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<b>Document title</b>	Final report of the 2017 reporting on the implementation of Recommendation 32-33/1
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<b>Agenda Item</b>	6 – Salmon and sea trout including HELCOM Recommendation 32-33/1
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## Background

FISH 7-2017 considered the 2017 reporting of implementation of HELCOM Recommendation 32-33/1 based on the national reports of the Contracting Parties (document 6-2 of FISH 7) and agreed that the CPS can provide clarifications by 29 November and that after incorporating comments the Secretariat circulates the report for final endorsement by Fish.

The meeting agreed that in the next reporting round of the Recommendation 32-33/1 (2020) the data needed to assess the implementation of this Recommendation, as included in document 6-2 Annex 3, should be explicitly included in the reporting request from the Secretariat.

No clarifications were received by the Secretariat to the 2017 reporting since FISH 7-2017. The attached document contains the final report for the 2017 reporting of implementation of HELCOM Recommendation 32-33/1.

## Action requested

The Contracting Parties are invited to submit clarifications to the still open issues and the Meeting is invited to endorse the 2017 reporting of Recommendation 32-33/1.

Report on implementation of HELCOM Recommendation 32-33/1 “Conservation of Baltic salmon (*salmo salar*) and sea trout (*salmo trutta*) populations by the restoration of their river habitats and management of river fisheries”

(To be reported to the Commission every 3 years, starting in January 2012)

## 0. Summary & Key message

**Denmark:** Most restoration measure involve improving spawning possibilities for salmonids.

**Estonia:** Salmon smolt production has increased in most of the salmon populations during the past 3 years. About 30% of populations monitored during last three years were consistently below 50% PSPC. Accessibility to spawning areas have been improved by building fish passes and removing dams. Efforts are also made to eradicate illegal fishing during the spawning season.

**Finland:** No Finnish salmon populations that currently reproduce at a level of less than 50% of PSPC. Habitat restoration has been carried out in some sea trout rivers.

**Latvia:** Salmon reproduce in 11 rivers. There are several potential rivers for sea trout reproduction, but population monitoring is only carried out in the river Salaca. Proposals for salmon habitat restoration are included in some Natura 2000 nature protection plans.

**Poland:** There are no salmon rivers in Poland. All Polish sea trout rivers are below 50% PSPC. Management measures focus on improving water quality and improving accessibility for migratory species. No salmon habitat restoration activities have been carried out.

**Sweden:** Seven Swedish Salmon rivers have a PSPC below 50%. Salmon production has improved in six rivers. Measures have been carried out in parts of all rivers during 2010-2014 except in three rivers where river habitat quality is not the main problem. Liming has been carried out in some of the rivers on the Swedish west coast to address acidification which is the main threat to salmon stocks.

Twenty percent of assessed sea trout streams had a status below 50%. Compared to 2005-2010, 47% had increased status, 42% remained unchanged and only 11% had lowered status.

*No information has been received from Germany, Lithuania or Russia.*

## I. Salmon and sea trout populations that reproduce at a level of less than 50% of PSPC (cf. Annex 1)

### a) List all original salmon and sea trout populations that have been subject to measures for the recovery of the populations.

**Denmark:** Denmark has no original salmon population in the Baltic Sea area.

Denmark has approximately 200 sea trout rivers in the Baltic Sea area. It is uncertain to what extent these, strictly speaking, are genetically original because of possible introgression from previous (historic) releases of reared hatchery trout strains. In this context, the sea trout populations included in Annex 2 are defined as populations with no stocking within the last approx. 10 years.

The list includes all sea trout rivers and streams (including tributaries) where the smolt production is estimated to be below 50% of the potential irrespective of possible actions for the recovery of populations. Measures for the improvement of salmonid habitat have been carried out in a large number of streams, both by public authorities (local municipalities - partly under the EU Water

Directive Framework) and by local NGOs carrying out smaller restoration projects. Presently an overview of streams where improvement of habitat conditions has been carried out is not available.

**Estonia:** Kunda, Vasalemma, Keila, Pirita, Pühajõgi, Selja, Vääna, Valgejõgi, Purtse, Loobu.

Salmon smolt production has increased in most of the salmon populations during the past 3 years. Improvement has been most considerable in River Keila and annual smolt production is now predominantly over 75% of PSPC. In some years smolt production has reached 75% from PSPC also in rivers Kunda, Loobu and Pirita. No improvement has occurred in rivers Jägala and Pärnu. Both on these rivers have dams on the lower reach on the river and salmon only has access to poor quality rearing habitat.

Fish passes have been built in rivers Purtse, Loobu and Pirita. The last remaining dam was removed in River Valgejõgi and thus accessible rearing areas for salmon (and sea trout) have increased considerably. New spawning area suitable for salmon was created in River Pirita.

About 30% of populations monitored during last three years were consistently below 50% PSPC.

**Finland:** There are no Finnish salmon populations that currently reproduce at a level of less than 50% of PSPC.

There are together 4 sea trout rivers, where the original populations have been supported by annual releases of reared parr and/or smolts originating from the same river: R. Tornionjoki tributaries, R. Lestijoki, R. Isojoki and R. Ingarskilanjoki. In excess, a hatchery broodstock has been founded from the R. Mustajoki for supporting the original sea trout stock in the river and restocking of the near situating former sea trout rivers. Releases of parr or smolts for restocking another stock in a former sea trout river or for supporting a weak mixed sea trout stock have been regularly done in the rivers Glomså, Gumbölenjoki, Kiiminkijoki, Merikarvianjoki, Aurajoki, Vantaanjoki and Kymijoki. Habitat improvements and removal of migration obstacles have been done in the rivers Siuntionjoki, Mankinjoki, Vantaanjoki. Both parr and smolt releases have been done and habitat restoration and a natural fishway have been carried out in the former/potential sea trout river Koskenkylänjoki.

