



Agenda item 7.1
For information

Council

CNL(18)29

***Annual Progress Report
on Actions Taken Under the Implementation Plan for the Calendar Year 2017***

EU-UK (England and Wales)

CNL(18)29

Annual Progress Report on Actions taken under the Implementation Plan for the Calendar Year 2017

The primary purposes of the Annual Progress Reports are to provide details of:

- 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

These reports will be reviewed by the Council. Please complete this form and return it to the Secretariat **no later than 29 March 2018**.

Party:	European Union
Jurisdiction/Region:	UK (England and Wales)

1: Changes to the Implementation Plan	
1.1 Describe any proposed revisions to the Implementation Plan <i>(Where changes are proposed, the revised Implementation Plans should be submitted to the Secretariat by 1 December).</i>	
No changes made	
1.2 Describe any major new initiatives or achievements for salmon conservation and management that you wish to highlight.	
<p>The Environment Agency (England) is currently advertising the following proposed byelaws to protect salmon stocks in English fisheries and on the Border Esk (border river with Scotland):</p> <ol style="list-style-type: none">1. Stop the taking of salmon from the majority of net fisheries by 2019; measures for some fisheries would be introduced in 2018.2. For rivers with the lowest status salmon stocks, introduce a mandatory requirement to return all salmon caught in rod fisheries and in any net fisheries entitled to continue to fish for sea trout. This reflects the need for both net and rod fishermen to help us protect salmon stocks.3. Restriction on the number, size and type of hooks that can be used when fishing. <p>The proposals come after an initial consultation to understand how the better management of salmon fishing in England and the Border Esk can reduce the impact on salmon numbers. The responses to that consultation helped inform the proposals and build an understanding of the likely impacts for managing salmon fishing in the future. The proposals include targets for high levels of voluntary catch and release for all other rivers. Mandatory measures will be considered if targets are not reached.</p> <p>Reducing the take of salmon by rods and nets is only one part of the Environment Agency’s larger programme called the Salmon Five Point Approach, which has been jointly developed and</p>	

committed to by a wide range of partners which include Government, Atlantic Salmon Trust, Angling Trust, Association of River Trusts and the Institute of Fisheries Management. It sets out actions to address the key pressures that affect the different life stages of salmon. The priorities are:

1. Improve marine survival
2. Further reduce exploitation by nets and rods
3. Remove barriers to migration and enhance habitat
4. Safeguard sufficient flows
5. Maximise spawning success by improving water quality

Progress with actions is provided in this APR.

In Wales in 2017, Natural Resources Wales (NRW) launched its own formal consultations (now closed) on Net Limitation Orders (NLOs) and netting and angling byelaw proposals for salmon and sea trout on rivers across all Wales.

NLOs were renewed, unchanged, across all rivers in Wales.

The byelaw consultations were divided into two categories: (i) for all Wales rivers - excluding the cross-border rivers Wye and Dee (and Severn where the Environment Agency take the lead on fisheries management), and (ii) for the cross-border rivers Wye and Dee.

The proposals for salmon call for mandatory catch-and-release (C&R) on net and rod fisheries across Wales (with associated method changes) in response to widespread failure of individual river stocks against their Conservation Limits.

For the 'all Wales rivers': slightly amended proposals in response to consultation correspondence (mainly modifications to some of the proposed changes in fishing methods) have been proposed.

For the 'cross-border rivers' (Wye and Dee) the consultation period has ended but NRW are still in the process of responding to correspondence and considering the issues raised. The process for those byelaws will be the same as that described for the 'all Wales rivers'.

Wels Government will make the final decision on whether to implement these byelaws or not, or what form they should take. Until that decision is made, the existing byelaws remain in place. However, salmon stocks remain vulnerable and so fishermen have been urged to return all salmon to the river; anglers have also been asked to only use methods that give released fish the best chance of survival.

Alongside these proposals for increased regulation of the fisheries, NRW are actively pursuing measures to improve the quality of the riverine environments utilised by salmonid stocks.

2: Stock status and catches.

2.1 Provide a description of any new factors which may significantly affect the abundance of salmon stocks 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.

The provisional annual review of stock status for 2017 resulted in the following river classifications against the designated management objective (MO) – i.e. of meeting or exceeding the conservation limit in four years out of five, on average:

- 0 rivers (0 %) ‘not at risk’ – i.e. $p > 95\%$ of meeting the MO;
- 7 rivers (11 %) ‘probably not at risk’ – i.e. $p > 50\%$ but $< 95\%$ of meeting the MO;
- 38 rivers (59 %) ‘probably at risk’ – i.e. $p > 5\%$ but $< 50\%$ of meeting the MO;
- 19 rivers (30 %) ‘at risk’ – i.e. $p < 5\%$ of meeting the MO.

[NB: The ‘at risk’ category does not mean that stocks are in danger of becoming extinct, but rather that they are falling well short of the management objective.]

Factors affecting stock abundance:

Several rivers in E&W have seen a progressive decline in numbers of returning salmon since around 2010. This has been driven by a marked reduction in the abundance of 1-sea winter salmon (or grilse) - the dominant run component on most salmon rivers in E&W in the last 20-30 years. While, in part, this decline has been compensated for by increased runs of multi-sea winter salmon (generally larger and more fecund fish than grilse), many river stocks are still failing to meet Management Objectives (above). These recent changes in the abundance and composition of returning salmon appear to be linked to changes in the marine environment – possibly long-term cyclical changes affecting the North Atlantic.

