IP(19)09rev

NASCO Implementation Plan for the period 2019-2024

EU – Denmark
(revised version received 25 October 2019)

IP(19)09rev

NASCO Implementation Plan for the period 2019 – 2024

The main purpose of this Implementation Plan is to demonstrate what actions are being taken by the Parties / jurisdictions to implement NASCO's Resolutions, Agreements and Guidelines.

In completing this Implementation Plan please refer to the ***Guidelines for the Preparation and Evaluation of NASCO Implementation Plans and for Reporting on Progress****, CNL(18)49.*

Questions in the Implementation Plan are drawn from the following documents:

- *NASCO Guidelines for Management of Salmon Fisheries, CNL(09)43 (referred to as the 'Fisheries Guidelines');*
- *Report of the Working Group on Stock Classification, CNL(16)11;*
- *Minimum Standard for Catch Statistics, CNL(93)51 (referred to as the 'Minimum Standard');*
- *Revised matrix for the application of the six tenets for effective management of an Atlantic salmon fishery, WGCST(16)16[1];*
- *NASCO Plan of Action for the Application of the Precautionary Approach to the Protection and Restoration of Atlantic Salmon Habitat, CNL(01)51;*
- *NASCO Guidelines for Protection, Restoration and Enhancement of Atlantic Salmon Habitat, CNL(10)51 (referred to as the 'Habitat Guidelines');*
- *Williamsburg Resolution, CNL(06)48;*
- *Guidance on Best Management Practices to address impacts of sea lice and escaped farmed salmon on wild salmon stocks (SLG(09)5) (referred to as the 'BMP Guidance');*
- *Guidelines for Incorporating Social and Economic Factors in Decisions under the Precautionary Approach (CNL(04)57); and*
- *Road Map' to enhance information exchange and co-operation on monitoring, research and measures to prevent the spread of G. salaris and eradicate it if introduced', NEA(18)08.*

Party:	
Jurisdiction / Region:	**EU Denmark**

1. Introduction

1.1 What are the objectives for the management of wild salmon? *(Max 200 words)*

Originally, Denmark had nine rivers with wild Atlantic salmon populations; one river (Gudenå) going to the Kattegat and the remaining rivers going to the North Sea. The rivers are all lowland

[1] This document can be obtained from the NASCO Secretariat; email hq@nasco.int

rivers running through moraine landscapes. Genetic analyses comparing archival material (scales) with wild fish showed that in the beginning of the 2000's there were wild salmon left in four rivers: Storå, Skjern Å, Varde Å and Ribe Å, and that wild salmon had disappeared in the other rivers (Gudenå, Konge Å, Sneum Å, Brede Å and Vidå). The genetic analysis comparing archival scales with recent scales showed that little genetic drift had taken place. A National Salmon MP (2004) was developed for the four rivers with wild salmon. The stocks in these rivers were very small and in river Skjern Å, with the supposed biggest population, the spawning run was estimated to be less than 100 spawners annually. Without information of the stocks size before man-made deteriorations of the habitats, it is not possible to set up reference points. The overall target is to secure self-sustaining, harvestable populations in the 4 rivers covered by the management plan.
For the other four rivers, initiatives may be taken to reestablish wild salmon. The present MP was adopted in 2004 and a revision has been under preparation since 2012 in the Danish Ministry of Environment and Food, but is still not published.

1.2 What reference points (e.g. conservation limits, management targets or other measures of abundance) are used to assess the status of stocks? *(Max 200 words)*
(Reference: Sections 2.4 and 2.5 of the Fisheries Guidelines)

Based on mark/recapture, electrofishing in autumn combined with PIT tagging, the total spawning run is regularly estimated the four rivers with wild salmon. Since 2013, wild and hatchery fish can be distinguished (fin clip) and the number of wild salmon from natural spawning and spawners from stocked fish is estimated. The objective within the current management plan is an annual run of at least 1000 spawners of wild origin (natural spawning) in each of the four rivers with wild salmon. Each of the four rivers is assessed in a four year cycle. Before the implementation of the national rehabilitation plan in 2004 the run of wild salmon into these four rivers with wild salmon was very low, and the fish were at that time probably mostly from stocked F1 salmon. No data on the original spawning size were available before man made deterioration and therefore, the present reference points of the annual spawning runs of at least 1.000 wild salmon in each four river were based on genetic population conservation objectives.