**Germany:** [No information reported]

**Latvia:** There are six rivers where salmon reproduction occurs regularly, the rivers Salaca, Vitrupe, Gauja, Užava, Saka and Venta. There are also some weak populations in rivers Peterupe, Irbe, Barta Riva, Aģe, where reproduction is irregular.

Special assessment of sea trout populations, except for the Salaca river, has not been carried out. In Latvia the sea trout reproduction could take place in a rather large number of small rivers and tributaries which are not occupied by salmon.

**Lithuania:** [No information reported]

**Poland:** There are no salmon rivers in Poland. All Polish sea trout rivers are below 50% PSPC.

The strongest sea trout populations are in the Rega, Parsęta, Wieprza, Słupia and Łeba rivers.

Several activities have been taken in order to improve reproduction performance of sea trout (including plans concerning water management in the river basins, activities aiming at improvement of a water quality). Activities which aim at improvement of reproduction performance of sea trout, enable also reintroduction of Baltic salmon.

The accessibility was improved on the Vistula, Łeba, Wieprza, Parsęta, Rega and Ina rivers. Restocking activities are carried out in all these rivers.

**Russia:** - [No information reported]

**Sweden:**

*Salmon:*

Status of salmon stocks has been revised by the work of WGBAST (Baltic salmon) and WGNAS (Atlantic salmon) (see Table 4\_2\_3-4 in WGBAST report 2017). At present (2014-2016) three of the original red list salmon rivers remain with a production below 50%; Emån, Nissan (tributary Sennan) and Rønne å. Three new rivers also produced less than 50% during 2014-2016 (Kågeälven, Testeboån and Mörrumsån) and have been added to the observation list.

River Emån is still below 50% and River Mörrumsån (new to the list) is at risk of falling below. It should be noticed that the three southernmost rivers have low status, whereas northern stocks have good status.

Salmon rivers Rickleån, Öreälv, Göta älv tributaries, Löftaån, Tvååkersån and Kungsbackaån have improved, but will remain on the list until the next period. This is mainly due to the recovery of the Baltic salmon complex as a whole due to fishing restrictions.

The improvement in the six salmon rivers listed is the result of a combination of measures. Fishing regulation in the Baltic has resulted in increased return of spawners, benefitting Rickelån and Öreälven. In these rivers also improvements in habitat and water regulation has been achieved. The remaining four rivers that have improved above 50% are situated on the Swedish west coast, in the Kattegatt area, with salmon migrating to the Atlantic Ocean. Also here fishing regulation has been improved over time resulting in decreased exploitation. No habitat improvement was carried out in Löftaån, Tvååkersån and Kungsbackaån during 2014-2016.

As for stocks of Atlantic salmon (Kattegatt area) an improvement has been observed in Göta älv tributaries and Kungsbackaån, which are now both just above the 50% status. Also Tvååkersån and Löftaån have improved above 50%. The Nissan tributary Sennan and Rønneån remains with poor status.

#### Sea trout

There is no coordinated sampling programme at the national level to assess status of sea trout populations. Status is normally assessed using electrofishing data, i.e. recruitment status, as suggested by ICES SGBALANST 2011 (also in press Pedersen et al. 2017). Sea trout streams are defined as having a catchment less than 1000 km<sup>2</sup> and the salmonid abundance not being dominated by salmon as recommended by SGBALANST. The data included are mainly from regional monitoring programmes of varying duration. All data are quality controlled and stored in the national Swedish Electrofishing RegiSter (SERS).

Data was available from 64 (21%) out of 305 streams when the criterion was that updated data should be available from the period 2014-2016. 20% of streams had a status below 50% (Table 1). Comparing the status 2005-2010 (n=305 streams) with the status for rivers sampled 2014-2016 (n=64), 47% had increased status (+1), 42% remained unchanged (0) and only 11% had lowered status (-1) (Table 2 below). This outcome significantly deviates from no change (one-sample t-test,  $p < 0,001$ ). Thus there was a significant improvement of status in monitored sea trout streams. It is suggested that the relatively large sample (n=64) reflects the situation in all 305 streams included in the initial reporting to HELCOM in 2011. There is a probable bias in the results due to that local and regional monitoring may be focused on running waters where restoration measures have been undertaken.

Table 1. Status of sampled Swedish sea trout rivers

Status	Frequency	Proportion (%)
0-20	8	12.5
20-50	5	7.8
50-80	13	20.3
80-100	38	59.4
Sum	64	

Table 2. Comparison of change in sampled sea trout river status between 2005-2010 (n=305 streams) and 2014-2016 (n=64).

Status	Change	Frequency	Proportion (%)
Decreased	-1	7	11
Unchanged	0	27	42
Increased	1	30	47
Sum		64	

Specify for each population what the measures have been and group them according to the main factors as follows:

1. Measures for restoring river habitats towards a salmonid habitat in good state<sup>1</sup> as characterized in the Recommendation

**Denmark:** The most commonly used method to support salmonid populations has been to improve the spawning possibilities by adding gravel, mostly in smaller streams. Re-meandering sections of streams that were formerly aligned for agricultural purposes has also been done in a number of streams. In some streams, culverted (piped) sections have been re-opened.