In addition to the influence of marine factors on adult returns, the poor recruitment of juvenile salmonids – particularly salmon fry - was a cause of significant concern in 2016 in many English and Welsh rivers. Aside from falling numbers of adult returns on many catchments, the main causes were thought to be unseasonably warm winter temperatures and extreme flows which, through various mechanisms, adversely affected spawning success. This poor recruitment was reflected in a very poor smolt run in 2017 (less than half the previous 5-year average) on a river in southern England where almost all the smolts migrate as one-year-olds. For most other rivers in England and Wales, where two-year-old smolts predominate, smolt runs are likely to be well below average in 2018. In general, juvenile recruitment in England and Wales in 2017 was better than in 2016. However, particularly low juvenile numbers on the River Camel in Cornwall led to the introduction of an emergency byelaw. This curtailed the net fishing season and made catch-and-release mandatory for the rod fishery.

A research project is being progressed by NRW, Welsh Government and Cardiff University to investigate the adverse effects of extreme winter climate on salmonid spawning and examine options for mitigation.

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	In-river	Estuarine	Coastal	Total
	9.5	3.5	36.0	49.0

subject to revision) for 2017 (tonnes)				
(b) confirmed nominal catch of salmon for 2016 (tonnes)	9.7	5.6	70.7	85.9
(c) estimated unreported catch for 2017 (tonnes)				6.4
(d) number and percentage of salmon caught and released in recreational fisheries in 2017.	11,174 salmon (provisional) were released by rods in 2017, representing 83% of the declared catch			

3: Implementation Plan Actions.

3.1 Provide an update on progress against actions relating to the Management of Salmon Fisheries (Section 2.8 of the Implementation Plan).

Note: The reports under 'Progress on Action to Date' should provide a brief overview with a quantitative measure of progress made. 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 F1:	Description of Action (as submitted in the IP)	Conduct annual assessments of the status of salmon stocks.
	Expected Outcome (as submitted in the IP)	Determination of the need for emergency regulatory controls or other new measures (including voluntary) on salmon fishing by nets and rods and implementation of changes.
	Progress on Action to Date (Provide a brief overview with a quantitative measure of progress. Other material (e.g. website links) will not be evaluated.)	Annual assessment of salmon stocks completed for 2017 (see section 2.1). Results to be reported to ICES in April 2018 and published subsequently in the annual Cefas/EA/NRW Assessment of Salmon Stocks and Fisheries. The objectives for 2017 have therefore been met.
	Current Status of Action	Ongoing
	If 'Completed', has the Action achieved its objective?	
Action F2:	Description of Action (as submitted in the IP)	Conduct regular (normally every 5 or 10 years) reviews of current Net Limitation Orders (NLOs) and Byelaws for estuary and river fisheries using the Decision Structure for Fisheries Management (see Annex 2) and amend the NLOs (licence numbers) and Byelaws (fishing periods and gear) as appropriate.
	Expected Outcome (as submitted in the IP)	Determination of the need for changes to existing regulatory controls on salmon fishing by nets and rods and implementation of changes.
	Progress on Action to Date (Provide a brief overview with a quantitative measure of progress. Other material (e.g. website links) will not be evaluated.)	The Poole Harbour NLO was reviewed and a reducing NLO was introduced with a target of zero (the fishery will close for the duration of the NLO should the existing licensee cease fishing). A single licence was still issued in 2017, although all salmon were returned with the support of an Environment Agency local

