to make changes to the Decision Structure.

Russian Federation

The Decision Structure has been effectively applied in setting catch limits for salmon fisheries in rivers on the Kola Peninsula to ensure rational exploitation of the resource.

Other Parties

No comments on the usefulness of the Decision Structure or suggestions for its improvement have been provided by the other Parties or the other EU Member States.

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| 4. Provide a copy of any additional guidance which has been developed on the use of the Decision Structure. |
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Norway

Elements from the Decision Structure are incorporated into the general guidelines for regulation of salmon fisheries, and the specific guidelines for each category in the river categorization system. These guidelines (in Norwegian only) are issued by the Directorate for Nature Management and distributed to all parties taking part in the regulation process.

Other Parties

No information on additional guidance which has developed on the use of the Decision Structure has been provided by the other Parties or the other EU Member States.

Example provided by the EU (Ireland)**A. Brief Description of the Fishery(ies):**

<i>Date of review:</i>	21/4/04
<i>Fishery location:</i>	Ireland
<i>Gear types:</i>	The principal gears used to catch salmon in Irish waters are 1) drift nets, 2) draft nets, 3) snap nets, 4) various traps and trapping nets (loop. Pole, bag) and 5) fishing rods.
<i>Magnitude of fishery (e.g. catch or effort):</i>	<p><i>Estimates include all Irish Salmon Fishing districts and half of the Foyle area catch.</i></p> <p>Drift net catch Mean (previous 10 yrs) = 456 t (approx. 168,000 salmon) Catch in 2002 = 514 t (194,177 salmon) 76% of total catch</p> <p>Inshore net catch Mean (previous 10 yrs) = 127 t (approx. 47,000 salmon) Catch in 2002 = 89 t (33,222 salmon) 13% of total catch</p> <p>Rod catch Mean (previous 10 yrs = 79 t (approx. 29,000 salmon) Catch in 2001 = 70 t (26,074 salmon) 11% of total catch</p> <p>2002 Commercial TAC = 219,619 salmon (catch = 207,339, excluding Foyle). 2003 Commercial TAC = 182,000 salmon (catch = 166,874, excluding Foyle).</p>
<i>Current management restrictions:</i>	<p>New management and conservation legislation was brought into force in 1997 which was aimed at reducing effort in the fishery and to facilitate enforcement. These regulations have been enforced since that time.</p> <ul style="list-style-type: none"> • Cap on public commercial fishing licences for draft nets and drift nets • Area of fishing at sea reduced from 12 to 6 nautical miles • Drift net season constrained to 1st June to 31st July • Draft net fishery deferred to the 12th of May • Restriction on night-time fishing (0400 to 2100 hrs only) • Reduction to 4 days fishing per week • Mono-filament netting legalised for drift net fishing. <p>Subsequent measures in place since 1997:</p> <ul style="list-style-type: none"> • Introduction of mandatory carcass tagging and logbook scheme in 2001 for all sectors of the salmon fishery

	<ul style="list-style-type: none"> • Ban on the sale of rod-caught fish • Angling bag limit of 1 per day up to 1st June with 3 fish per day subsequently up to a season limit 20 fish • TAC of 219,619 salmon imposed for commercial fisheries in 2002 • TAC of 182,000 imposed for commercial salmon fishery in 2003 • TAC of 162,000 imposed for commercial salmon fishery in 2004
<p><i>Outline pre-agreed procedures (or provide references):</i></p>	<p>The principal aim of the stock assessment programme is to evaluate the total return of salmon relative to a biological reference point which indicates the required number of spawning fish for all rivers. The data used for this assessment and for the establishment of a Conservation Limit are the catch (including the unreported catch of each stock) and the exploitation rates by the fisheries, derived from the results of the National Micro-tagging and Tag Recovery Programme each year. These values provide an estimate of the total spawning numbers and by adding the total spawners to the total catch this provides the total stock which returned. The Conservation Limit for Ireland had been estimated from a stock and recruitment curve derived from catch data and exploitation rate data over 30 years (ICES 2003). A significant investment was made in acquiring new information on wetted areas of all Irish rivers and transporting stock and recruitment parameters from European index rivers of known wetted area to rivers without specific S/R data. These new CLs were applied in 2003 for the 2004 fishery.</p>
<p><i>Principal river stock(s) exploited:</i></p>	<p>Approximately 256 rivers where spawning salmonids exist comprising 169 salmon rivers with a further 87 designated as sea trout rivers. 20 main rivers provide over 80% of the returns of salmon.</p>
<p><i>Other fisheries exploiting stock(s):</i></p>	<p>Greenland (1SW salmon destined to return to Ireland as 2SW salmon), Faroes, UK (Northern Ireland).</p> <p>Tagged Irish salmon have also been recovered in Iceland, UK (England and Wales, and Scotland) but exploitation rates are not known.</p>
<p><i>Other information:</i></p>	<p>The responsibility for management of the salmon fishery lies with the Department of Communications, Marine and Natural Resources and is administered through the seven Regional Fisheries Boards (East, South, South West, Shannon, West, North West and North). The Boards enforce fisheries legislation and carry out inspection at sea and on inland waters. This surveillance is further enhanced by dedicated naval surveillance co-ordinated through the Central Fisheries Board. Each region is further sub-divided into districts for</p>

