	<p><b>Council</b></p> <p><i>Annual Progress Report on Actions taken under the Implementation Plan for the Calendar Year 2022 EU – Ireland</i></p>	<p><b>CNL(23)38</b></p>
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***Annual Progress Report on Actions taken under the Implementation Plan for the Calendar Year 2022***

The Annual Progress Reports allow NASCO to evaluate progress on actions taken by Parties / jurisdictions to implement its internationally agreed Resolutions, Agreements and Guidelines and, consequently, the achievement of their objectives and actions taken in accordance with the Convention. The following information should be provided through the Annual Progress Reports:

- any changes to the management regime for salmon and consequent changes to the Implementation Plan;
- actions that have been taken under the Implementation Plan in the previous year;
- significant changes to the status of stocks, and a report on catches; and
- actions taken in accordance with the provisions of the Convention.

*In completing this Annual Progress Report please refer to the **Guidelines for the Preparation and Evaluation of NASCO Implementation Plans and for Reporting on Progress**, [CNL\(18\)49](#).*

These reports will be reviewed by the Council. Please complete this form and return it to the Secretariat **no later than 1 April 2023**.

<b>Party:</b>	<b>European Union</b>
<b>Jurisdiction / Region:</b>	<b>Ireland</b>

<b>1: Changes to the Implementation Plan</b>
<b>1.1 Describe any proposed revisions to the Implementation Plan (Where changes are proposed, the revised Implementation Plans should be submitted to the Secretariat by 1 November).</b>
<b>1.2 Describe any major new initiatives or achievements for salmon conservation and management that you wish to highlight.</b>

<b>2: Stock status and catches.</b>
<b>2.1 Provide a description of any new factors that may affect the abundance of salmon stocks significantly and, if there has been any significant change in stock status since the development of the Implementation Plan, provide a brief (200 word max) summary of these changes.</b>
The catch advice for the 2022 fishery was that 48 rivers had an advised harvestable surplus as they were exceeding their conservation limits (CL). A further 16 rivers were advised for

opening for catch and release-only (C&R-only) fishing based on exceeding a minimum fry threshold ( $\geq 17$  salmon fry/5 minute electro-fishing average) in catchment-wide electrofishing surveys or that they met 65% or over of their CL but did not exceed their CL. 80 river systems were advised to be closed for fishing as they did not exceed 65% of CL, the minimum fry threshold or there was insufficient information for full stock assessment.

A separate assessment was made for 16 rivers with significant multi-sea-winter (MSW) salmon stocks based on the same criteria above. Of these, 13 had an advised harvestable surplus as they were exceeding their CL, two were advised to open for C&R-only fishing and one was advised for closure.

The catch advice for the 2023 fishery which is based on stock status in the preceding five-year period including 2022 is that 48 rivers have a harvestable surplus, 21 rivers are advised as C&R-only fisheries and 75 rivers should be closed to fishing based on the same criteria outlined above.

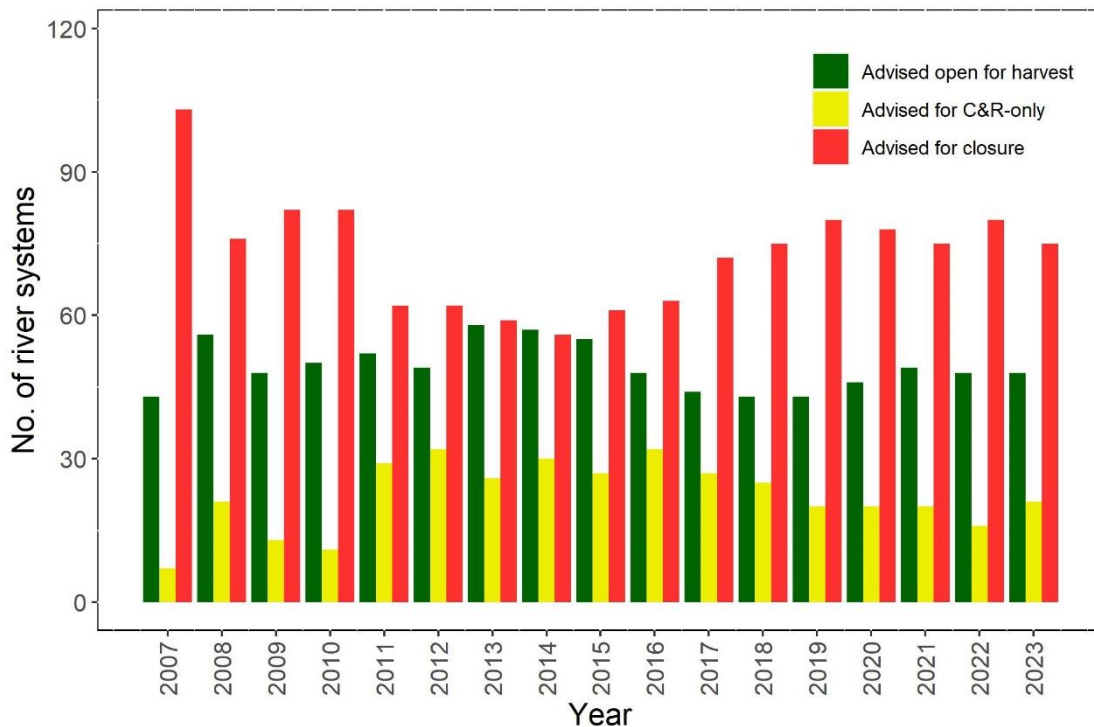


Figure 1. Scientific stock assessments for catch advice in Irish salmon fisheries (2007 to 2023)

There has been no significant changes in stock status since the development of the Implementation Plan.