		<p>conservation agreement. Anglers on the river already operate a voluntary 100% catch and release policy.</p> <p>A new reducing NLO was also introduced on the River Ribble which restricts the number of licences to a single drift net; 4 licensees continued to operate in 2017 and these licences will not be replaced as individuals leave the fishery until a single licence remains. Byelaws were also introduced restricting the total catch by all nets to 48 salmon and restricting anglers to a 2 fish per season bag limit.</p> <p>Consultations have taken place with regard to the net and rod fisheries in the Solway. A new NLO has been advertised proposing a reduction in the number of haaf net licences to 75. All licensees in this fishery, the fixed engine fishery on the River Eden and anglers fishing the rivers Eden and Border Esk would also be required to release all salmon caught.</p> <p>Mandatory catch limits remained in place for both net and rod fisheries on a number of rivers in England and Wales in 2017.</p> <p>In England the Environment Agency is supporting the Inshore Fisheries and Conservation Authorities (IFCAs) in their duty to manage the exploitation of sea fisheries resources so that these activities do not impact upon migratory salmonids. The Devon and Severn IFCA has implemented a new permitting byelaw for all of the Devon estuaries which will significantly increase the level of protection afforded to these fish. Furthermore, the new Devon and Severn IFCA byelaw has been supported by the implementation of a number of restricted netting areas on the English side of the Severn Estuary and along the Devon coast. These areas have also been established to protect migrating salmon and sea trout. The Cornwall IFCA has also implemented a byelaw to prohibit the majority of commercial sea fishing in all Cornish estuaries and is currently in the process of developing a coastal byelaw with the Environment Agency; both are intended to further protect migratory salmonids.</p> <p>In a significant new step to protect England's salmon populations under the Salmon Five Point Approach, new net and rod byelaws are proposed (Section 1.2).</p> <p>NLOs on 12 rivers in Wales were renewed, unchanged, in 2017. However, regulatory changes to protect failing</p>
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		<p>salmon stocks across Wales - including mandatory catch-and-release on all net and rod fisheries – have been proposed and consulted on in 2017/2018 and await decisions on implementation (see Section 1.2).</p> <p>Over the last 12 months, £450k of Defra funding has been invested in upgrading and improving the resilience of the Environment Agency’s salmon counter network. Work has involved upgrading data storage, cameras, computers and counter physical infrastructure. This has included getting the Lune counter back up and running after flood damage and this summer there are plans to reinstate the Bassingyll counter on the River Kent. Data and information produced by this counter network is integrated into the England and Wales stock assessments and used to drive environmental improvements.</p> <p>The objectives have been fulfilled for the planned reviews.</p>
	Current Status of Action	Ongoing
	If ‘Completed’, has the Action achieved its objective?	
Action F3:	Description of Action <i>(as submitted in the IP)</i>	<p>Implement policy on mixed stock fisheries, including:</p> <ol style="list-style-type: none"> Implement new regulatory measures for Severn Estuary (currently under consultation) and NE coast mixed stock fisheries (measures agreed). Conduct 10 year review of NLO for Anglian Coastal Fishery and amend the NLO (licence numbers) and Byelaws (fishing periods and gear) as appropriate. Conduct a review of the NE coast beach net fishery to provide a full evaluation of the potential for maintaining some nets (other than drift nets) that will conform to national policy and NASCO guidance on salmonid fishery management and amend the NLO (licence numbers) and Byelaws (fishing periods and gear) as appropriate. Conduct further genetic stock assignment studies on catches in mixed stock fisheries.
	Expected Outcome <i>(as submitted in the IP)</i>	Implementation of regulations to bring all mixed stock fisheries in line with national policy and international guidance.
	Progress on Action to Date <i>(Provide a brief overview with a quantitative measure of progress. Other material (e.g. website links) will not be evaluated.)</i>	<ol style="list-style-type: none"> Completed in 2014, as previously reported. Completed in 2015 as previously reported. The NE coast beach net fishery is included in the proposed new byelaws to protect salmon stocks in English fisheries and on the Border Esk (border river with Scotland).

		d. Results of earlier studies reported previously. No new investigations in 2017. The objectives for planned activities have been fulfilled. However, other work is still ongoing.
	Current Status of Action	Ongoing
	If 'Completed', has the Action achieved its objective?	
Action F4:	Description of Action <i>(as submitted in the IP)</i>	Joint promotion, with stakeholders, of catch and release in rod fisheries.
	Expected Outcome <i>(as submitted in the IP)</i>	Increased uptake of catch and release in rod fisheries.
	Progress on Action to Date <i>(Provide a brief overview with a quantitative measure of progress. Other material (e.g. website links) will not be evaluated.)</i>	<p>Additional restrictions have been imposed on some fisheries to increase levels of catch and release (see F2). Under the proposed new byelaws to protect salmon stocks in English fisheries and on the Border Esk, rivers with the lowest status salmon stocks will have a mandatory requirement to return all salmon caught. It is also proposed to restrict the number, size and type of hooks that can be used when fishing.</p> <p>The Atlantic Salmon Trust, FishPal and the Angling Trust have produced instructional videos entitled 'the gift' on how to play, handle and release Atlantic salmon. These are available on the Angling Trust website and on YouTube.</p> <p>In 2018, the Angling Trust will be bringing together representatives of river associations throughout England to encourage full compliance with the proposed new voluntary targets of >90% catch and release for the majority of rivers. This will also aim to provide guidance to member clubs and fisheries about the need for the majority of fish to go back, as well as advice about handling fish and using the correct equipment, including the video resource. The Environment Agency will also be promoting these messages through its extensive database of anglers.</p> <p>The catch and release message has been and continues to be promoted among anglers by NRW in Wales via a number of routes (e.g. press-releases; discussions with local fisheries groups, etc.). NRW are currently seeking to implement proposals for mandatory catch and release (with associated method controls) to protect failing salmon stocks across Wales (Section 1.2).</p> <p>Catch and release in rod fisheries for England and Wales has increased from 10% in 1993 to 83%, provisionally, in 2017; an estimated 11,174 fish released</p>
	Current Status of Action	Ongoing

	If 'Completed', has the Action achieved its objective?	
Action F5:	Description of Action <i>(as submitted in the IP)</i>	Ensure effective enforcement of fishery regulations: <ul style="list-style-type: none"> a. Continue with prevention, disruption and intervention of illegal fishing, including intelligence-led enforcement and implementation of a ban on sale of rod caught fish and a carcass tagging scheme for net caught fish. b. Review the effectiveness of fishery enforcement activities, including consistent application of a national intelligence model and best-practice in intelligence-led enforcement.
	Expected Outcome <i>(as submitted in the IP)</i>	Reduced illegal fishing and corresponding response in salmon stocks in vulnerable rivers.