In general, water quality in streams is able to hold a salmonid population, and sufficiently good to support a trout population. In some places ochre is a problem. In several cases this has been mitigated by establishing small artificial lakes designed to remove the ochre.

**Estonia:** Fish passes have been built in rivers Purtse, Loobu, Pirita and Pidula. Dams have been removed in rivers Valgejõgi and Pada. Accessible rearing areas for salmon (and sea trout) have increased considerably. New spawning areas have been created in rivers Punapea, Tirtsu, Pirita, Angerja (tributary of river Pirita), Kuusalu, Valkla and Keibu brook.

Increased effort is directed to eradicate illegal fishing in all rivers during the spawning season.

The removal of the Sindi dam in river Pärnu is scheduled to take place in 2018-2019; only then can a considerable improvement be expected. Dam removal is also under consideration in river Jägala.

Sea trout abundance has also improved.

Dams still prevent access to historical good quality rearing habitats in rivers Kunda, Jägala, Vasalemma and Pärnu. Restoration habitat connectivity should be prioritized in these areas. Residual pollution may still affect salmon abundance in river Purtse. Spawner counts in river Pirita indicate high fishing mortality in the coastal fishery.

**Finland:** In sea trout rivers with original stock, habitat restoration has been carried out in the rivers Urpalanjoki and Mustajoki, in the mixed stock river Vantaanjoki and in the former/potential sea trout in the rivers Koskenylänjoki.

**Germany:** [No information reported]

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<sup>1</sup>The river has a natural meandering that provides for diversity of habitats; The quantity and velocity of waters are sufficient and the flow is maintained at an adequate level corresponding to the needs of salmon and sea trout eggs as well as young and adult fish; The water is cool and well oxygenated and stays within a limited pH range; There are spawning and nursery areas with the necessary bottom substrates (permeable gravel, cobble and sand); There are both deep pools and large boulders and stones as well as large woody debris suitable as hiding and resting sites for salmonids; The load of nutrients, organic substances, sediments and sand from the river banks is low and littering or contaminants do not affect the waters or bottoms; Vegetation along the river provides for shade and predator protection for fish as well as habitats for insects that may disperse over the waters as suitable food items for salmonids; The growth of vegetation in the rivers is not excessive

**Latvia:** There is not enough information to describe the measures necessary for every salmon river habitat improvement. For this purpose it would be necessary to carry studies on rivers, map and estimate the suitable habitats and determine what measures are necessary for improvement (restoration) of these habitats. These studies are restricted due to insufficient human capacity and financing problems. However, there are plans to start some gradual studies already in 2012.

Commented [MP1]: This seems to be outdated information.

Proposals for salmon habitat restoration are included in Nature protection Plans of Natura2000 territories "Gauja National Park", "North Gauja", "The river Venta valley", "The river Salaca valley".

**Lithuania:** [No information reported]

**Poland:** No measures for restoring river habitats towards salmonid habitats in good state have been carried out during the last years. Polish studies concentrate mainly on water quality and accessibility of rivers for migratory fish species.

**Russia:** [No information reported]

**Sweden:** Measures have been carried out in parts of all rivers during 2010-2014 except in Nissan tributary Sennan, Löftaån and Tvååkersån. In all these three small rivers the major problem for salmon stocks is not river habitat quality. In Sennan it is a fishway with low efficiency downstream in the main river Nissan. In Löftaån fishing with a salmon trap at the mouth in the sea has been a problem, but this fishing ceased in 2013. In River Tvååkersån a high nutrient load from agriculture is the main problem.

No measures to improve the physical habitat have been taken during 2014-2016 in the specified salmon rivers. However, the habitat includes several aspects of prerequisites for salmon survival and growth. Acidification has been, and still is, a major problem threatening salmon stocks on the Swedish west coast. Of the salmon rivers on the HELCOM list of stocks with low stock status, liming of acidified tributaries has been carried out in Göta älv tributaries, Kungsbackaån, Löftaån, Nissans tributary Sennan and Rönneån. Without liming it is estimated that 50-75% of salmon smolt production would have been lost.

## 2. Measures for improving the accessibility of the rivers including the assessments of man-made migration hindrances

**Denmark:** Removal of artificial barriers at dams, fish-farms and road crossings has almost exclusively been done by establishing nature-like bypasses and rapids.

**Estonia:** River Pirita (carries original sea trout population) – two fish passes were constructed in 2014-2015.

River Loobu – nature-like by-pass was built on Loobu dam (second dam from sea) in the middle course of a river in 2013.

River Valgejõgi – in 2016 Kotka dam was broken and not rebuilt. The river is now accessible through its entire length.

River Pirita (carries original sea trout population) - in 2011 one migration hindrance was entirely removed (also certain amount of spawning and nursery areas revealed) and two hindrances were modified to make it more easy to pass.

River Pühajõgi (sea trout river) - smallscale habitat restoration (additional gravel beds created) work was carried out in 2011.

River Loobu (sea trout river) – nature like by-pass was built on Loobu dam (second dam from sea) in the middle course of the river in 2011.

River Pärnu – Türi-Särevere dam was removed (fourth dam from sea) and an artificial rapid was created on Kurgja dam (second dam from sea) in 2011.

River Kunda – artificial rapid was created on “Estonian Cell company” dam (second dam from sea) in lower part of the river in 2011.

River Vasalemma – old Vanaveski dam (first and only dam on the river) partly broke and was surmountable for salmon and sea trout during the spawning run in 2011 in high water conditions.