**2.2 Provide the following information on catches: (nominal catch equals reported quantity of salmon caught and retained in tonnes ‘round fresh weight’ (i.e. weight of whole, ungutted, unfrozen fish) or ‘round fresh weight equivalent’).**

(a) provisional nominal catch (which may be subject to revision) for 2022 (tonnes)	In-river	Estuarine	Coastal	Total
	29.49	10.95	0	40.44

(b) confirmed nominal catch of salmon for 2021 (tonnes)	[33.01]	[17.49]	[0]	[50.5]
(c) estimated unreported catch for 2022 (tonnes)				[4.4]
(d) number and percentage of salmon caught and released in recreational fisheries in 2022	[13,642 caught and released (55.5 %)]			

### 3: Implementation Plan Actions.

#### 3.1 Provide an update on progress on actions relating to the Management of Salmon Fisheries (section 2.9 of the Implementation Plan).

*Note: the reports under 'Progress on action to date' should provide a **brief overview** of each action. Please report in relation to the reporting year only or the most relevant recent year. For all actions, provide **clear and concise quantitative** information to demonstrate progress. In circumstances where quantitative information cannot be provided for a particular action because of its nature, a clear rationale must be given for not providing quantitative information and other information should be provided to enable progress with that action to be evaluated. While referring to additional material (e.g. via links to websites) may assist those seeking more detailed information, this will not be evaluated by the Review Group.*

Action	Description of action (as submitted in the IP)	
<b>F1:</b>		<p>Protection against illegal fishing is a high priority in Ireland and the state invests a considerable amount of resources on these activities (Fishery Inspectors, Navy, Garda etc).</p> <p>The new RIB fleet and closely working with the Aer Corps and Navy will assist significantly in eradicating any offshore netting – however should significant returns of salmon materialise the probability of some unscrupulous fishermen making efforts to catch fish illegally remains. This is further countered by the careful monitoring of restaurants, smokeries and hotels for the occurrence of wild fish that have not come from a legal source.</p> <p>The following recent investment by IFI will greatly assist in achieving SMART actions regarding curtailment of illegal fishing:</p> <p>New offshore RIB fleet; new technologies including use of drones; Covert cameras; high power telescopes; thermal imaging etc.. Greater concentration on training of staff and facilities to get RIBs closer to launch points. IFI measure many metrics including man hours in fisheries protection; number of patrols; number of nets seized; length of net; number of individuals apprehended; number of fines issued; number of prosecutions undertaken etc. IFI ability to achieve all this has been strengthened by the investment in the new technologies and boats over the last two years.</p> <p>IFI produce an annual “Protection Plan” which is strongly focused on salmon protection; the plan for 2019 has increased</p>

		<p>focus on salmon protection as a support for the “International Year of the Salmon”. IFI also have a very mobile reactionary staff who can respond to threats or reported incidences of illegal activity and a 24 hour hotline operates that can alert staff at any stage to illegal threats.</p> <p>IFI is looking for additional funding in 2019 to expand the drone patrolling programme and get added high resolution thermal cameras to aid identifying targets in undergrowth close to rivers. IFI, subject to funding will secure additional technological equipment in 2019 to further support fisheries protection operations.</p> <p>Specific, measurable and timely actions on fishery protection in 2019 are as follows;</p> <ul style="list-style-type: none"> <li>• 6,584 man hours on fishery protection sea patrols</li> <li>• 24,517 man hours on fishery protection coastal/estuary patrols</li> <li>• 58,613 man hours on fishery protection river patrols</li> <li>• 783 boat patrols on fishery protection</li> <li>• 19,561 vehicle patrols on fishery protection</li> <li>• 135 kayak patrols and 38 drone patrols</li> <li>• 881 inspections of commercial salmon licence holders</li> <li>• 14657 inspections of recreational angler licence holders</li> </ul> <p>This level of activity in fishery protection is expected in each year of the five years over the 2019-2024 period.</p>
	Expected outcome <i>(as submitted in the IP)</i>	Increased protection of the salmon resource and a reduction in illegal fishing activities leading to stabilisation and/or increases of salmon stocks nationally.
	Approach for monitoring effectiveness & enforcement <i>(as submitted in the IP)</i>	Number of incidence of illegal fishing at sea and in rivers, number of illegal nets seized, number of prosecutions issued. Improvement in the status of rivers.
	Progress on action to date <i>(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)</i>	<p>185,745 fishery staff hours were spent on protecting Ireland’s fishing resource in 2022 as follows:</p> <ul style="list-style-type: none"> <li>• 6,694 staff hours on fishery protection sea patrols</li> <li>• 30,225 staff hours on fishery protection coastal/estuary patrols</li> <li>• 68,096 staff hours on fishery protection river patrols</li> </ul> <p>In addition,</p> <ul style="list-style-type: none"> <li>• 39,724 staff hours on fishery protection foot patrols</li> <li>• 29,447 staff hours on fishery protection lake patrols</li> <li>• 9,404 staff hours on fishery protection bass patrols</li> <li>• 727 boat patrols on fishery protection</li> <li>• 23,477 vehicle patrols on fishery protection</li> </ul>