1.3 What is the current status of stocks under the new classification system outlined in CNL(16)11?

Stock Classification Score	Salmon Classification Category	No. rivers
0	Not at Risk	
1	Low Risk	1(Storå)
2	Moderate Risk	5(Skjern,Sneum, Varde, Ribe, Kongeå)
3	High Risk	2 (Vidå, BredeÅ)
N/A	Artificially Sustained	1(Gudenå)
N/A	Lost	
N/A	Unknown	

Additional comments:

1.4 How is stock diversity (e.g. genetics, age composition, run-timing, etc.) taken into account in the management of salmon stocks? *(Max 200 words)*

Broodstock is obtained (electro fishing) each year from three of the four rivers with original populations running into the North Sea and in the River Gudenå (see below). The stocks are kept separately at the hatchery. At least 100 salmon (50 pairs) are used as broodstock for each river each year. Before 2005, each fish was screened by genetic analysis, and only original fish were

used as broodstock. These analyses were stopped in 2005 because the results showed very few non-native salmon.
In the four rivers without original stocks left, salmon are stocked with F1 offspring from nearby rivers, mostly Skjern Å. In the river Gudenå going to the Kattegat (no wild salmon) F1 smolt are stocked with offspring of wild Salmon from River Storå.
Since 2011, annual quotas are allocated for sport fishing in all eight rivers going to the North Sea. Quotas are based on estimates of the total spawning run in the four rivers with wild salmon and best available additional knowledge in the other four rivers. For all rivers, the quotas are divided into 50 % grilse 50 % MSW salmon. Annual bag limit of one salmon per person/river is also implemented. The fishing season is limited to the period from16th April to 15th October to protect winter and spring fish.
In Gudenå there are no catch limitations because all salmon derives from stocked smolts.

1.5 To provide a baseline for future comparison, what is the current and potential quantity of salmon habitat? *(Max 200 words)*
(Reference: Section 3.1 of the Habitat Guidelines)

The major problems in Danish salmon rivers were the numerous migratory obstacles, transport of sediments and channelization.
In the during the last 25 years many barriers has been removed and more will be removed in the coming years, in accordance with EU's WFD. This has and will open up new spawning and rearing areas.

During 2013-2016 useable habitats for spawning and rearing for salmon were monitored in the four rivers with original salmon populations.

- The total useable potential salmon habitats in river Skjern Å was estimated to 372.8 Ha).
- The potential area for salmon 0+ parr production was estimated to be 134.7 Ha in Ribe Å
- In Storå 195.1 Ha (of these 93.6 Ha upstream a partially passable weir and 101.4 below).

- In Ribe Å the population of naturally produced 0+ parr was estimated to be 120,000 (111,700 – 130,700), corresponding to a recruitment of approx. 1/3 of the maximal population within this area. Compared to the maximal population in the entire system 971,900 (909,500-1,034,300) the recruitment was app. 12%.

- In Storå, the population of naturally produced 0+ parr was estimated to be 225,700 (104,400-389,700). With a potential population of 0+ parr of approx. 721,500 (599,400-855,400), this corresponds to a recruitment status of 64% below and 4.7% above the barrier mentioned above.

Status for the R Skjernå juvenile salmon population is not yet available.

1.6 What is the current extent of freshwater and marine salmonid aquaculture?

Number of marine farms	19
Marine production (tonnes)	12,000 (rainbow trout)
Number of freshwater facilities	166
Freshwater production (tonnes)	33,000 (rainbow trout)

Append one or more maps showing the location of aquaculture facilities and aquaculture free zones in rivers and the sea.

Not possible.
All freshwater facilities (salmon, brown trout and rainbow trout) are situated in Jutland except one brown trout facility at Funen. The marine farms (rainbow trout) are situated in the Great Belt, around the islands of Lolland and Falster (West Baltic) and in Jutland at Horsens Fjord

1.7 Please describe the process used to consult NGOs and other stakeholders and industries in the development of this Implementation Plan. *(Max 200 words)*

In Denmark this IP is being drafted by salmon researchers in cooperation with the Environmental Agency. Thus, there is no public consultation involved. Each of the actions are however, planned and executed in close collaboration between stakeholders and managers.