**Finland:** Natural fishways over the mill and power plant dams have been built in the rivers Siuntionjoki and Mankinjoki (original stock), Vantaanjoki and Summanjoki (mixed stock), Mustijoki and Koskenkylänjoki (former/potential rivers).

**Germany:** [No information reported]

**Latvia:** There are no specific national-wide measures or actions for improving accessibility of rivers for salmon. Demolition of old dam foundations would be important to reopen parts of rivers Salaca and Riva, however, there are great concerns related to the property rights of the constructions. In 2017 are planned building of fish ramp in the river Riva.

**Lithuania:** [No information reported]

**Poland:** Poland introduced several measures in order to improve accessibility of the rivers:

The Vistula river – modernization/improvement of the fish pass in Wloclawek, few new fish passes at upper tributaries.

The Łeba river – new fish pass in Lębork.

The Wieprza river – new fish passes in Pomitowo and Gwiazdowo.

The Parsęta river – modernization of the fish pass in Rościno, new fish passes in Doble and Żarnowo.

The Rega river – fish pass in Rejowice and in Rzesznikowo on Mołstow tributary.

The Ina river – Fish pass in Stargard and few in the upper flow.

**Russia:** [No information reported]

**Sweden:** During 2010-2014, fishways have been installed or improved in Emån and Göta älv's tributary Sävåån. In Rickleån three fishways were built in 2002. In Öreälven there are two older fishways, built in 1983 and 1996. In Emån there are 8 fishways, 3 built in 2010-2014. In Rönne å there are 25 fishways, the last ones built in 2009. In River Nissan's tributary Sennan there are 3 fishways, the last built in 2000. The major problem is a fishway two fishways downstream in the main stem of Nissan. This is being planned for improvement in 2016. In Kungsbackaån there is one fishway, built in 2002. In Göta älv tributaries a new fishway was built at Hedefors in 2014. Several fishways exist in the lower reaches of other tributaries. New fishways are being planned.

During 2014-2016 20 new fishways were installed in rivers with anadromous salmonids according to the National database “Åtgärder i Vatten”. Only one of these was established in a salmon river with low stock status. In Göta älv tributary Sävåån a new fishway was built at Hedefors in 2014.

A dam removal is planned for River Mörrumsån at Marieberg, the lowermost migration obstacle in the river. The existing pool-and-weir fishway will be replaced by a natural river section.

### 3. Measures for the management of river fisheries through a participatory and open process

**Denmark:** Sea trout fishing is regulated by law. Trout is protected by a minimum length, closed season, closed areas (especially near outlets of streams into the sea) and by restrictions in the use of fixed gears. In streams only angling takes place. In most rivers the closed season is voluntarily prolonged,

and in some rivers a voluntary catch restriction is implemented. Closed areas are revised regularly, and, if these are adjusted or new areas are established this is always subject to a hearing process.

**Estonia:** Rivers Kunda, Vasalemma, Keila, Pirita, Purtse, Selja, Valgejõgi and Vääna – closed areas for fishery in the river mouths were enlarged by 500 meters (from 1000m to 1500m radius) in 2011 September and October to enhance the spawning run. This additional measure has been in place throughout these years, also in 2017.

**Finland:** All fishing is forbidden in the River Ingarskilanjoki and in front of it by the decision of the owners of the fishing rights. Gillnet fishing is forbidden or regionally and temporally restricted in front of the rivers Merikarvianjoki, Vantaanjoki, Sipoonjoki, Koskenylänjoki and Kymijoki by the decision of the owners of the fishing rights in each river. Respectively, local bag limit for salmonid fishes has been enforced in the rivers Vantaanjoki and Kymijoki.

**Germany:** [No information reported]

**Latvia** Sea trout and salmon fishing is regulated by law. Commercial fishing of salmon and sea trout is allowed only in the river Daugava with hatchery populations. In the rivers Salaca and Venta recreational fishing (angling) of salmon and sea trout allowed.

**Lithuania:** [No information reported]

**Poland:** Management of fisheries has been implemented on a local basis at the rivers' sections and is revised at least every ten years. Fisheries management has been carried out by a person responsible for fisheries at the given river section as well as on the basis of scientific advice. Decisions concerning the management of fisheries are taken at local stakeholders meetings.

**Russia:** [No information reported]

**Sweden:** National technical regulations for all Swedish wild salmon rivers, including Rickleån, Emån and Öreälven, were reviewed during 2012 with the overall objective to improve the national regulations from 1 January 2013. SwAM decided to reduce the offshore mixed fishery on these salmon populations by dividing the national quota so that only 40 % could be taken by the drift line fishery in the southern part of the Baltic. Since 1 January 2013 all Swedish offshore mixed fishery with drifting lines has been phased out and recreational fishery (trolling fishery) is regulated. These changes of the national regulations are a part of the on-going work by SwAM to make a long-term plan for development of a sustainable coastal fishery.

The coastal fishery mainly consists of further technical development of the fixed gears (push-up traps) close to the river mouths and in terminal fishing areas. The coastal fishery is only allowed outside strong wild salmon rivers and outside the rivers with reared salmon (terminal fishing). The national regulation is designed in order to improve all weak wild salmon rivers and includes larger protected areas and shorter fishing seasons in the rivers mouths and in the rivers.

A nation-wide update of the salmon and trout management plan is carried out by the Swedish Agency for Marine and Water management in 2015-2016, which incorporated local stakeholders and regional county boards.