		<ul style="list-style-type: none"> <li>• 105 kayak patrols and 906 drone patrols</li> <li>• 80 PWC patrols on fishery protection</li> <li>• 547 inspections of commercial salmon licence holders</li> <li>• 15,593 inspections of recreational angler licence holders</li> </ul> <p>This protection work was largely related to Atlantic salmon but fishery patrols were also targeted at other fish species. In 2022, a total of 184 nets were seized measuring a cumulative 8,465 metres in length; 297 Fixed Charge Notices were issued for Fishery Offences; and there were 112 fisheries-related prosecutions (concluded).</p> <p>In mid-2018, IFI announced a €3.3. million investment in 12 new state-of-the-art DELTA 780HX RIBs (Rigid Inflatable Boats) to be delivered on a phased basis for use as fisheries protection and enforcement vessels around Ireland’s coastal zone and larger inland lakes. All of these RIBs have now been delivered to IFI and are operational.</p>
	<p>Current status of action <i>(Please note: ‘Completed’ means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as ‘Ongoing’)</i></p>	<p>[Ongoing]</p>
	<p>If ‘Completed’, has the action achieved its objective?</p>	<p>[ ]</p>
<p><b>Action F2:</b></p>	<p>Description of action <i>(as submitted in the IP)</i></p>	<p>IFI is actively promoting the returns of accurate catch information from anglers and commercial fishers through the national carcass tagging and logbook scheme. This scheme facilitates the collection of catch data for subsequent scientific stock assessment purposes and informs associated management decisions on the fisheries status of individual fisheries such as the setting of TACs for fisheries where harvest is permitted. IFI intends to deliver electronic licences and logbooks by the end of 2021 specifically to encourage a greater uptake of licences and improve reporting rates from angling catches.</p>
	<p>Expected outcome <i>(as submitted in the IP)</i></p>	<p>On-line system in place, facilitating greater returns of logbooks and increase in uptake of licences</p>
	<p>Approach for monitoring effectiveness &amp; enforcement <i>(as submitted in the IP)</i></p>	<p>Reports issue in relation to the % of logbook returned and these reports are evaluated. The return rate of logbooks from commercial fishers is 100% in recent years and it is envisaged that this will continue. Return rates of logbooks from anglers is c. 60% in recent years and it is intended that the reporting rate will increase. A proportion of non-return of licences are pursued</p>

		through reminders and potentially through the legal system. Use of the system will allow for quicker analysis of data and identification of any issues arising leading to better and more timely management decisions regarding the protection and conservation of salmon.
	Progress on action to date <i>(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)</i>	The online electronic system to purchase a salmon licence is operational ( <a href="https://store.fishinginireland.info">https://store.fishinginireland.info</a> ).  Return of catch information from commercial licence holders was 100% for 2022, the same level as recent preceding years. The return of logbooks by anglers is not yet available but is estimated at 55% in 2022. In 2021 it was 54.4% which was slightly lower than 2020 (56.3%) and 2019 (57.8%) and lower than average logbook returns of 63.8% in the preceding ten-year period (2012-2021).
	Current status of action <i>(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')</i>	Ongoing
	If 'Completed', has the action achieved its objective?	
<b>Action F3:</b>	Description of action <i>(as submitted in the IP)</i>	IFI's International Year of the Salmon Promotional Plan is in place and will be delivered in 2019 and will leave legacies into the future. IFI have an education and outreach programme which will raise awareness of the critical state of salmon stocks.
	Expected outcome <i>(as submitted in the IP)</i>	Raised awareness of the critical state of salmon stocks nationally.
	Approach for monitoring effectiveness & enforcement <i>(as submitted in the IP)</i>	Measures are in place in the International Year of the Salmon Promotional Plan to assess effectiveness of the plan. IFI are constantly monitoring the effectiveness of the education and outreach programme.
	Progress on action to date <i>(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g.</i>	A range of IYS related initiatives and events were organised for 2019 to raise awareness of the critical state of salmon stocks and highlight their value, notably:  <ul style="list-style-type: none"> <li>• Launch of IYS by lead Government Minister and associated national media PR campaign (five pieces of national media coverage and 11 pieces of regional coverage. Total reach = 378,366 people).</li> </ul>

	<p><i>website links) will not be evaluated)</i></p>	<ul style="list-style-type: none"> <li>• Announcement of 2019 angling regulations (emphasis on sustainable salmon angling for IYS. IYS logo placed on all c. 17,5000 salmon and sea trout licences issued).</li> <li>• The IFI Citizen Science Salmon Scale Collection Project (<a href="https://tinyurl.com/u3v4gse">https://tinyurl.com/u3v4gse</a>). Sample packs were circulated with c. 17,000 angling licences issued. Initiative resulted in c. 700 scale envelope submissions from 20 rivers with a strong representation of samples from rivers where monitoring is not routine (seven pieces of national and 17 pieces of regional media coverage. Total reach = 429,053). Initiative will continue in 2020.</li> <li>• IFI managed the administration of the international NASCO funding call of €150,000 to promote IYS.</li> </ul> <p>Full details on IYS activities undertaken in 2019 were provided in a submission to NASCO in the standard IYS reporting template (Report on Actions and Activities to Deliver the International Year of the Salmon (IYS) Initiative, September 2018 to December 2019 IYS) and also reported in more detail in the 2020 APR submission.</p>
	<p>Current status of action <i>(Please note: ‘Completed’ means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as ‘Ongoing’)</i></p>	<p>[Completed]</p>
	<p>If ‘Completed’, has the action achieved its objective?</p>	<p>[Yes.</p>
<p><b>Action F4:</b></p>	<p>Description of action <i>(as submitted in the IP)</i></p> <p>Expected outcome <i>(as submitted in the IP)</i></p> <p>Approach for monitoring effectiveness &amp; enforcement <i>(as submitted in the IP)</i></p>	<p>Permit the operation of mixed-stock commercial fisheries only in estuaries where the stocks of contributing rivers simultaneously exceed the conservation limit (CL) set. As of 2020, only two such fisheries are in operation (Killary Harbour and Castlemaine Harbour) with a third, Tullaghan Bay not operating since 2013. Closely monitor catches in-season as required to minimise over-exploitation and illegal fishing and ensure the return of 100% of commercial fisheries logbooks from such fisheries.</p> <p>Sustainable exploitation in a very limited number of mixed-stock estuarine fisheries where the CL of constituent river stocks is simultaneously exceeded. Cessation of exploitation where stocks fail to meet CL to facilitate natural stock recovery.</p> <p>Scientific stock assessments will be conducted annually by the Technical Expert Group on Salmon, the output of which is reported to the North-South Standing Scientific Committee for Inland Fisheries. This body then provides advice to the fisheries</p>