2. Management of Salmon Fisheries:

In this section please review the management approach to each of the fisheries in your jurisdiction (i.e. commercial, recreational and other fisheries) in line with the relevant NASCO Resolutions, Agreements and Guidelines. For Parties / jurisdictions that prosecute mixed-stock fisheries, there should at least one action related to their management.

2.1 What are the objectives for the management of the fisheries for wild salmon? *(Max. 200 words)*

The objective for the fisheries management of wild salmon is to ensure that salmon does not disappear in the four rivers with original wild salmon stocks, and that the stocks are brought back to the original level, and at the same time allow for harvest through controlled sport fishing of 10-20 % of the population.
The revised national salmon MP, will formulate formal management goals if deemed helpful. We will try to follow NASCO guidelines on this in the extent found relevant.

2.2 What is the decision-making process for the management of salmon fisheries, including predetermined decisions taken under different stock conditions (e.g. the stock levels at which regulations are triggered)? *(Max. 200 words)*
(This can be answered by providing a flow diagram if this is available.)
(Reference: Sections 2.1 and 2.7 of the Fisheries Guidelines)

The Danish Fisheries Agency (Fiskeristyrelsen) has tasked DTU Aqua to assess fishing opportunities for salmon. Decisions are usually taken by the Danish Fisheries Agency in close cooperation with scientists at DTU Aqua, local angler organizations and the National anglers association. Stocking and monitoring of spawning size take place regularly in each of the four rivers with wild salmon,which makes it possible to split the total number of spawners up into wild salmon and hatchery reared salmon. The wild stock has increased substantially during recent years. Therefore a quota, negotiated between the fishery authorities, anglers and land owners, corresponding to approximately 10-20 % of the total spawning run (wild and stocked has been established for the recreational sport fishing.). The quotas are revised annually depending on spawning-run assessments.

2.3 (a) Are any fisheries permitted to operate on salmon stocks that are below their reference point (e.g. Conservation Limits)? If so, (b) how many such fisheries are there and (c) what approach is taken to managing them that still promotes stock rebuilding? *(Max 200 words)*
(Reference: Section 2.7 of the Fisheries Guidelines)

(a) No

Before the CL of 1000 wild salmon was reached, recreational rod fishing was permitted, but since 2015, all the four rivers have exceeded the 1000 wild spawner target. However this is partly a result of supportive stocking, except for river Storå.
River Varde (2016): 3389 total, 1200 wild
Skjern (2016): 3434 total, 1820 wild
Ribe Å (2017): 2902 total, 2176 wild
Storå (2018): 3790 total, 2274 wild

Inventories in the remaining 4 salmon rivers show steady improvement of the wild stocks, but we do not know if those populations have reached the Reference Point, but catch quotas are given for these

rivers as long as the stock is improving.

The idea of Conservation Limits, does not really apply to the Danish salmon stocks, because we are currently at an abundance in all the salmon rivers that exceed historical numbers. Even several centuries ago, the total number of returning salmon to Danish rivers was likely only a fraction of what we have now. It is clear that if each river can obtain a number of 1000 wild spawners every year, the population is in very healthy state and all the major spawning areas will be utilised. If we should establish a realistic and relevant conservation limit on the number of returning spawners it would be well below the reference point of 1000 wild salmon.

(b) NA – no populations are below conservation limits

(c) NA - Ditto

2.4 (a) Are there any mixed-stock salmon fisheries? If so (b) how are these defined, (c) what was the mean catch in these fisheries in the last five years and (d) how are they managed to ensure that all the contributing stocks are meeting their conservation objectives? *(Max. 300 words in total)*
(Reference: Section 2.8 of the Fisheries Guidelines)

(a)
No
Except for the Baltic Sea no commercial marine fisheries target salmon in Denmark. Salmon by-catches in other fisheries are less than 100 kg according to the official fishery catch statistics. The only important fishery targeting salmon outside the Baltic Sea is sports fishing in rivers.

The salmon is protected against commercial fishery in many coastal waters where it is illegal to catch salmon in the fjords of Ringkøbing (river Skjern Å) and Nissum (river Storå). In the area where the six southern salmon rivers are located, it is not permitted to use gill nets (in the Wadden Sea).