The Swedish Agency for Marine and Water management also plans to produce a special website in 2018-2020 in connection with the International Year of the salmon in 2019. Again the focus is on public engagement.

**Commented [MP2]:** This information is outdated. I have reworded it - please SE check and correct as needed? Did all the plans get implemented?

## II. Potential salmon populations and rivers

### b) List potential original salmon populations (currently Dalälven, Iijoki, Indalsälven, Ljusnan, Luleälven, Skellefteälven or Ångermanälven) that have been subject to measures for re-establishment into their native rivers and describe the measures

**Denmark:** Not applicable.

**Estonia:** Potential salmon rivers category has not been established in Estonia. Not relevant.

**Finland:** In the river Iijoki salmon spawners have been transported to the upper part of the river (above the dams) in order to generate natural reproduction there. This activity is associated with the project aiming to build fishways to the dams at the hydropower stations and create access for spawners to reach the spawning habitats.

**Germany:** [No information reported]

**Latvia:** Potential salmon rivers category is not established in Latvia. Some of the small and weak salmon rivers could belong to this category but there is need for further studies as mentioned in point I.1.

There have been proposals to destroy old dam foundations in the rivers Salaca and Riva. This would increase the accessible potential area of salmon habitats in these rivers. However, these plans have not been carried out yet due to legal problems with property rights. In 2017 fish pass building planned in the river Riva.

**Lithuania:** [No information reported]

**Poland:** Potential salmon rivers category is not established in Poland. Not relevant.

**Russia:** [No information reported]

**Sweden:** In six Swedish rivers without present wild production the feasibility of opening up migration routes through present dams to establish wild production are considered to be studied. So far economic funding has only made it possible to make some preliminary studies in River Ljusnan and River Ångermanälven (Table 3). Further work in all listed rivers (Dalälven, Indalsälven, Ljusnan Lule river, Skellefte river and Ångerman river will be planned in cooperation between SwAM and relevant local authorities. Studies showed that in both rivers (Ljusnan and Ångerman river) wild production of sea trout and salmon could be achieved at a low cost as compared to the revenues of hydropower production. There are, however, different opinions about the potential in the other listed rivers and further investigations will contribute to improving knowledge of whether it will be economically feasible to reconstruct some of the old water power stations and rehabilitate possible spawning areas for salmon and trout. It is still uncertain how the necessary work will be organized and when it will be carried out.

Work has also been initiated in River Dalälven by regional authorities, but the question has arisen about who should be responsible for implementing new fishways and rehabilitation of possible spawning areas. SwAM financed a study related to Dalälven about possible alternative measures instead of compensatory releases.

As of 2017 no efforts have been made for re-establishment. Plans were developed for River Ångermanälven (Sjölander et al. 2009, 2011, Strömberg et al. 2015), but no actions have been undertaken. According to a strategy (Nationell strategi för hållbar vattenkraft) developed in 2014 by the Swedish Energy Agency (Energimyndigheten) and the Swedish Agency for Marine and Water management (Havs- och vattenmyndigheten) mitigation measures for fish have low priority in some of these rivers (especially Ångermanälven and Luleälven). Instead the regulation of water flow may increase and fishways should only be built in tributaries. The reason for this decision is based on the need for renewable energy.

**Commented [MP3]:** Outdated statement. Does SE want to provide any comment on the outcome of the study.

However, national pilot projects have been started in River Dalälven and River Nissan to suggest how improvement of biodiversity and anadromous stocks can be achieved without negatively impacting the hydropower production.

*Table 3. Swedish rivers in the Baltic Sea, where HELCOM has recommended that the feasibility of opening migrations routes to enable wild production should be studied in more detail.*

Wild production lost, original populations in hatcheries					
ICES subdivision	River	Flow (m <sup>3</sup> /s)	Catchment (km <sup>2</sup> )	Length (km)	Actions undertaken
31	Luleälven	506.5	25,263	461	Work initiated
31	Skellefteälven	162.5	11,726	440	-
30	Ångermanälven	500	31,864	463	Report 2011, 2015
30	Indalsälven	455.3	26,726.5	430	-
30	Ljusnan	230	19,828.1	443	Report 2010
30	Dalälven	347.5	28,953.9	542	Work initiated

**c) List potential salmon rivers (currently Kemijoki, Kymijoki or Oulujoki) that have been subject to measures for opening the migratory routes to their historical reproduction areas and describe the individual measures**

**Denmark:** Not applicable.

**Estonia:** Potential salmon rivers category is not established in Estonia. Not relevant.

**Finland:** Kymijoki: the river runs into sea through three branches, of which two have now fishways: (1) an old fishway in Langinkoski branch with highly varying functionality depending on the discharge of the watershed, and (2) a new fishway was opened in Korkeakoski branch in 2017.

Oulujoki: a well-functioning fishway in the lowest dam (built in 2003), gives access to a small spawning habitat.

Kemijoki: a fishway with highly varying functionality in the lowest dam was built in 1993, and a new one is under construction. Fish ladders need to be built in another 4 dams in up streams in order to open access to the large spawning habitats in the river Ounasjoki.

**Germany:** [No information reported]

**Latvia:** As mentioned above potential salmon rivers category is not established in Latvia.

**Lithuania:** [No information reported]

**Poland:** Potential salmon rivers category is not established. Not relevant in Poland.

**Russia:** [No information reported]

**Sweden:** see above

### III. Assessments of man-made migration hindrances for salmonids

- d) Have significant migration hindrances in salmonid rivers been the subject of an assessment<sup>2</sup> as provided for in the Recommendation? If yes, describe the main outcome of each individual assessment.