	administrative and management purposes. There are 17 salmon fishing districts in Ireland. The administration of the Lough Foyle area, a significant salmon fishery, is jointly administered by a north-south agency, the Loughs Agency.
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*If fishery primarily exploits salmon from only one river answer all questions in Section B;
If fishery exploits salmon from more than one river answer all questions in section C.*

C. Mixed River Stock Fishery

C1. Specify the reference points (Conservation Limits and/or Management Targets) or alternative measures used to define adequate abundance of the exploited stocks.

National CL = 197,000 1SW salmon, based on wetted areas of individual rivers and transported stock and recruitment parameters from European index rivers.

C2. Describe the status of all stocks relative to the abundance criteria in C1.

- Include trends and forecasts of abundance.

Average spawners since 1997 (ICES 2003) = 209,000. Therefore, the national stock is above the CL although it has been below this in a number of years within the period.
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Separate Conservation Limits have been derived for combined stock complexes in each of the 17 Salmon Fishing Districts. These indicate that relative to the previous 7-year mean the CL has only been met consistently in 5 of the 17 districts.
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C3. Are all the stocks meeting other diversity criteria (e.g. age structure, run-timing, fecundity)?

- Describe criteria assessed;
- Identify possible reasons for any failures.

Age composition - The adult age composition is assessed from catch (based on average size) and in some instances from traps or counters. A failure in the age structure is not thought to be the case as up to 95% of the Irish salmon stock is comprised of grilse. This appears to have been the case for the last two decades at least. Concerns have been expressed at the low abundance of MSW salmon stocks in the last two decades or more where these stocks are known to predominate in the population. However, it is not known if the reduction in MSW fish has been accompanied by an increase in 1SW salmon. Therefore it is difficult to assess if there has been a change or failure in the age structure of the adult population.

Run timing - Assessed from catch data, trap or counter data. The majority of the grilse enter Irish rivers between late May and the end of July. A smaller autumn run has been noted in several rivers. This appears to be a consistent feature of the stock.

The principal run of larger MSW salmon occurs in spring (i.e. Spring salmon). A smaller summer salmon run also occurs. Again, this appears to be a consistent feature of the Irish salmon stock for at least the last two decades.
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Fecundity - There is little information available other than from records of hatcheries, etc. These data may not reflect the situation in the wild population.
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C4. Is the fishery selective for certain stock components (e.g. age groups, size, populations, river stocks)?

- If yes, describe reasons.

The principal exploitation by the commercial fisheries is now on the 1SW component. It is believed that the drift nets exploit the larger grilse although no systematic study has been carried out. The fishery is also selective on the run between mid-May and the end of July when the commercial fisheries operate.

Exploitation on multi-sea-winter salmon stocks is principally by rod and line.

C5. Are any of the stocks threatened by factors other than fisheries (e.g. habitat degradation, disease/parasites, predators)?

- If yes, describe threat and management action that will be taken (e.g. establish gene bank; habitat mitigation).

Local problems are known to occur and are believed to be a significant threat to some populations. The main problems are agricultural organic enrichment, arterial drainage, riparian zone damage (gravel extraction, urban development, etc), overgrazing and dams. There is little information available on the impact of either predators or diseases/parasites on wild salmon populations although the potential threats are well described.

The principal management measures taken include legal actions taken by Fisheries Boards and other environmental agencies against polluters and those causing damage to habitats. Up to 1999, the Central and Regional Fisheries Boards have surveyed over 2,000 km of river channel and carried out habitat restoration on over 400 km of compromised waters.