(b) NA

(c)NA

(d)NA

2.5 How are socio-economic factors taken into account in making decisions on management of salmon fisheries? *(Max. 200 words)*
(Reference: Section 2.9 of the Fisheries Guidelines)

We did analyses of the added local value of the salmon (rod) fishing in Skjern River in 2013 and this is considered in the management decisions. The majority of the restauration projects are carried out in close collaboration between anglers and authorities and here the socio-economic value of salmon fishing is clearly being used as reason to make the necessary investments.

2.6 What is the current level of unreported catch and what measures are being taken to reduce this? *(Max. 200 words)*
(Reference: Section 2.2 of the Fisheries Guidelines and the Minimum Standard)

Unreported catch in the rivers is judged to be at a very low level in the eight rivers running into the North Sea, because most of the fishery is run by local well-organized angler associations. However, some illegal catch is likely in the net-fishing in the estuaries. The Danish Fisheries Agency is responsible for enforcement and control of the fishing ban for the coastal salmon fisheries, To our best judgment, unreported catch is still well below 5 % of total reported catch.

2.7 Has an assessment under the Six Tenets for Effective Management of an Atlantic Salmon Fishery been conducted? If so, (a) has the assessment been made available to the Secretariat and (b) what actions are planned to improve the monitoring and control of the fishery? (c) If the six tenets have not been applied, what is the timescale for doing so? *(Max. 200 words)* *(Reference: Six Tenets for Effective Management of an Atlantic Salmon Fishery, WGCST(16)16)*
(a) No
(b)NA
(b) No plan, but the recommendation is considered. However, it seems that our management (even without the Six Tenets) have been much more effective and successful than those of most other NASCO members.

2.8 Identify the threats to wild salmon and challenges for management associated with their exploitation in fisheries, including bycatch of salmon in fisheries targeting other species.	
Threat / challenge F1	No threats related to fisheries or fisheries management
Threat / challenge F2	
Threat / challenge F3	
Threat / challenge F4	

Copy and paste lines to add further challenges which should be labelled F5, F6, etc.

2.9 What SMART actions are planned during the period covered by this Implementation Plan (2019 – 2024) to address each of the threats and challenges identified in section 2.8 to implement NASCO's Resolutions, Agreements and Guidelines and demonstrate progress towards achievement of its goals and objectives for the management of salmon fisheries?		
Action F1:	Description of action:	
	Planned timescale (include milestones where appropriate):	
	Expected outcome:	
	Approach for monitoring effectiveness & enforcement:	
	Funding secured for both action and monitoring programme?	Choose an item.
Action F2:	Description of action:	
	Planned timescale	

	(include milestones where appropriate):	
	Expected outcome:	
	Approach for monitoring effectiveness & enforcement:	
	Funding secured for both action and monitoring programme?	Choose an item.
Action F3:	Description of action:	
	Planned timescale (include milestones where appropriate):	
	Expected outcome:	
	Approach for monitoring effectiveness & enforcement:	
	Funding secured for both action and monitoring programme?	Choose an item.
Action F4:	Description of action:	
	Planned timescale (include milestones where appropriate):	
	Expected outcome:	
	Approach for monitoring effectiveness & enforcement:	
	Funding secured for both action and monitoring programme?	Choose an item.

Copy and paste lines to add further actions which should be labelled F5, F6, etc.

3. Protection and Restoration of Salmon Habitat:

In this section please review the management approach to the protection and restoration of habitat in your jurisdiction in line with the relevant NASCO Resolutions, Agreements and Guidelines.

3.1 How are risks to productive capacity identified and options for restoring degraded or lost salmon habitat prioritised, taking into account the principle of 'no net loss' and the need for inventories to provide baseline data? *(Max. 200 words)* (*Reference: Section 3 of the Habitat Guidelines)*

It is well acknowledged by both the fishery and water authorities that the physical conditions of the Danish streams and river habitats have been highly degraded during the last two hundred years. Measures are implemented to increase the physical quality of habitats because organic

pollution as such is not a problem today in Danish rivers. In addition, habitats have improved in many smaller streams and as well as in some larger rivers by supplying spawning material (i.e. stone and gravel). The introduction of these measures is encouraged/demanded by the EU WFD. The general knowledge of the physical condition of watercourses and the monitoring results have demonstrated that the current initiatives have multiplied salmon spawning and nursery areas since 2004 in the four rivers with wild salmon. Thus, most of the huge improvement of our salmon stocks over the latest 20 years is due to physical habitat restoration and removal of obstacles. It does not seem relevant here to adhere to the principle of no net loss, as we are only conducting projects that benefit salmon. One exception is the establishment of wetland areas to reduce nutrient load from agriculture to sea. Here several projects have been planned, where a major, permanent wetland would effectively increase the mortality of migrating smolts. So far, it has been possible to stop such plans in salmon rivers or to design them in a way that secure smolt migration. The review group asks for "formal process", but that is against the Danish management principles, that builds on a case-to-case adaptive approach, that we believe is much more effective than any formal process.