**Denmark:** Assessments on the feasibility and costs of removing barriers have been calculated for barrier removals as well as other restoration projects as part of the planning process. The biological effects from various types of barriers have been, or are in the process of being, evaluated.

There are a couple of examples regarding weir removal and the effect of artificial lakes. In one stream, a series of barriers were recently removed (Villestrup Å). The effect from this on the trout population is currently being investigated. Preliminary results show a very strong increase in trout densities, as well as in the number of adult sea trout entering the river. In some streams, artificial lakes have been created, usually in the lowermost parts close to the outlet. The purpose of these is to reduce nitrogen load to the coastal areas. The effect from the lakes on the survival of downstream migrating smolt during passage through these lakes has been investigated. In all cases very high mortalities have been observed, resulting in a heavily reduced sea trout population. In one case, it has been demonstrated that a trout population may rely on resident brown trout. To mitigate this negative effect on the populations, at least the larger part of the stream would have to circumvent the lake, which would reduce the nitrogen reducing effect.

**Estonia:** There have not been any new assessments.

**Finland:** The national fishway strategy for migratory fish was approved by the Finnish government in 2012. The strategy plan lists 10 rivers as the most important targets for building fishways in order to enhance the status of salmon or sea trout stocks. The rivers are: Virojoki, Kymijoki, Siuntionjoki, Mustionjoki, Kiskonjoki, Eteläjoki-Noormarkunjoki, Lapväärtinjoki- Isojoki, Lestijoki, Iijoki, Kemijoki-Ounasjoki.

As part of this and regional R&D projects, preliminary assessments have been carried out about the possibilities to open migration ways in the rivers Kemijoki, Iijoki and Oulujoki. An application of a research project concentrating on biological, sociological and economic evaluation of re-establishing salmon reproduction in the rivers Iijoki and Kymijoki has been submitted (proposed project period: 2013-2016).

**Germany:** [No information reported]

**Latvia:** There are 700 man-made obstacles in rivers in Latvia. The spatial position of obstacles in the river network and the obstacles' impacts on migrations have not been analyzed concerning salmonid rivers. At present there are no specific national-wide measures or actions on improvement of rivers accessibility in Latvia, partly due to property rights problems.

The planning of a fish ladder in the river Gauja tributary river Ligatne (typical cold water sea trout river) will be carried out within the framework of a local action project.

**Lithuania:** [No information reported]

<sup>2</sup>The assessments should be made for the historical distribution areas of salmon and sea trout in the river systems and cover the feasibility of removing the hindrances, providing fishways and/or transporting fish over them or of enhancing the functioning of current fishways. Passage through the rivers for salmon and sea trout should be provided where the results of the assessment justifies it. The assessment may include elements such as cost-efficiency of the options, estimated natural smolt production, options for improving accessibility (e.g. fishways or transport of spawners/smolt), effects on existing fish populations, mortality during up- and downstream migration and migration behaviour. The assessment should where necessary include a mapping of the quantity and quality of suitable spawning and nursery areas.

Commented [MP4]: This is outdated information. Finland – please update.

**Poland:** There are assessments of manmade migration hindrances on all important rivers. The results of such assessments are in different reports and projects (including HELCOM SALAR, WGBAST data base, SGBALANST or WKTRUTTA). The assessment of manmade hindrances is also included in 10-year fisheries plans prepared for particular fishing districts of public waters.

**Russia:** [No information reported]

**Sweden:** Such work has not been initiated at the national level.

**e) Have any new, permanent or temporary, migration hindrances been built that may negatively affect the accessibility of the rivers for salmonids? If yes, specify river name and type of construction.**

**Denmark:** [No information reported]

**Estonia:** No new migration hindrances have been built since 2011.

**Finland:** No new migration hindrances have been built in the salmonid rivers in recent years.

**Germany:** [No information reported]

**Latvia:** In year 2011, two migration hindrances based on previous administrative decisions and permissions were built in brown trout rivers: the river Vaidava (Gauja River Basin District) and river Kaulina (Venta RBD).

There is legislation with a list of rivers in Latvia where the building of dams is not allowed and makes such construction impossible. These rivers mainly belong to the salmonids river category.

**Lithuania:** [No information reported]

**Poland:** Not during the last years.

**Russia:** [No information reported]

**Sweden:** No, but some dams have been restored/improved for safety reasons, due expectation of higher flows in the future. Unfortunately, these dam restoration projects have generally not been carried out with consideration of biodiversity as measures are considered to be a part of normal maintenance and therefore do not require legal permits or negotiations.

#### **IV. Other actions for the implementation of the Recommendation**

**f) List other significant actions that have been taken for the implementation of the Recommendation. Describe the individual actions and group them according to the main factors as follows:**

1. Measures for restoring river waters or habitats towards a salmonid habitat in good state as characterized in the Recommendation

**Denmark:** -

**Estonia:** A national fish habitat restoration program was made to guide the restoration works.

**Finland:** Small scale restoration works have been performed annually in small potential sea trout brooks by associations of trout enthusiasts. A national restoration program has been made for guiding the restoration works in the salmonid brooks and rivers.

**Germany:** [No information reported]

**Latvia:** As mentioned above there are no specific nation-wide measures or actions on salmon habitat restoration in the rivers of Latvia.