		<p>management authority (IFI) on the sustainable operation of such fisheries which are formalised <i>via</i> annual regulations. IFI fisheries protection staff will conduct in-season monitoring of catches as required and ensure the 100% reporting of logbooks. All relevant information will be reported annually in TEGOS and IFI reports.</p>
	<p>Progress on action to date <i>(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)</i></p>	<p>Four mixed-stock commercial fisheries were permitted to operate in 2022 (Castlemaine Harbour, Killary and Owenmore Estuary and Tullaghan Ferry) as their respective contributing river-stocks were all deemed to be simultaneously exceeding their conservation limit by TEGOS. As such, a sustainable surplus was available for exploitation which, if fished, would not affect the conservation status of individual stocks of contributory rivers. All four fisheries were commercially fished in 2022 and none exceeded the total allowable catch set. Catches at all four fisheries were monitored by IFI in-season via the Carcass Tagging and Logbook Scheme and 100% of logbooks recording catches from these fisheries in 2022 were submitted to the fisheries authorities. All relevant information referred to above is reported annually in the TEGOS, IFI Catch Statistics and NASCO EU (Ireland) mixed-stock fisheries reports.</p>
	<p>Current status of action <i>(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')</i></p>	<p>Ongoing</p>
	<p>If 'Completed', has the action achieved its objective?</p>	<p>I</p>



**3.2 Provide an update on progress on actions relating to Habitat Protection and Restoration** (section 3.5 of the Implementation Plan).

*Note: the reports under 'Progress on action to date' should provide a **brief overview** of each action. Please report in relation to the reporting year only or the most relevant recent year. For all actions, provide **clear and concise** quantitative information to demonstrate progress. In circumstances where quantitative information cannot be provided for a particular action because of its nature, a clear rationale must be given for not providing quantitative information and other information should be provided to enable progress with that action to be evaluated. While referring to additional material (e.g. via links to websites) may assist those seeking more detailed information, this will not be evaluated by the Review Group.*

<p><b>Action H1:</b></p>	<p>Description of action (as submitted in the IP)</p>	<p>Ireland's River Basin Management Plan (RBMP) 2018-2021 sets out, on a national level, corresponding actions that will be taken to address identified pressures.</p> <p><b>Action 1. Agricultural Pollution</b></p> <p>The integrated Governmental approach to the enforcement of the Nitrates Action Programme (2018–2021) will be implemented with the aim of protecting and improving water quality. There will be increased targeting of inspections by local authorities based on water quality results and the outputs of the RBMP characterisation process. It is envisaged that a Nitrates Action Programme plan for the period 2022-2024 will follow the current plan.</p> <p><b>Action 2 Domestic Waste Water Pollution</b></p> <p>The National Inspection Plan for Domestic Waste Water Treatment Systems (2018– 2021) will continue with over 4,000 inspections carried out by local authorities over this period. It is envisaged that a further plan from 2022-2024 will follow.</p> <p>Over the period 2017–2021, Irish Water will invest approximately €1.7 billion in waste-water projects, programmes and asset maintenance. This investment will include €880 million for 255 major waste-water treatment projects, €350 million for capital investment in collection systems in 41 areas and €465 million for capital maintenance and national upgrade programmes. Further investment is envisaged post-2021.</p>
	<p>Expected outcome (as submitted in the IP)</p>	<p>Significant improvement in water quality nationally. The River Basin Management Plan for Ireland 2018-2021 sets out detailed expected outcomes concerning achievement of improved water quality, including upgrade of urban waste water treatment plants and increased investment in Ireland's waste water infrastructure. These include 726 water bodies to achieve general water quality improvements and 152 water bodies to experience improved water quality status.</p>
	<p>Approach for monitoring effectiveness &amp; enforcement (as submitted in the IP)</p>	<p>The EPA monitor and publish periodic reports on water quality status nationally and progress on achieving the objectives of the Water Framework Directive. This is the principal indicator to measure the efficacy of the Nitrates Action Programme and domestic wastewater actions and associated water quality initiatives. Irish Water periodically publish details of investment plans, capital maintenance and national upgrade programmes in</p>

		<p>their annual reports and related publications. The Local Authorities, Waters Programme (LAWPRO) are responsible for undertaking and enforcing WFD Programmes of Measures and are carrying out a significant number of investigative assessments in identified areas for action. IFI undertake annual fish monitoring in designated water bodies for WFD reporting. These results are reported annually.</p>
	<p>Progress on action to date  <i>(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)</i></p>	<p>In 2022, the EPA published a water quality monitoring report summarising water quality data in rivers, lakes and estuaries over the period 2016-2021. The analysis was based on monitoring of ecological and physico-chemical parameters for over 4,000 water bodies nationwide during this time period. A separate EPA report in 2022 documented nitrogen and phosphorus concentrations in Irish waters in the period 2019-2021. These are the most recent such reports available. Some important results reported relevant to Atlantic salmon include:</p> <ul style="list-style-type: none"> <li>• Only 54% of surface waters in rivers, lakes and estuaries had satisfactory water quality with an overall trend in water quality deterioration. The primary culprit is excess phosphorus and nitrogen loading, principally from agricultural run-off.</li> <li>• There has been a 1% decline in the number of rivers with satisfactory water quality scores compared to the period prior to 2016-2021.</li> <li>• Almost one-fifth (18.5%) of monitored Irish rivers have poor or bad status (heavily polluted).</li> <li>• 39% of rivers have seen an increasing trend in nitrate concentrations since 2016, mostly located throughout eastern and southern regions. 43% of all monitored rivers nationally have high nitrate concentrations.</li> <li>• One-third (30%) of all river sites monitored have unacceptably high phosphorus concentrations. 17% of sites are showing an increasing trend in phosphorus loads.</li> <li>• 161 fish kills were recorded in Irish rivers during the 2016-2021 monitoring period, largely associated with poor water quality and pollution events.</li> </ul> <p>The EPA have widely stressed the urgency in ameliorating these water quality declines. The third River Basin Management Plan for 2022-2027 underwent public consultation in 2022 but is still currently in review. It was stressed that the plan needs to include a firm commitment to address the main causes of poor water quality and include clear deliverables and timelines. The fifth Nitrates Action Programme for 2022-2025 was published in 2022 and must be fully implemented to halt worsening water quality. To support this, the EPA will develop and</p>