3.2 How are socio-economic factors taken into account in making decisions on salmon habitat management? *(Max. 200 words)*
(Reference: Section 3.9 of the Habitat Guidelines)

The fishery and environmental authorities are in close contact with local stakeholders and educate local water authorities and anglers in restoration methods. Due to the involvement in the setting of quotas and management as such, the local anglers and land owners participate and feel responsible for the national salmon management plan. Also, the municipalities have supported habitat restoration in acknowledgment of the high economic and social importance of a sound salmon fishing.

3.3 What management measures are planned to protect wild Atlantic salmon and its habitats from (a) climate change and (b) invasive aquatic species? *(Max. 200 words each)*
(Reference: Section 3.2 of the Habitat Guidelines)

(a)
The changed precipitation regime with more severe floods than before, makes sediment transport more detrimental for the salmonids and measures are taken to mitigate this by sediment traps. Likewise, we expect more drought with the negative impact on salmon rivers and restrictions are placed on water extraction. Now also most rivers close for fishing when the water temperature exceeds 18 degrees.

(b) So far invasive species have not been a problem in Danish salmon rivers, but the invasive signal crayfish is spreading aggressively in our rivers and the consequences of this is studied. There are legal measures prohibiting import and spread of exotic species. The reason that we have no or very few exotic species in our rivers can be an effective protection and control of water and material transferred between watersheds.

3.4 Identify the main threats to wild salmon and challenges for management in relation to estuarine and freshwater habitat.

Threat / challenge H1	Barriers
Threat / challenge H2	Predation from birds (Cormorants) and mammals (Seals)
Threat / challenge H3	Channalisation, habitat degradation due to agriculture
Threat / challenge H4	Sediment transport

Copy and paste lines to add further threats/challenges which should be labelled H5, H6, etc.

3.5 What SMART actions are planned during the period covered by this Implementation Plan (2019 – 2024) to address each of the threats and challenges identified in section 3.4 to implement NASCO's Resolutions, Agreements and Guidelines and demonstrate progress towards achievement of its goals and objectives for the Protection, Restoration and Enhancement of Atlantic Salmon Habitat?		
Action H1:	Description of action:	Removal of barriers. For the salmon, especially two remaining Hydropower stations constitute a major migration obstacle, but also several small barriers are found in tributaries.
	Planned timescale (include milestones where appropriate):	Ongoing, no planned removal of the two major dams.
	Expected outcome:	Access to more spawning and rearing habitat, less smolt-loss for downstream migration. More returning salmon.
	Approach for monitoring effectiveness & enforcement:	Not necessary, we have enough documentation of the benefits of removing barriers.
	Funding secured for both action and monitoring programme?	No
Action H2:	Description of action:	Predator regulation. Increasingly harsh management measures to regulate cormorant population. More egg oiling, shooting and lethal regulation. Shooting of seals in salmon rivers.
	Planned timescale (include milestones where appropriate):	Ongoing
	Expected outcome:	Keeping cormorant predation of salmon smolts at or below the current level of app 50%. Preventing seals from entering salmon rivers and kill upstream migrants before they spawn.
	Approach for monitoring effectiveness & enforcement:	Very difficult. Regular surveys of smolt survival in lower river and estuary provides information on the loss. Different management measures are tested. One project on studying the effect of seal shooting in one river is initiated.
	Funding secured for both action and monitoring programme?	Expected
Action H3:	Description of action:	River restoration
	Planned timescale (include milestones where appropriate):	Ongoing
	Expected outcome:	More and better habitat available for salmon spawning and rearing – giving more wild smolts and then more returning adults.