<p>Progress on Action to Date <i>(Provide a brief overview with a quantitative measure of progress. Other material (e.g. website links) will not be evaluated.)</i></p>	<p>a. Prevention, disruption and intervention of illegal fishing:</p> <p>Illegal fishing continues to pose a risk to stocks across England and Wales. Intelligence-led targeted operations are carried out by the Environment Agency and Natural Resources Wales, often jointly with Inshore Fisheries and Conservation Authorities (IFCAs), the Marine Management Organisation (MMO), Welsh Government and the police.</p> <p>In Cumbria (NW England), night-time covert operations were undertaken by the Environment Agency in response to intelligence gathered by officers and reports from the public via the National Incident Reporting System (NIRS). Officers have continued to work closely with the Police, attending Rural Crime meetings and providing training to new Police recruits.</p> <p>In NE England, the Environment Agency working with the Police secured a number of cases including: three people lamping and using gaffs on the Waskerly Beck; a case of lamping on the South Tyne at Haining Burn, a cast-net on the River Wear in Durham and a set line on the Tyne.</p> <p>On the south coast in Wessex and Solent and South Downs, Environment Agency officers responded to a number of incidents. Multi-agency fish dealer checks were carried out with the IFCA, MMO and guidance was issued on the correct disposal of carcass tags. Snatching remains a concern on a number of rivers.</p> <p>In the South West, Environment Agency and IFCA officers are cross-warranted and regularly undertake boat and shore-based patrols. Officers liaise closely with angling interests attending club annual general meetings.</p> <p>During the year 2016/17 63,039 rod licences were checked and 2,330 anglers were prosecuted for rod licence offences. Each successful prosecution resulted in a total average penalty of around £281 with total fines issued totalling £ 335,886 over the 2016 to 2017 licence season</p> <p>At the start of 2017, Natural Resources Wales identified the key threats to salmon and other fish stocks in Wales, and prioritised its enforcement activities accordingly. This resulted in targeted approaches to (i) combat</p>
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illegal netting; (ii) protect spawning beds; and (iii) ensure effective regulation of licensed nets and anglers.

In June 2017, two men accused of drift netting for salmon and sea trout in the Three Rivers estuary (South Wales) in May 2016, pleaded guilty and were each fined £2,500 and ordered to pay £4,000 costs. This was a significant result for NRW. In the previous year, Welsh Government Fisheries successfully prosecuted a case for offences in the same area. As a collective, this robust enforcement action has resulted in a decline in reports of netting in this estuary. This has been corroborated by routine patrols carried out during conditions favourable for netting not detecting any signs of illegal activity.

The use of patrol boats in coastal areas in SE Wales has proved to be a significant deterrent to illegal netting activity. It is intended to extend this method of working to other parts of Wales.

Over the winter months, considerable effort was invested in surveillance of spawning tributaries. As a result, two men were reported on suspicion of using a prohibited instrument to take a salmon from a tributary of the River Dee in late November 2017. In this case, Fisheries Officers spotted a car parked near a productive spawning tributary and on searching the vehicle found a dead male salmon and a gaff. Enquiries are ongoing.

A number of Warning Letters were issued for minor breaches in licensed net fisheries during 2017, although none of the offences identified posed a risk to the salmon and sea trout being targeted. However, ensuring compliance within these fisheries will be a key component of 2018 work plans.

Occurrences of unlicensed fishing by anglers continues to be a problem across Wales, but with hotspots in the South East. In total, Officers reported 28 rod and line offences in 2017-18; in some cases additional byelaw offences had been committed.

b. Effectiveness of enforcement activities:

The Environment Agency is undertaking a review of fisheries enforcement and will be consulting on options being considered.

		For the first time, NRW in Wales is producing a National Assessment of Illegal Activity. This document will identify threats to the sustainable management of natural resources (including salmon and sea trout) and make recommendations for interventions. It will guide the work undertaken by NRW in its continued efforts to deter, prevent, detect and apprehend those committing fisheries offences. If and when the proposed C&R controls come into effect, ensuring compliance with these - in a consistent manner across Wales - will be a key priority.
	Current Status of Action	Ongoing
	If 'Completed', has the Action achieved its objective?	

3.2 Provide an update on progress against actions relating to Habitat Protection and Restoration (Section 3.4 of the Implementation Plan).

Note: The reports under 'Progress on Action to Date' should provide a brief overview with a quantitative measure of progress made. 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 H1:	Description of Action (as submitted in the IP)	Implementing Climate Change Adaptation Plans (produced by both government and private sector) and specifically: <ul style="list-style-type: none"> a) inspiring organisations to increase riparian shade over water bodies, through the 'Keeping Rivers Cool Project'; b) influencing decisions in the next round of Water Company investment plans to ensure climate resilience for both water abstractions and wastewater management, and ensuring that due regard is given to their impact on the environment; c) ensuring climate change is considered within strategic environment planning frameworks (e.g. River Basin Management Plans (RBMPs), Common Agriculture Policy (CAP) reform); d) supporting the regulation of robust thermal standards for transitional and coastal waters to manage the impact of cooling water from power stations.
	Expected Outcome (as submitted in the IP)	The overall aim is to moderate the effects of climate change in waterbodies through landscape, river flow and water level management. Targets for tree planting and fencing are being set in the demonstration catchments for the 'Keeping Rivers Cool Project'.
	Progress on Action to Date (Provide a brief overview with a quantitative measure of	a) Keeping Rivers Cool (KRC) Project:

<p><i>progress. Other material (e.g. website links) will not be evaluated.)</i></p>	<p>The Woodland Trust now leads on the KRC project, which has passed the significant milestone of planting over 100,000 trees. In 2017, 11,100 trees were planted and 5.2km of fencing erected on the Tyne and Ribble working in partnership with the local River Trusts.</p> <p>On the Test, Itchen and Avon a voluntary closure of the salmon rod fishery is in place when river temperature reaches 19°C at 09:00hrs, which leads to a number of lost fishing days each year.</p> <p>b) Water Company investment plans:</p> <p>For the next water company investment cycle (PR19), the Environment Agency has put forward proposals under the National Environment Programme for 196 new projects for principal salmon catchments and 72 projects for recovering salmon rivers. The plans are provisional at this stage with the majority being water quality driven and nine water resources driven.</p> <p>The same planning process/cycle operates in Wales. Review of the current planning cycle will conclude in 2019 and Water Companies will submit plans for the following cycle (2020-25) in September 2018.</p> <p>c) Strategic environment planning frameworks:</p> <p>In England and Wales, the 2nd cycle River Basin Management Plans (2015-2021) were published in February 2016. Implementation of the measures outlined in the plans are designed to increase resilience in the face of climate change.</p> <p>Defra are refining and updating their National Adaptation Programme to support their 25 year environment plan. The Environment Agency, in turn, will review their National Adaptation Plan, which will include actions to protect salmonids.</p> <p>As part of the Environment Agency's 5 Point Approach (Section 1.2), related to the work package considering the survival of salmon at sea, Cefas have been leading an investigation into the risks posed to salmon by various potential stressors in estuarine and nearshore coastal areas. A review of the scientific literature has been completed and a consultation exercise is underway to gather feedback from local experts about possible 'issues' in their areas. It is planned to combine these sources of information, and details of the location</p>
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		<p>and geographic extent of possible stressors, to undertake a semi-quantitative assessment of the various stressors identified. The objective is to facilitate the prioritisation of potential risks and better inform management decisions.</p> <p>In August 2017, Welsh Government published the Natural Resources Policy (NRP). This integrates a broad range of traditional policy areas (e.g. water, food and drink, farming and agriculture, forestry, waste, energy, countryside access and the environment) and identifies key challenges and opportunities for the sustainable management of natural resources across Wales (including those linked to climate change).</p> <p>To address these challenges, Natural Resources Wales will prepare Area Statements that bring together data, information and ways of engaging others to better understand the state and trends of natural resources in an area, the pressures on them, and their benefits. Area Statements aim to identify the priorities, risks and opportunities to be addressed and facilitate coordinated working to build ecosystem resilience and enhance the benefits they provide.</p> <p>d) Thermal standards:</p> <p>The Environment Agency is supporting a PhD studentship at Nottingham University investigating the impact of water-source heat pumps on thermal regimes in river systems.</p>
	Current Status of Action	Ongoing
	If Completed, has the Action achieved its objective?	
Action H2:	Description of Action <i>(as submitted in the IP)</i>	<p>Improving river connectivity through implementing the 11 RBMPs in England and Wales and specifically by:</p> <ul style="list-style-type: none"> a) taking a catchment based approach and removing or easing barriers; b) implementing new regulations enhancing powers to require fish passage; c) undertaking further research on impacts of hydropower (including cumulative effects) and taking account of best scientific advice to maintain and where possible to improve fish passage.
	Expected Outcome <i>(as submitted in the IP)</i>	a) & b) Improvements to fish movement allowing greater access throughout rivers, and more water bodies meeting Good Ecological Status/Potential.

		c) Better understanding of the potential impacts of hydropower
	<p>Progress on Action to Date <i>(Provide a brief overview with a quantitative measure of progress. Other material (e.g. website links) will not be evaluated.)</i></p>	<p>a) Removing or easing barriers:</p> <p>On England's 42 principal salmon rivers, work was undertaken on 7 barriers to fish migration during 2017, improving access for salmon to 154km of river. Rivers benefiting included the: Lune (fish pass improved with Larinier super active baffle), Dun (2 fish passes improved with Larinier super active baffles), Stour (fish pass improved), Clun (weir removed) and Test (2 weirs removed).</p> <p>Natural Resources Wales – working with partners - have begun a 5-year programme (value ~£270K per annum) to improve access and habitat for salmon as an alternative to mitigation stocking on the rivers Dee, Seiont, Mawddach, Cleddau, Twyi, Taff and Wye (see Section 3.3). Recent works have included; (i) use of 400 tonnes of gravel and low head weirs to provide additional spawning habitat for salmon on the Tryweryn – a heavily regulated tributary of the Dee; also habitat improvement works on the neighbouring tributaries Mynach and Meloch; (ii) modifications to improve cover and facilitate fish passage at three boulder weirs on the Seiont and (iii) creation of a rocky ramp to ease fish passage on the Gwynant, a tributary of the Mawddach.</p> <p>Other works to improve fish passage have included: (i) weir works on the Sawdde catchment (Tywi); (ii) installation of a Larinier fish pass on the lower Twrch (Cothi) and (iii) a number of technical fish easements (e.g. Cothi, Pelenna, Neath, Vyrnwy and Clwyd).</p> <p>b) New fish passage regulations:</p> <p>Defra is developing proposals for new regulations enhancing powers to require fish passage and screening improvements in England.</p> <p>c) Research on hydropower:</p> <p>A research fellow funded by National Environmental Research Council (NERC) and the Environment Agency has published two new journal papers and two science summaries on hydropower:</p> <ol style="list-style-type: none"> 1. Orr, H. and Bilotta, G. (2017) Evidence Project Summary: Effects of run-of-river hydroelectric power schemes on small in-stream animals.