However, in the frames of local action projects, restoration of salmon habitats has been performed in several rivers. About 2- 3 ha salmon habitat restoration was carried out in river Venta, town Kuldiga territory in 2011. Habitat restoration was realized as part of Latvia- Lithuania cooperation Project "Alive Venta". Stretches of small rivers Vitrupe and Īģe were cleared out from wood debris in 2011 in the frame of local action projects.

Wood debris removal and beavers dams demolition are the most often used restoration measures.

**Lithuania:** [No information reported]

**Poland:** No restorations during the last years.

**Russia:** [No information reported]

**Sweden:** Apart from the information which has been provided by the SALAR project, Sweden has not yet been able to plan and implement any new significant actions for rivers with salmonid stocks. However, SwAM, initiated work related to protection of some of the weak sea trout populations listed by HELCOM.

Sweden reported several hundred (n=305) of trout streams and rivers to the Salar project. As some of these streams are very small, there is difficulty to monitor trout population status through electrofishing. Of these streams the most recent data from 2009 - 2011 were presented for 128 streams.

Of the original 305 streams 14.1 % had a MSY of 0 – 20% and 19.3% of 20 – 50%. In total 33.4% on the red list of HELCOM. When the status of 2009 - 2001 was checked 10.2% had an estimated smolt production of less than 20% of the MSY and 8.6% had an estimated production of 20 – 50%, in total 18.8% on the red list. One weakness of the present monitoring is the focus on strong and important populations, giving a skewed picture of the actual status on a nation-wide scale.

If a comparison is done using only the streams where data was present both for the original estimate and for the update of 2009 - 2011, 76.6% of population status was unchanged (comparing classes 0-20%, 20-50%, 50-80%, 80-100%). The status had improved in 14.1% and declined in 9.4%. No statistical difference was present (Chi-square test). As several of the trout streams are small, natural variations of population status should be expected. SwAM will therefore consider to propose that the valuation of status should be performed on at least a five year period in order to be more useful for future management of the rivers.

The list of all trout streams with estimated population status in the HELCOM SALAR project and with the recent estimate is enclosed as Annex 2.

As of 2017, the work is reported to be continuing, but at a lower rate than expected because of low funding and complicated legal processes connected to hydropower production in larger rivers. Also, the work with water restoration is now a part of the work required by the Water Framework directive. At present, Swedish authorities are evaluating the status of freshwaters and will develop restoration plans for freshwaters with low ecological status. Meanwhile, counteracting the effects of acidification is prioritized as it is essential to biodiversity and anadromous fish stocks, especially in SW Sweden.

## 2. Measures for improving the accessibility of the rivers including the assessments of man-made migration hindrances

**Denmark:** [No information reported]

**Estonia:** The Ministry of the Environment, Environmental Board and Environmental Inspectorate have been actively dealing with fish migration issues and have been encouraging dam owners to build fish passes by providing up to 100% support. Therefore, probably many more fish passes will be built in the near future.

**Commented [MP5]:** This is old information – more recent information is provided under section I. Proposal to delete this or update this. Perhaps better to avoid repetition, so instead give reference to the answer under section I

**Finland:** In some rivers, fishing is forbidden in a defined area at the river mouth for protecting the ascent of spawners into the river.

**Germany:** [No information reported]

**Latvia:** Using the maps data position of man-made obstacles database prepared.

**Lithuania:** [No information reported]

**Poland:** On a request of National Water Management Authority, an *Assessment of needs and priorities for improving morphological continuity of rivers at the river basins in a context of requirements for achieving good state and ecological potential of water bodies*, was prepared. The *Assessment* concentrates on measures for improving morphological continuity of Polish rivers as a tool for potential improvement of population status of migratory fish species, including salmonids. Results and conclusions from the *Assessment* were taken into account during the process of preparation of conditions for utilization of water in the water regions, as well as during the process of updating water management plans in the river basins. The accessibility of some rivers have been improved already. Such assessments on local levels are carried out on the basis of Voivodeships' programmes.

**Russia:** [No information reported]

**Sweden:** This work is continuing, with new fishways/-passages established every year. As mentioned above, 20 new fishways were established during 2014-2016 in rivers with anadromous fish, i.e. 6-7 per year. Building new fishways or dam removals are also carried out in inland freshwaters for other species as stream-resident trout, lake-migrating trout, the freshwater pearl mussel, pike, asp and wels catfish.

### 3. Measures for the management of river fisheries through a participatory and open process

**Denmark:** [No information reported]

**Estonia:** Fishing closure is implemented for specially licensed salmon and sea trout rod fishery in rivers Vääna, Pirita, Valgejõgi, Selja and Purtse during the spawning period (high peak) of 15. Oct-15. Nov. to enhance spawning success in rivers where natural reproduction takes place. NB! In rivers Kunda, Keila and Vasalemma fishing is prohibited throughout the year.

**Finland:** In excess of ordinary fisheries management, no special participatory or open processes have been introduced or are under way in the salmonid rivers.

**Germany:** [No information reported]

**Latvia:** Salmon and sea trout fishery in the rivers where reproduction of these species occurs is not allowed in Latvia. Only the angling of post spawn salmon and sea trout is allowed in the rivers Salaca and Venta. Angling effort in these rivers are regulated by limited number of licenses.

**Lithuania:** [No information reported]

**Poland:** Fishing closure at the Vistula river mouth.

**Russia:** [No information reported]

**Sweden:** A nation-wide update of the salmon and trout management plan was carried out by the Swedish Agency for Marine and Water management in 2015-2016, which incorporated local stakeholders and regional county boards.