	Approach for monitoring effectiveness & enforcement:	Many restoration projects have been carried out and many more are ongoing, ranging from introducing spawning substrate to removal of major dams and remeandering/restoration of long river stretches. Studies have been carried out and will likely continue to assess the efficiency of the restoration measures.
	Funding secured for both action and monitoring programme?	Expected
Action H4:	Description of action:	Sediment management, sediment traps and securing of buffer zones along streams and rivers to trap sediment before reaching the streams.
	Planned timescale (include milestones where appropriate):	Ongoing
	Expected outcome:	Improved habitat quality and quantity, securing good spawning habitat.
	Approach for monitoring effectiveness & enforcement:	Studies have been carried out and will likely continue to assess the efficiency of the sediment management measures.
	Funding secured for both action and monitoring programme?	Expected

Copy and paste lines to add further actions which should be labelled H5, H6, etc

4. Management of Aquaculture, Introductions and Transfers, and Transgenics:

Council has requested that for Parties / jurisdictions with salmon farms, there should be a greater focus on actions to minimise impacts of salmon farming on wild salmonid stocks. Each Party / jurisdiction with salmon farming should therefore include at least one action relating to sea lice management and at least one action relating to containment, providing quantitative data in Annual Progress Reports to demonstrate progress towards the international goals agreed by NASCO and the International Salmon Farmers Association (ISFA):

- *100% of farms to have effective sea lice management such that there is no increase in sea lice loads or lice-induced mortality of wild salmonids attributable to the farms;*
- *100% farmed fish to be retained in all production facilities.*

In this section please provide information on all types of aquaculture, introductions and transfers, and transgenics (including freshwater hatcheries, smolt-rearing etc.

4.1 (a) Is the current policy concerning the protection of wild salmonids consistent with the international goals on sea lice and containment agreed by NASCO and ISFA? (b) If the current policy is not consistent with these international goals, when will current policy be adapted to ensure consistency with the international goals and what management measures are planned to ensure achievement of these goals and in what timescale? *(Max. 200 words for each)*
(Reference: BMP Guidance)

(a) Yes

(b) NA
4.2 (a) What quantifiable progress can be demonstrated towards the achievement of the international goals for 100% of farms to have effective sea lice management such that there is no increase in sea lice loads, or lice-induced mortality of wild salmonids attributable to sea lice? (b) How is this progress monitored, including monitoring of wild fish? (c) If progress cannot be demonstrated, what additional measures are proposed and in what timescale? *(Max. 200 words each)* *(Reference: BMP Guidance)* *The measures by which these goals may be achieved, and against which the Review Group will be measuring the effectiveness of the Implementation Plan, are set out in the BMP Guidance SLG(09)5 (Best management practice; reporting and tracking; factors facilitating implementation) as agreed by NASCO and ISFA.*
(a) We do not need sea lice management because the few marine rainbow trout farms are situated in low-saline areas where salmon lice cannot live.
(b)NA
(c) NA
4.3 (a) What quantifiable progress can be demonstrated towards the achievement of the international goals for achieving 100% containment in all (i) freshwater and (ii) marine aquaculture production facilities? (b) How is this progress monitored, including monitoring of wild fish (genetic introgression) and proportion of escaped farmed salmon in the spawning populations? (c) If progress cannot be demonstrated, what additional measures (e.g. use of sterile salmon in fish farming) are proposed and in what timescale? *(Max. 200 words each)* *(Reference: BMP Guidance)* *The measures by which these goals may be achieved, and against which the Review Group will be measuring the effectiveness of the Implementation Plan, are set out in the BMP Guidance SLG(09)5 (Best management practice; reporting and tracking; factors facilitating implementation) as agreed by NASCO and ISFA.*
(a)(i) We do not have problems with escapees, because these are all rainbow trout and do not impact on wild salmon or trout stocks. There is however, increasing control and punishment in relation to retaining farmed fish. Few studies have not been able to find any negative effect of escaped rainbow trout, even though a few may enter some rivers.
(a)(ii) NA
(b) NA
(c) NA
4.4 What adaptive management and / or scientific research is underway that could facilitate better achievement of NASCO's international goals for sea lice and containment such that the environmental impact on wild salmonids can be minimised? *(Max 200 words)* *(Reference: BMP Guidance and Article 11 of the Williamsburg Resolution)*
NA
4.5 What is the approach for determining the location of aquaculture facilities in (a) freshwater and (b) marine environments to minimise the risks to wild salmonid stocks? *(Max. 200 words for each)*

(a) No new facilities, if any these will be recirculated production without impact on the wild fish.