		<ol style="list-style-type: none"> 2. Bilotta, G., Burnside, N., Turley, M., Gray, J. and Orr, H. (2017) The effects of run-of-river hydroelectric power schemes on invertebrate community composition in temperate streams and rivers PLoS ONE, 12 (2). ISSN 1932-6203. 3. Orr, H. and Bilotta, G. (2016) Evidence Project Summary: Effects of run-of-river hydroelectric power schemes on fish. 4. Bilotta, G., Burnside, N., Gray, J. and Orr, H. (2016) The effects of run-of-river hydroelectric power schemes on fish community composition in temperate streams and rivers PLoS ONE, 11 (5). ISSN 1932-6203. <p>A PhD at the University of Southampton in the Faculty of Engineering and the Environment is being undertaken to look at secondary effects of small-scale hydropower on salmonid migration. Currently the work is focusing on delay to smolts during downward migration at Archimedes screw turbines and potentially it will look at acoustic impacts in future. It is due to complete in September 2020 and is funded by The Engineering and Physical Sciences Research Council (EPSRC), The Natural Environment Research Council (NERC) and Fishtek.</p> <p>During April 2017, a collaborative research project between Cefas and Natural Resources Wales investigated smolt movements in relation to a hydropower scheme at Radyr Weir on the River Taff. However, mechanical problems resulted in the turbines not being operated during the smolt run. The study is to be repeated in April/May 2018 when smolts will be trapped and tagged upstream of the hydropower scheme. This is expected to provide a more robust determination of the impact of the scheme on the behaviour and survival of wild smolts.</p>
	Current Status of Action	Ongoing
	If Completed, has the Action achieved its objective?	
Action H3:	Description of Action (as submitted in the IP)	Provision of appropriate river flows by: <ol style="list-style-type: none"> a) Implementing the 11 RBMPs and the Restoring Sustainable Abstraction (RSA) programme (see: http://www.environment-agency.gov.uk/business/topics/water/32026.aspx),

		<p>taking a catchment-based approach; and</p> <p>b) Taking forward the Water Bill.</p>
	<p>Expected Outcome <i>(as submitted in the IP)</i></p>	<ul style="list-style-type: none"> • Water bodies do not deteriorate from their current status; and • by 2027, provision of flows to support Good Ecological Status/Potential or any other alternative WFD objective set within the overall context of affordability and benefits to society.
		<p>a) RBMPs and Restoring Sustainable Abstraction (RSA) programme:</p> <p>Since 2008, the RSA programme has changed 274 unsustainable abstraction licences preventing damage (or the risk of damage) by returning approximately 30.5 million cubic meters of water to the environment. 82 of these licences were on England’s 42 principal salmon rivers.</p> <p>A remaining 153 licences will be modified under the RSA programme by 2020; 15 of these licences relate to salmon rivers.</p> <p>In addition to the above, the Environment Agency is working to recover unsustainable abstraction where it exists, utilising a range of policy mechanisms provided by government, including: addressing Serious Damage, recovering unused licences and ensuring no deterioration at licence renewals.</p> <p>The RSA programme will prevent damage (or the risk of damage) to 12 Habitats Directive sites in Wales. Over 40 abstraction licences have been modified or revoked in Wales. Licence variations have included adding hands-off flow conditions, requirements for fish screens and reducing abstraction volumes. These changes will benefit the following principal salmon rivers: Dee, Wye, Usk, Teifi, Tywi, Gwyrfai and Cleddau. Variations to a small number of licences are still being progressed to meet the requirements of the Habitats Directive which should be modified under the RSA programme by 2020.</p> <p>b) Taking forward the Water Bill:</p> <p>The Water Bill action is being taken forward in England through the implementation of the abstraction plan – update given below.</p>