C6. Describe management actions that will be employed to control harvest, including measures that will be used to address any failure or trend in abundance or diversity, taking account of pre-agreed procedures.

- Decisions should take account of: uncertainty in the assessments; abundance of the stock (q. C2); diversity of the stock (q. C3); selectivity of the fishery (q. C4); any non-fishery factors affecting the stock (q. C5); and socio-economic factors; and other fisheries exploiting the stock;
- Describe the expected extent and timescale of effects.

In 2001 a Carcass Tagging and Logbook Scheme was introduced for all sectors of the salmon fishery aimed at reducing the illegal catch of salmon and providing a more accurate record of the legal catch.

In 2003 the TAC was reduced from 219,619 salmon to 182,000 salmon as a means of restricting the salmon catch.

Reductions in catch were applied to all districts to acknowledge the nature of the mixed stock fishery on stocks from neighbouring districts and regions.

It should be noted that all districts will have a reduced TAC over 2002, even if they were not specifically below their Conservation Limit. This is to acknowledge the mixed stock nature of the fishery where stocks from neighbouring districts and regions which are below Conservation Limits may be taken in catches. However, the highest reductions were imposed in districts which had been shown to be below their Conservation Limit consistently since 1997. Despite the fact that a number of districts should have been allocated a zero quota based on the scientific advice, the cuts have been introduced as sympathetically as possible considering prevailing socio-economic factors and the impact on local communities.

The stock status will be monitored scientifically each year to ascertain if further reductions are required to bring the fishery into line with scientific advice with the principal aim of attaining conservation limits in all Salmon Fishing Districts.

C7. Outline programmes (including in-season programmes) that will be used to monitor the effects of the management measures, and identify information deficiencies and the timeframe for their resolution.

National Carcass Tagging and Logbook Scheme - mandatory carcass tagging and recording of catch details. Information is entered into a National Database operated by the Central Fisheries Board. Provides more accurate catch statistics and information on effort, distribution of catch by method, etc. Carcass tags are also the principal method of controlling the allocation of the TAC within each district and by fishing method as tags are colour-coded by fishing method and number coded by district, tag number and year.

National Micro-tagging and Recovery Programme - Between 200,000 and 300,000 salmon smolts are tagged annually from nine locations around Ireland. Examination of over 100,000 salmon annually in commercial and recreational catches (between 30 and 50% of the national catch) provides recoveries of between 3,000 and 10,000 tags for analyses. This generates specific information on exploitation rates, marine survival and freshwater survival of Irish salmon stocks.

Wetted area analysis - The previous method of estimating district Conservation Limits was updated in 2003. Conservation Limits for each Irish river will continue to be developed to ascertain the actual productive capacity of the individual rivers.

Attainment of Conservation Limits - The attainment of Conservation Limits will be assessed from the returns in the fisheries and the exploitation rates. Supplementary information will be available from 22 electronic fish counters distributed throughout the country. Currently, information is available for 2002 and 2003 for 18 fish counters to compare actual run size with predicted Conservation Limits. These will demonstrate whether key indicator stocks are meeting Conservation Limits and will allow any improvements in spawning stocks to be monitored.

Example provided by Iceland

A. Brief Description of the Fishery(ies):

<i>Date of review:</i>	21.04.2004
<i>Fishery location:</i>	River Hvítá, and tributaries, West Iceland.
<i>Gear types:</i>	Rod and line Gillnets
<i>Magnitude of fishery (e.g. catch or effort):</i>	Rod fishery: 1974-2003 is 6,044 (s.d. 717) fish. Rod fishery: 1994-2003 is 6,008 (s.d. 711) fish. Net fishery: 1974-2003 is 3,181 (s.d. 2847) Net fishery: 1994-2003 is 325 (s.d. 135) Effort: Rod fishery: 56 rods for 90 days, in total 5,040 rod/days. Effort: Net fishery: 68 nets (1974-1991) lease from May 20 to August 20 since 1991. Effort: Nets used: 6 nets during fishing season. 37 nets from August 20 to October 10. Weekly net fishing period is 5 days. Tuesday 10 am to Friday 10 pm.
<i>Current management restrictions:</i>	Rod and line fishery in tributaries only. From 1 June to September 25 with 105 days as the maximum fishing period in each tributary. 12 fishing hours/day. Net fishery: Weekly net fishing period is 5 days. Tuesday 10 am to Friday 10 pm.
<i>Outline pre-agreed procedures (or provide references):</i>	Historic reference point in rod fishery 1fish/rod/day.
<i>Principal river stock(s) exploited:</i>	The net fishery exploits at least 10 different salmon stocks. The number of stocks is based on the principle of one stock per tributary.
<i>Other fisheries exploiting stock(s):</i>	None
<i>Other information:</i>	River Hvita is mixture of direct runoff, spring-fed and glacial water. Tributaries are clear water. Drainage area is 3,880 km ² including glacier that covers 9% of the catchment basin. The mean annual discharge is 190 m ³ /s. Salmon is the dominant fish species in the river system with smaller populations of sea-trout and sea-charr.