		<p>implement a National Agricultural Inspection Programme for local authorities.</p> <p>Action 2 Domestic Waste Water Pollution</p> <p>The EPA publish a Domestic Waste Water Treatment System Inspections report each year. In the most recent 2022 report, this evaluated inspections made during 2021:</p> <ul style="list-style-type: none"> <li>• 1147 inspections were made, an increase over the previous year.</li> <li>• 53% of systems failed.</li> <li>• 29% of systems were deemed a risk to the environment.</li> <li>• 75% of systems that failed during 2013-2021 were fixed by the end of 2021.</li> <li>• 36 legal actions have been taken by local authorities for failure to fix malfunctioning waste water treatment systems since 2013.</li> </ul> <p>Following public consultation, a new 5-year National Inspection Plan for 2022-2026 was published. The plan will focus inspections on areas near rivers where there is a greater risk to water quality. The minimum number of inspections will also increase from 1000 to 1200 per year. All wastewater treatment system failures that are not remedied must be followed up with prosecutions by local authorities in accordance with the Water Services Act 2007.</p>
	<p>Current status of action <i>(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')</i></p>	<p>[Ongoing]</p>
	<p>If 'Completed', has the action achieved its objective?</p>	<p>[ ]</p>
<p><b>Action H2:</b></p>	<p>Description of action <i>(as submitted in the IP)</i></p>	<p><b>Hydromorphological threats.</b></p> <p><b>Action 1. Barriers</b></p> <p>The IFI Barriers programme (2019 to 2021) will identify, assess and document barriers to fish migration on a national basis. Barriers will be ranked according to the risk they pose to fish migration. The inventory will form the basis of a prioritised restoration programme to be implemented between 2022 and</p>

		<p>2027.</p> <p><b>Action 2. Rehabilitation of Drained Rivers</b></p> <p>Under the 1945 Arterial Drainage Act, the Office of Public Works is obliged to carry out maintenance work on the network of arterially-drained channels. Annually, the OPW undertakes maintenance on approximately 2,000 km of channels in its network, following the environmental drainage maintenance procedures to minimise environmental impact. The guidance provides potential for significant retention of riparian habitat and also for alteration of instream hydromorphology in appropriate locations. Progress on this action will be reported.</p>																
	<p>Expected outcome <i>(as submitted in the IP)</i></p>	<p>Improvement in salmon habitat quality and fish passage.</p>																
	<p>Approach for monitoring effectiveness &amp; enforcement <i>(as submitted in the IP)</i></p>	<p><b>Action 1:</b> The IFI Barriers programme will report annually on numbers of Barriers to fish passage identified and assessed.</p> <p><b>Action 2:</b> The OPW will report annually on the KMs of drained channels maintained using the environmental drainage maintenance procedures.</p>																
	<p>Progress on action to date <i>(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)</i></p>	<p>Action 1. The National Barrier Programme (NBP) has received funding from the Irish government to operate up to 2027. It will continue to build on the national geo-database of potential barriers to fish passage (73,076 structures). These structures are being assessed using a web-based paperless, barrier assessment application. The NBP has also identified 30 large priority structures for removal or mitigation. By January 2023, IFI has surveyed 30,214 instream structures, of which 7,429 have been identified as barriers to fish passage (culvert, weir, ford, sluice etc). The NBP has assessed 233 significant barriers to fish passage and published corresponding reports to inform remedial actions. Between 2010 and 2023, barrier to fish passage remediation works undertaken by IFI in Irish rivers are as follows:</p> <table border="1" data-bbox="678 1512 1308 1832"> <thead> <tr> <th><b>Barrier Remedial Works 2010 - 2022</b></th> <th><b>Number</b></th> </tr> </thead> <tbody> <tr> <td>Works completed</td> <td>43</td> </tr> <tr> <td>In construction</td> <td>2</td> </tr> <tr> <td>Design stage</td> <td>4</td> </tr> <tr> <td>Planning stage</td> <td>32</td> </tr> <tr> <td>Delayed</td> <td>2</td> </tr> <tr> <td>Barrier collapsed</td> <td>3</td> </tr> <tr> <td><b>Total number</b></td> <td><b>86</b></td> </tr> </tbody> </table>	<b>Barrier Remedial Works 2010 - 2022</b>	<b>Number</b>	Works completed	43	In construction	2	Design stage	4	Planning stage	32	Delayed	2	Barrier collapsed	3	<b>Total number</b>	<b>86</b>
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		<p>Action 2. Rehabilitation of Drained Rivers</p> <p>The most recent information available on this action is published in the Environmental River Enhancement Programme (EREP) Annual Report 2021 and is summarised as follows:</p> <ul style="list-style-type: none"> <li>• Five-year agreement (2018-2022) made between Office of Public Works (OPW) and IFI to continue the EREP work, share information on issues within drained catchments pertinent to the Water Framework Directive (WFD) such as fish passage barriers, hydromorphology and fish ecological status in order to inform mitigation measures.</li> <li>• Detailed catchment-scale survey of the Kells Blackwater comprising surveys of fish populations (23 sites); river hydromorphology assessments (26 sites); and potential barrier assessments (1016 locations examined). The Kells Blackwater is a sub-catchment of the Boyne, a catchment of major importance for salmon. At least ten major weirs are intact on the main channels within the catchment demonstrating significant fish passage issues exist. Detailed fish passage surveys have been completed on eight of these structures to date.</li> <li>• Further barrier assessment and screening was completed in other schemes affected by arterial drainage including the Broadmeadow and Ward, as well as detailed barrier surveys on the Brosna with 637 potential barriers identified. Recommendations were made as regards priorities for mitigation.</li> <li>• A return visit to a long-term study site on the River Dee where instream enhancement works were completed in 2009 revealed issues identified with bank erosion and instream cattle access had been mitigated through fencing and bank protection measures. Hard reinforcements had renaturalised, and succession of fringing vegetation is ongoing at the site. Overall hydromorphological conditions have improved through the measures.</li> <li>• the km of drained channels maintained using the environmental drainage maintenance procedures is not available for year 2022.</li> </ul>
	<p>Current status of action <i>(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an</i></p>	<p>[Ongoing]</p>