(b) New marine open fish (rainbow trout) farms are being planned. The plans are meeting massive protest from locals and conservation organisations nationwide. Potential problems relating to wild salmon is not taken into consideration or has not been foreseen at this stage.

4.6 What progress has been made to implement NASCO's guidance on introductions, transfers and stocking? *(Max. 200 words)*
(Reference: Articles 5 and 6 and Annex 4 of the Williamsburg Resolution)

None
Denmark has strict veterinary rules and disease free zones for aquaculture.
In addition, all transporting of fish between water bodies must be authorized and where stocking takes place it is based on local F1 strains only. Further releases of salmon in the coming years will be based on opening up of new restored habitats see paragraph 3 and monitoring the spawning run of wild salmon (see paragraph 2). Releases of wild F1 salmon will be terminated when the original estimated spawning and rearing areas are restored and a high level of spawners has been reached, (as is now the case in Storå where no salmon are stocked since 2017). Our control system may follow NASCO and Williamsburg resolution, but the referent here has no information on this.

4.7 Is there (a) a requirement to evaluate thoroughly risks and benefits before undertaking any stocking programme and (b) a presumption against stocking for purely socio-political / economic reasons? *(Max. 200 words each)*
(Reference: Guidelines for incorporating social and economic factors in decisions under the Precautionary Approach and Annex 4 of the Williamsburg Resolution)

(a) Yes, stocking can only be done after the approval of DTU Aqua and the Danish Fisheries Agency, and will not be carried out if any risks are foreseen or if it is not deemed necessary

(b) See above. Stocking in rivers hosting wild populations is very restricted. Stocking in rivers and estuaries with very poor habitat/no wild stock is only done in river Gudenå, where salmon cannot access the spawning areas.

4.8 What is the policy / strategy on use of transgenic salmon? *(Max. 200 words)*
(Reference: Article 7 and Annex 5 of the Williamsburg Resolution)

NA- we have never had or will never have any transgenic salmon or trout, why would anybody?

4.9 *For Members of the North-East Atlantic Commission only:* What measures are in place, or are planned, to implement the eleven recommendations contained in the 'Road Map' to enhance information exchange and co-operation on monitoring, research and measures to prevent the spread of *Gyrodactylus salaris* and eradicate it if introduced, including the development and testing of contingency plans? *(Max. 200 words)*
(Reference 'Road Map' to enhance information exchange and co-operation on monitoring, research and measures to prevent the spread of G. salaris and eradicate it if introduced, NEA(18)08)

NA We have not had any incidence of G. salaris in Denmark. In the unlikely case of an outbreak, an emergency plan is ready and the infected river will be isolated.

4.10 Identify the main threats to wild salmon and challenges for management in relation to aquaculture, introductions and transfers, and transgenics.

Threat / Challenge A1	Salmon lice

Threat / challenge A2	
Threat / challenge A3	
Threat / challenge A4	

Copy and paste lines to add further threats/challenges which should be labelled A5, A6, etc.

4.11 What SMART actions are planned during the period covered by this Implementation Plan (2019 – 2024) to address each of the threats and challenges identified in section 4.10 to implement NASCO's Resolutions, Agreements and Guidelines and demonstrate progress towards achievement of its goals and objectives for aquaculture, introductions and transfers, and transgenics?		
Action A1:	Description of action:	Avoid establishment of marine salmon farms.
	Planned timescale (include milestones where appropriate):	NA
	Expected outcome:	NA
	Approach for monitoring effectiveness & enforcement:	NA
	Funding secured for both action and monitoring programme?	Choose an item.
Action A2:	Description of action:	
	Planned timescale (include milestones where appropriate):	
	Expected outcome:	
	Approach for monitoring effectiveness & enforcement:	
	Funding secured for both action and monitoring programme?	Choose an item.
Action A3:	Description of action:	
	Planned timescale (include milestones where appropriate):	
	Expected outcome:	
	Approach for monitoring effectiveness & enforcement:	

	Funding secured for both action and monitoring programme?	Choose an item.
Action A4:	Description of action:	
	Planned timescale (include milestones where appropriate):	
	Expected outcome:	
	Approach for monitoring effectiveness & enforcement:	
	Funding secured for both action and monitoring programme?	Choose an item.

Copy and paste lines to add further actions which should be labelled A5, A6, etc