***If fishery primarily exploits salmon from only one river answer all questions in Section B;
If fishery exploits salmon from more than one river answer all questions in section C.***

B. Single River Stock Fishery(ies)

B1. Specify the reference points (Conservation Limit and/or Management Target) or alternative measures used to define adequate abundance of the stock.

In recent years the proportion of the salmon run caught in mixed stock fishery is low (see section A) and not significant for the salmon stock in the River Hvita and its tributaries. In this Decision Structure, salmon stocks in River Hvita mainstem and its tributaries are listed combined.

The only reference point used is based on the average of 1fish/rod/day in River Hvita mainstem. Net fishery is limited to the weekly net fishing period of 5 days. Tuesday 10 am to Friday 10 pm.

The net fishery in River Hvita has been leased since 1991 by the landowners of the tributaries. The salmon catch in the mixed stock fishery since 1991 decreased and is 325 fish on average.

The only reference point used is based on the average of 1 fish/rod/day in each of the tributaries to the River Hvita. The tributaries are: Andakilsa (2 rods), Grimsa (10 rods), Flokadalsa (3 rods), Reykjadalsa (2 rods), Thvera (14 rods), Nordura (14 rods) and Gljufura (3 rods). The number of rods in the mainstem is 8.

B2. Describe the status of the stock relative to the abundance criteria in B1.

- Include trends and forecasts of abundance.

Information is not available other than the catch records that are expected to reflect the status of stocks. The catch records include sea-age composition of the salmon catch.

B3. Is the stock meeting other diversity criteria (e.g. age structure, run-timing, fecundity)?

- Describe criteria assessed;
- Identify possible reasons for any failure.

No, the number of 2SW salmon is declining, probably due to increased ocean mortality.

B4. Is the fishery(ies) selective for certain stock components (e.g. age groups, size groups, populations)?

- If yes, describe reasons.

Yes: Based on information from rod catch in other rivers with fish counters, the exploitation rate of 2SW fish is higher than for 1SW fish due to earlier runtime for 2SW salmon.

The size selectivity of gillnets is not available.

B5. Is the stock threatened by factors other than fisheries (e.g. habitat degradation, disease/parasites, predators)?

- If yes, describe threat and management action that will be taken (e.g. establish gene bank; habitat mitigation).

No.

B6. Describe management actions that will be employed to control harvest, including measures that will be used to address any failure or trend in abundance or diversity, taking account of pre-agreed procedures.

- Decisions should take account of: uncertainty in the assessments; abundance of the stock (q. B2); diversity of the stock (q. B3); selectivity of the fishery (q. B4); any non-fishery factors affecting the stock (q. B5); and socio-economic factors; and other fisheries exploiting the stock;
- Describe the expected extent and timescale of effects.

Catch and release is the most likely measure in tributaries. This is recommended for 2SW salmon on a voluntary basis. The percentage released in 2003 was 12.3% in the tributaries to the River Hvita.

Prior to the net lease in the River Hvita, the average number of 5049 ± 1460 were caught annually.

The majority of the nets in the River Hvita have been leased since 1991 by the landowners of the tributaries. The net lease increases the rod catch in tributaries by 28-35% per year. The rods are taking 39-52% of the previous net catch.

The net lease agreement is based on the high value of the rod fishery compared to net-caught salmon. The sum paid for the net lease is €135,000 annually.

B7. Outline programmes (including in-season programmes) that will be used to monitor the effect of the management measures and identify information deficiencies and timeframe for resolution.

With stable effort the catch statistics in tributaries can be used as an indicator of stock size. Most of the tributaries are monitored through yearly electrofishing surveys.