	<i>ongoing action that is reported on annually, it should be marked as 'Ongoing')</i>	
	If 'Completed', has the action achieved its objective?	
<b>Action H3:</b>	Description of action <i>(as submitted in the IP)</i>	IFI have initiated an evidence-based assessment programme to determine the impact of climate change on the Irish fisheries. This programme will establish index catchments for fisheries-related climate change research and associated fisheries policies will be developed.
	Expected outcome <i>(as submitted in the IP)</i>	IFI – Series of vulnerability risk assessment maps for key fish species including salmon and informed targeted measures.  Mitigation measures to protect vulnerable fish species such as Atlantic salmon.
	Approach for monitoring effectiveness & enforcement <i>(as submitted in the IP)</i>	IFI – A work programme has been developed with a series of deliverables and will be monitored through a steering group within IFI.  Details project plans and deliverables will be reviewed annually.
	Progress on action to date <i>(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)</i>	[IFI established a research programme in 2019 to ascertain the impacts of climate change on Irish fish stocks including salmonids. In late 2020 funding was received from the Office of Public Works to examine climate resilience of fisheries in drained catchments. To date the two programmes have initiated a nationwide environmental monitoring network in 12 catchments including two state-of-the-art lake monitoring platforms in regionally important salmonid lakes. There are currently c. 380 environmental sensors collecting data in salmonid river habitat across Ireland, measuring a range of parameters including water temperature, water levels, dissolved oxygen and meteorological data. Spatial statistical models of catchment-wide stream temperatures have been developed to identify channels most at-risk from climate change impacts. Resulting habitat 'risk maps' are informing the development of targeted measures and fisheries policies will be produced at a later stage in this programme of work.  Data collected so far has allowed the delineation of cold-water refuges and vulnerable river reaches experiencing excessively warm temperatures in a number of important Atlantic salmon catchments including the Erriff (National Salmonid Index Catchment) and the River Boyne. A climate change vulnerability assessment for Ireland's freshwater fish species has also been published in 2022.

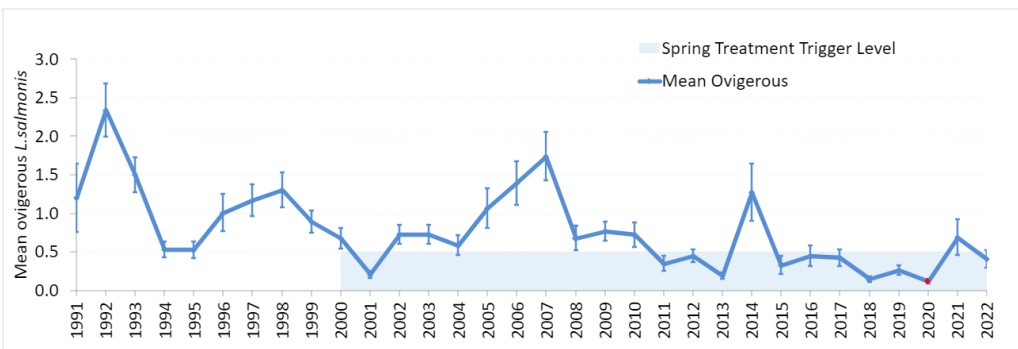
		Results highlight the high vulnerability of Atlantic salmon to climate change, further emphasising the need for climate mitigation solutions in salmon rivers. ]
	Current status of action <i>(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')</i>	[Ongoing]
	If 'Completed', has the action achieved its objective?	[
<b>Action H4:</b>	Description of action <i>(as submitted in the IP)</i>	<b>Invasive Species</b>  Action 1.  The EU Regulation (1143/2014) on “the prevention and management of the introduction and spread of invasive alien species” will be implemented.  Action 2.  Development and evaluation of survey techniques to assess the extent of infestation of Curly-leaved waterweed in Lough Corrib and monitor the efficacy of control measures undertaken there.
	Expected outcome <i>(as submitted in the IP)</i>	Action 1: Development of a more coherent and co-ordinated national approach to IAS management that will facilitate better communication and collaboration between relevant authorities.  Action 2: Survey techniques will be developed and evaluated to assess the extent of infestation of Curly-leaved waterweed in Lough Corrib and monitor the efficacy of control measures undertaken there.
	Approach for monitoring effectiveness & enforcement <i>(as submitted in the IP)</i>	Action 1: The Department of Culture, Heritage, and the Gaeltacht in consultation with other relevant Departments (notably the Department of Communications, Climate Action and Environment) will oversee the implementation of this action.  Action 2: As the lead participant, IFI will manage the implementation of this programme and report annually on the progress made.
	Progress on action to date <i>(Provide a brief overview with a quantitative measure, or other justified</i>	[Action 1: Ireland's 3rd national biodiversity plan (for period 2017-2021) included action plans to implement EU IAS Regulation.