		<p>The New Authorisations initiative will remove current exemptions to bring remaining significant abstractions into regulation in England and Wales. This programme was implemented on 1st January 2018 and will mean that approximately 5,000 previously exempt and currently unlicensed activities such as trickle irrigation, de-watering in quarries, Canal and Rivers Trust water transfers and Inland Drainage Board abstractions will be brought into regulation by 2022.</p> <p>Update for England: On Friday 15 December 2017, the Environment Agency launched a joint Abstraction Plan with Defra. The plan explains how the Environment Agency will reform and modernise abstraction management in England over the coming years. It sets out how the Environment Agency will make full use of existing regulatory powers to address unsustainable abstraction, improve access to water and modernise the abstraction service. It also signals a change in focus, putting catchments at the heart of what the Environment Agency are doing.</p> <p>Trials in 4 initial priority catchments will commence from April 2018, increasing to 10 over the coming months. The Environment Agency have committed to report progress to the UK Parliament in May 2019, and will update 10 abstraction licensing strategies by 2021.</p> <p>The Environment Agency will also be modernising the abstraction service at the same time which will allow abstractors to;</p> <ul style="list-style-type: none"> • View, apply for, and amend licences online; • Report water usage more efficiently; • Access up to date information on water availability to help manage abstraction; • Provide the platform to enable more water rights to be traded. <p>By 2020, Water Resources will be moved into Environmental Permitting Regulations to provide a more modern and consistent legal framework.</p> <p>Update for Wales: In 2013, the ‘Making the most of every drop’, a joint consultation undertaken by the Welsh Government and Defra, was launched. Welsh Government published their response to the consultation in 2016. Since then, Welsh Government continued to work with Defra to identify whether new primary legislation was required for England and Wales. However, at present there are unlikely to be any</p>
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		<p>opportunities for a joint Bill. In June 2017, the Welsh Government's 'Taking Forward Wales' Sustainable Management of Natural Resources' consultation sought views on whether the abstraction reform consulted upon in the 'Making the most of every drop' consultation should apply on a Wales only basis. The Welsh Government are now considering those responses. Welsh Government propose to continue to work with Natural Resources Wales, Defra and the Environment Agency to use the powers in the Water Act 2014 to bring water abstraction activities into the Environmental Permitting Regulations.</p> <p>Natural Resources Wales is in the process of modernising the information and communication technologies that support the abstraction management service in Wales. Improvements will include the ability to apply for abstraction and impoundment licences; view licence information; submit water returns information and request licence amendments all online. These improvements will be delivered incrementally over the next 2 years.</p>
	Current Status of Action	Ongoing
	If Completed, has the Action achieved its objective?	
Action H4:	Description of Action <i>(as submitted in the IP)</i>	<p>Taking an integrated catchment management approach to reduce the impact of land use, through implementing the 11 RBMPS and also, specifically:</p> <ul style="list-style-type: none"> a) Investigating the sources of sediment (including catchment walkovers) to help identify the most appropriate remedial action; b) Increasing participation of stakeholders in the decision making process; c) Providing advice to land managers through projects such as Catchment Sensitive Farming and providing advice and support to other relevant stakeholders (e.g. to control erosion from road verges); d) Encouraging uptake of incentive schemes to promote better land management (e.g. agri-environment schemes); e) Regulation (e.g. cross-compliance), pollution prevention campaigns and improving soil protection; f) Reviewing Good Agricultural and Environmental Condition; and

		g) Making effective use of local partnerships and voluntary schemes identified in the ‘Significant Water Management Issues’ and ‘Living Waters for Wales’ programmes as part of the WFD planning process.
	Expected Outcome <i>(as submitted in the IP)</i>	Improvements to land management practices and more water bodies meeting Good Ecological Status/Potential, as well as Natura 2000 Protected Area objectives within the overall context of affordability and benefits to society.