The Swedish Agency for Marine and Water management also plan to produce a special website in 2018-2020 in connection with the International Year of the salmon in 2019. Again the focus is on public engagement.

It can be noted that river-specific biological reference points (conservation limit; CL) is now set for all rivers with Atlantic salmon, i.e. on the Swedish west coast. This includes the following rivers on the

HELCOM list; Rönneå, Nissans tributary Sennan, Tvååkersån, Löftaån, Kungsbackaån and Göta älv tributaries. With these CLs it will be easier for local managers and stakeholders to assess the effect of their fishing on stocks. Already there are voluntary actions taken, prohibiting all salmon fishing in some rivers (Rivers Rolfsån and Himleån).

Such river-specific management targets will also be produced for Baltic salmon rivers as a part of the new management strategy implemented by the Swedish Agency for Marine and Water management (see I.3 above).

As for river-specific targets for sea trout streams, a work has been initiated by ICES in 2017 with a special working group (WGTRUTTA) that will give recommendations in 2019. Thus, the work with setting local management targets as an aid to local management and involvement is progressing.

Annexes 1 and 2 are available as a [separate Excel file](#) on the FISH 8 meeting site.

### Annex 3. Agreed follow-up of HELCOM Recommendation 32-33/1 and 19/2

Indicators at national (when relevant) and regional level. NB that the rules for assessing level of accomplishment (green, orange, red) only refer to the regional level.

The results of the questionnaire will be used for assessing the following indicators related to implementation of agreed fish related HELCOM commitments.

#### HELCOM Recommendation 32-33/1 Conservation of Baltic salmon (*salmo salar*) and sea trout (*salmo trutta*) populations by the restoration of their river habitats and management of river fisheries

Action	Deadline	Level of implementation	Indicator of national implementation	Indicator of regional implementation	ASSESSMENT CRITERIA		
					Accomplished (Regional)	Partly accomplished (Regional)	Not accomplished (Regional)
Urgent measures for the recovery of the original salmon and sea trout populations that reproduce at a level of less than 50 % of the potential smolt production capacity (PSPC) (Annex 1 of the Rec 32-33/1).	2021	National	The percent of rivers at the CP's territory where salmon and sea trout populations reproduce at a level of less than 50% of PSPC.	The percent of rivers in the HELCOM region where salmon and sea trout populations reproduce at a level of less than 50% of PSPC.	The number of rivers where salmon and sea trout populations reproduce at a level of less than 50% of PSPC is less than 10% from the original list.	The number of rivers where salmon and sea trout populations reproduce at a level of less than 50% of PSPC has decreased more than 20% from the original list.	The number of rivers where salmon and sea trout populations reproduce at a level of less than 50% of PSPC has decreased less than 20% from the original list.
Restoration of river waters and habitats that hold naturally reproducing salmon and sea trout populations towards a salmonid habitat in good state.	2021	National	The percent of rivers at the CP's territory listed in the Rec 32-33/1 which are in a good state	The percent of rivers in the HELCOM region listed in the Rec 32-33/1 which are in a good state	More than 90% of the rivers listed in the Rec 32-33/1 which are in a good state	More than 20% of the rivers listed in the Rec 32-33/1 which are in a good state	Less than 20% of the rivers listed in the Rec 32-33/1 which are in a good state

Assessments of man-made migration hindrances for salmonids	2021	National	The percent of the man-made migration hindrances for salmonids revealed at the CP's territory for which removing feasibility was assessed.	The percent of the man-made migration hindrances for salmonids revealed in the HELCOM region for which removing feasibility was assessed.	The assessment of feasibility of removing of the revealed man-made migration hindrances for salmonids is carried out for more than 90% of cases.	The assessment of feasibility of removing of the revealed man-made migration hindrances for salmonids is carried out for more than 20% of cases.	The assessment of feasibility of removing of the revealed man-made migration hindrances for salmonids is carried out for less than 20% of cases.
Re-establishing the original salmon populations of Dalälven, Iijoki, Indalsälven, Ljusnan, Luleälven, Skellefteälven and Ångermanälven and opening migratory routes for salmon and sea trout to historical reproduction areas of the rivers Kemijoki, Kymijoki and Oulujoki.	2021	National	The percent of the rivers located at the CP's territory in which original salmon populations are re-established and migratory routes are opened.	The percent of the rivers listed in the Rec 32-33/1 in which original salmon populations are re-established and migratory routes are opened.	The original salmon populations are re-established and migratory routes opened in all the rivers listed in the Rec 32-33/1	The original salmon populations are re-established and migratory routes opened in more than 50% of the rivers listed in the Rec 32-33/1	The original salmon populations are re-established and migratory routes opened in less than 50% of the rivers listed in the Rec 32-33/1
Developing fishing rules for the management of river fisheries through a participatory and open process that includes local stakeholders	2021	National	National fishing rules for the management of river fisheries in accordance with the Rec 32-33/1 are adopted.	The percent of the CPs that have developed fishing rules for the management of river fisheries in accordance with the Rec 32-33/1	All the CPs have developed fishing rules for the management of river fisheries in accordance with the Rec 32-33/1	More than 50% of the CPs have developed fishing rules for the management of river fisheries in accordance with the Rec 32-33/1	Less than 50% of the CPs have developed fishing rules for the management of river fisheries in accordance with the Rec 32-33/1

In order to justify the indicators of national implementation of the Recommendation 32-33/1 the text report describing the implemented actions should be submitted by the Contracting Parties in accordance with the Annex 2 of the Recommendation.