	<p><i>evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)</i></p>	<p>However as of January 2023, Ireland has of yet failed to establish, implement or communicate to the EU an action plan to implement provisions under Regulation 1143/2014 to prevent and manage the spread of invasive alien species.</p> <p>Ireland's 4th National Biodiverstiy Plan (covering 2023-2027 period) underwent public consultation in 2022 and is currently under review. The draft plan included specific reference to the development and implementation of a national plan through new national legislation in order to fully implement the EU IAS Regulations.</p> <p>Action 2: The Inland Fisheries Ireland Curly-leaved waterweed (Lagarosiphon major) research programme in Lough Corrib concluded in 2021. An interim report covering the project progress in 2018-2019 was published in 2021 (Lagarosiphon Research on Lough Corrib (LARC) - Interim Report 2018-2019). Results and recommendations from the work have helped to inform management of the issue, which is currently ongoing and subject to operational efforts to harvest and control curly-leaved waterweed in the lake.</p> <p> </p>
	<p>Current status of action <i>(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')</i></p>	<p>[Ongoing]</p>
	<p>If 'Completed', has the action achieved its objective?</p>	<p> </p>

**3.3 Provide an update on progress on actions relating to Aquaculture, Introductions and Transfers and Transgenics (section 4.11 of the Implementation Plan).**

*Note: the reports under 'Progress on action to date' should provide a **brief overview** of each action. Please report in relation to the reporting year only or the most relevant recent year. For all actions, provide **clear and concise** quantitative information to demonstrate progress. In circumstances where quantitative information cannot be provided for a particular action because of its nature, a clear rationale must be given for not providing quantitative information and other information should be provided to enable progress with that action to be evaluated. While referring to additional material (e.g. via links to websites) may assist those seeking more detailed information, this will not be evaluated by the Review Group.*



<b>Action A1:</b>	Description of action (as submitted in the IP)	Salmon lice infestation: aspire to 100% of inspections below mandatory trigger levels. The Department of Agriculture, Fisheries and Food “Strategy for Improved Pest Control in Irish salmon farms, 2008”, aims to enhance the control of salmon lice infestations on Irish salmon farms by the creation of a “real time” management regime. This regime is intended to vigorously deal with failures to control sea lice infestations on a case-by-case basis. The strategy and the accompanying <i>Monitoring Protocol No. 3 Sea Lice Monitoring &amp; Control</i> will be revised resulting in consistent and vigorous control of salmon lice infestations on marine farms.
	Expected outcome (as submitted in the IP)	Reduced sea lice levels on farmed salmon
	Approach for monitoring effectiveness & enforcement (as submitted in the IP)	All farms are inspected monthly (bi-monthly from March to May) and a monthly report circulated. Breaches of the trigger levels are notified to the farm and the regulator. Consecutive breaches are dealt with through a <i>Management Cell</i> which may result in sanctions should the farm fail to control the lice levels.
	Progress on action to date (Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)	<p>The current inspection regime, performed by the Marine Institute on behalf of the State, involves the inspection and sampling of each year class of fish at all fish farm sites 14 times per annum - twice per month during March, April and May and monthly for the remainder of the year, except December-January. Only one inspection is carried out during this period. Trends in sea lice infestation on farmed fish (Figure 1) in May, the peak period for wild salmon smolt migration, have shown a general downward trend since the introduction of the pest management strategy in 2008.</p>  <p>Figure 1. Average national May-mean adult female egg bearing salmon lice per fish, 1991 - 2022.</p> <p>The Marine Institute issues a monthly report of sea lice levels on all active marine farms in Ireland and publishes an Open Access annual report as part of the Irish Fisheries Bulletin series. Since 2006 there has been a gradual increase in the number of inspections below trigger levels (Figure 2). No breaches of the trigger levels have been recorded on any farms since July 2022 with very low sea lice levels recorded in the second half of the year.</p>

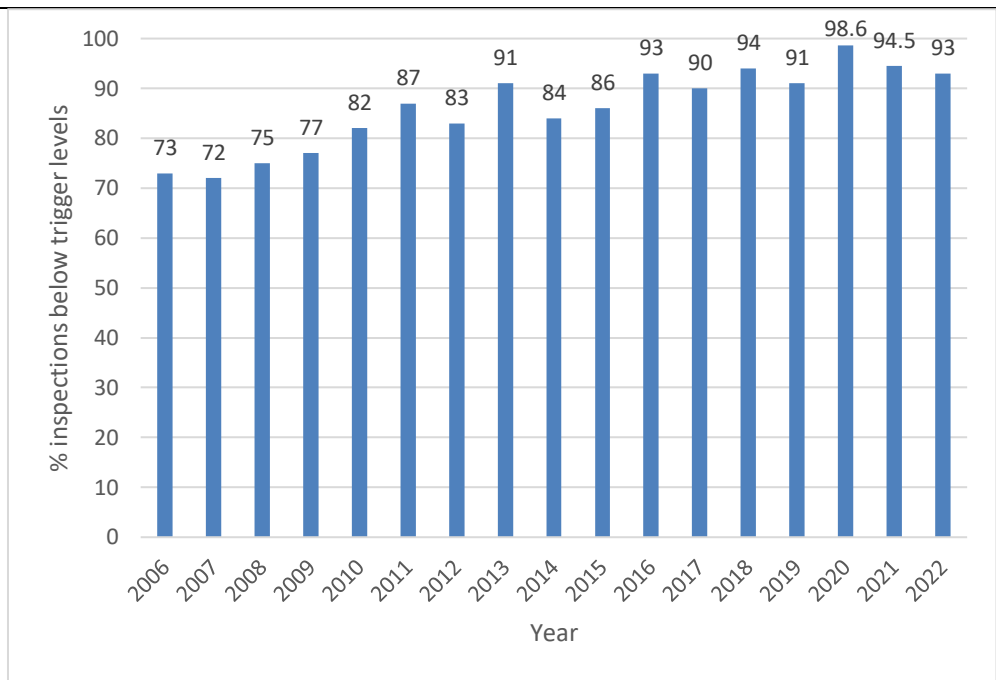


Figure 2. The percentage of inspections below trigger levels for all active marine Atlantic salmon farms per year, 2006 - 2022.

	<p>Current status of action (Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')</p>	<p>Ongoing</p>
	<p>If 'Completed', has the action achieved its objective?</p>	<p>[</p>
<p><b>Action A2:</b></p>	<p>Description of action</p>	<p>In April 2016, DAFM brought in a <i>Protocol for Structural Design of Marine Finfish Farms</i> to standardise an improved structural design process for marine finfish farm installations in Ireland to apply to all new or renewal licence applications.</p>

	<i>(as submitted in the IP)</i>	A new <i>Protocol</i> for reporting and investigating farmed escape incidences is planned. This <i>Protocol</i> will apply to all facilities, both marine and freshwater.
	Expected outcome <i>(as submitted in the IP)</i>	Increased awareness of the impact of escapes and improved reporting in line with new protocol.
	Approach for monitoring effectiveness & enforcement <i>(as submitted in the IP)</i>	Compliance with the <i>Protocol for Structural Design of Marine Finfish Farms</i> is monitored by the Marine Engineering Division of DAFM.
	Progress on action to date <i>(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)</i>	There were no officially reported escapes of farmed Atlantic salmon in Ireland in 2022.
	Current status of action <i>(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is</i>	Ongoing

	<p><i>an ongoing action that is reported on annually, it should be marked as 'Ongoing'</i></p>	
	<p>If 'Completed', has the action achieved its objective?</p>	
<p><b>Action A3:</b></p>	<p>Description of action (as submitted in the IP)</p>	<p>Regulation (EU) 2016/429 ("Animal Health Law") is the statutory framework within which aquatic diseases are regulated in Europe. Under Implementing Regulation (EU) 2021/620 Ireland is declared free from all listed salmonid diseases. This includes ISA, VHS, IHN. Ireland undertakes an active monitoring programme for these diseases in farmed salmon. Ireland has also applied additional national measures for BKD and <i>G. salaris</i> and is declared free from these diseases in Regulation (EU) 2021/260. An active monitoring programme for the presence of <i>G. salaris</i> in wild salmonids is undertaken annually. In addition to the regulatory controls to prevent the introduction of these diseases, a Code of Practice has been agreed between industry and government in relation to general fish health management. A Fish Health Handbook has been devised which provides guidance in relation to the control and management of non-listed diseases on salmonid farms. The proactive disease control and stock management principles outlined in the Handbook have been applied by industry since 2012.</p> <p>In recent years, since the principles of the Handbook have been implemented, the incidence of diseases such as Pancreas Disease and IPN have declined. However, gill related disorders continue to be a significant issue on salmon farms. These disorders are believed to be impacted to some degree by water temperatures and significant phyto and zooplankton blooms. Amoebic Gill Disease (AGD) caused by infection with the protozoan parasite <i>Neoparamoeba.perurans</i> has been associated with mortality in farmed salmon in recent years, due in large part to the lack of availability of freshwater treatments. Significant resources are however being invested in developing infrastructure to ensure that treatments can be carried out, which will significantly decrease infection pressure.</p> <p>Amoeba has been occasionally recorded on wild salmon but do not appear to have caused any negative impact. The condition is best treated with freshwater baths so any adult salmon returning to freshwater will be appropriately treated, should they have been infected. Temperatures above 10°C are thought to trigger the disease, but Scottish outbreaks have occurred at temperatures from 7.5°C. This raises the possibility of wild salmon smolts being infected in the vicinity of salmon farms in spring, although there is no evidence to show that this has occurred to date.</p>
<p>Expected outcome (as submitted in the IP)</p>	<p>Maintenance of disease free status for major diseases of salmonids listed in Regulation 2016/429 and for which Ireland is declared disease free under national Measures (BKD and <i>G. salaris</i>). Reduced incidence of disease outbreaks in aquaculture facilities</p>	
<p>Approach for monitoring</p>	<p>This involves intensive monitoring and application of legislation regarding control of disease and adherence to the agreed Code of Practice.</p>	

	effectiveness & enforcement <i>(as submitted in the IP)</i>	
	Progress on action to date <i>(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)</i>	Ireland continues to maintain disease freedom for major diseases of salmonids listed in Regulation (EU) 2016/429 and for which Ireland is declared disease free under national Measures (BKD and G. salaris).  Incidence of disease outbreaks (other than listed diseases) in aquaculture facilities is not systematically monitored, other than through voluntary reporting and from annual health surveillance visits under taken as required in Regulation (EU) 2016/429. Available evidence suggests that incidence of non-listed disease in aquaculture establishments remains at a consistent level. ]
	Current status of action <i>(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')</i>	Ongoing
	If 'Completed', has the	I

	action achieved its objective?	
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<b>4: Additional information required under the Convention</b>	
4.1	Details of any laws, regulations and programmes that have been adopted or repealed since the last notification.
4.2	Details of any new commitments concerning the adoption or maintenance in force for specified periods of time of conservation, restoration, and other management measures.
4.3	Details of any new actions to prohibit fishing for salmon beyond 12 nautical miles.
4.4	Details of any new actions to invite the attention of States not party to the Convention to matters relating to the activities of its vessels which could adversely affect salmon stocks subject to the Convention.
4.5	Details of any actions taken to implement regulatory measures under Article 13 of the Convention including imposition of adequate penalties for violations.
<b>North American Commission Members only:</b>	
4.6	Details of any new measures to minimise bycatches of salmon originating in the rivers of the other member.
4.7	Details of any alteration to fishing patterns that result in the initiation of fishing or increase in catches of salmon originating in the rivers of another Party except with the consent of the latter.