<p>Progress on Action to Date <i>(Provide a brief overview with a quantitative measure of progress. Other material (e.g. website links) will not be evaluated.)</i></p>	<p>a) Sources of sediment:</p> <p>Designations under the Water Framework Directive for England’s 42 principal salmon catchments place the highest elemental failure as phosphate, followed by macrophytes, fish, invertebrates, dissolved oxygen, hydrological regime, ammonia and metals. Current principal salmon water body status (2016) is: 25% Good/High, 54% Moderate, 19% Poor, 2% Bad.</p> <p>In Wales, WFD status of Water Bodies has improved from 7% meeting good or better status in the first (2009-2015) cycle of River Basin Management Plans (RBMPs) to 37% at the start of the second cycle (minimum target of 42% by 2021). The top three main reasons for not achieving good status are physical modifications, pollution from rural areas and pollution from sewage and waste water.</p> <p>The ‘Welsh Government Wales Land Management Forum’ has been established to improve advice and guidance on diffuse pollution. The group is chaired by Natural Resources Wales and comprises a wide range of sector representatives. Its focus is on reducing agricultural pollution in up to 28 water bodies at greatest risk - as identified through the Water Framework Directive. Evidence from both NRW and Dwr Cymru Welsh Water is being used to develop and deliver a targeted framework of information provision and support for farmers with the assistance of Farming and Forestry Connect. At the same time, a national campaign aims to encourage all farmers to think about planning and investment to prevent pollution from happening.</p> <p>Welsh Government has also recently committed to funding a 3-year developmental project known as ‘Living Wales’ which will use satellite imagery to monitor habitat structure and function at a landscape scale in near real time by mapping a suite of biophysical variables such as habitat structure, productivity, leaf area index and soil moisture.</p> <p>This information will be used by partner organisations (e.g. Natural Resources Wales and Aberystwyth University) to identify ‘hot spot’ locations for potential soil / water run-off within a catchment, and in doing so should lead to better targeting of resources and more innovative and effective interventions to address problem areas.</p>
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		<p>b) & c) Stakeholder engagement:</p> <p>In 2017, 36,148 individuals have engaged with the catchment based approach (CaBA) nationwide including: NGOs, Water Companies, Local Authorities, Government Agencies, Landowners, Angling Clubs, Farmer Representative Bodies, Academia and Local Businesses. For every £1 invested directly by government, CaBA partnerships have raised £8.63 from non-governmental funders. Of 102 partnerships, 52% have worked with farmers.</p> <p>Natural England and the Environment Agency are updating 36 Diffuse Water Pollution plans (DWPPs) that cover 36 Natura 2000 sites, 19 RAMSAR sites and 56 SSSIs across England.</p> <p>The successful delivery of RBMPs in Wales – and associated improvements in the quality of the water environment - require effective working with Liaison Panels, partners and stakeholders. Natural Resources Wales (NRW) provides a publicly available on-line mapping facility (‘Water Watch Wales’) which allows users to identify the WFD status of Water Bodies and reasons for not achieving good status, as well as share information on project activities by external partners.</p> <p>For 2017/18, Welsh Government provided £80K of funding to deliver WFD improvements. This funding – managed by NRW – has been allocated to the following 5 projects, put forward and agreed by the River Basin District Liaison Panels:</p> <ol style="list-style-type: none"> 1. Septic Tanks Guidance 2. Diffuse pollution work - West Wales 3. Healthy Rivers Project - Ebbw, Sirhowy, Rhymney 4. Wyche and Worthenbury - agriculture interventions: Diffuse pollution work – Dee 5. Slurry Management Project - Secondary benefits to an existing project <p>The Environment Agency have continued to fund the work of two Fishery Management Advisers (FMAs), based with the Angling Trust for a further two years. The FMAs continue to advise clubs and fishery owners about techniques for managing predation by fish-eating birds, including measures to protect parr and smolts. They have also contributed to licence application processes and the successful implementation of a number of area-based licences to coordinate management activities at a catchment scale. These now</p>
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include the Rivers Itchen, Test, Exe, Axe, Eden, Ribble, Cumbrian Derwent, Hampshire Avon and talks are progressing on the River Frome.

A multidisciplinary expert group on small water bodies (SWBs) has been established by Cefas to bring together scientists, managers and stakeholders with the following objectives:

- develop and maintain a network of scientific experts on SWBs;
- provide a forum on SWBs among experts, stakeholders and other interest groups;
- discuss emerging issues on SWBs and consider possible responses;
- review ongoing research on SWBs, identify gaps, improve coordination and collaborate in the development of new proposals;
- advise funding agencies on research needs relating to SWBs e.g. NERC Highlight Topics.

The SWBs expert group has produced a multi-disciplinary review paper, titled 'Small Water Bodies in UK and Ireland: Ecosystem function, human-generated degradation, and options for restorative action' which is near to submission to Science of the Total Environment. The manuscript aims to inform landowners, stakeholders, scientists, river catchment managers and policy makers about the issues affecting SWBs and their importance to wider catchment management.

Next steps are to develop collaborate research proposals to fill knowledge and monitoring gaps, with funding sought from across Government Departments.

d) Incentive Schemes:

Catchment Sensitive Farming (CSF) advice has now been given to 20,573 farm holdings covering an area of 3 million hectares.

CSF delivers practical solutions and targeted support to enable farmers and land managers to take voluntary action to reduce water pollution from agriculture and to protect water bodies and the environment.

From 2 April 2018 new rules for all farmers in England will be introduced to help protect water quality across the country as part of its vision for a green Brexit. It will require farmers to keep soil on the land, match nutrients to crop and soil needs, and keep livestock fertilisers and manures out of the water. The Environment Agency will roll out the rules through an advice-led approach,

		<p>working with farmers to meet the requirements before enforcement action is taken.</p> <p>The new farming rules for water are part of a package of measures to help farmers and land managers look after the environment. Around £3bn has been allocated to supporting agri-environment and woodland schemes, such as Countryside Stewardship, under Pillar 2 of the Common Agricultural Policy (CAP) between 2014 and 2020. Wildlife conservation is one of the primary goals of these schemes.</p> <p>'Glastir is the Welsh Government's sustainable land management scheme, offering financial support to farmers and land managers, and aimed at: (i) combating climate change; (ii) improving water management and (iii) maintaining and enhancing biodiversity.</p> <p>For example, Glastir Small Grant applications totalling £23K along with partnership funding of £36K (NRW, United Utilities, Dŵr Cymru Welsh Water, Woodland rust and in partnership with Welsh Dee Trust, Dee Valley Water and Reaseheath College) is being used to deliver farm improvements and tackle issues of diffuse pollution in the Emerald Brook catchment (a tributary of the River Dee).</p> <p>A four-year rolling cycle to monitor and evaluate the environmental benefits of Glastir across Wales began in 2012. This focusses on six outcomes – including 'improving water quality and managing water resources' – with results reported on the Glastir web page.</p> <p>e) Regulation, pollution prevention and soil protection:</p> <p>The Environment Agency and NRW use targeted advice-led regulation to work with farmers to help them address impacts on the environment.</p> <p>The most recent information on pollution incidents in England is detailed in the report: <i>Regulating for people, the environment and growth: 2016 summary</i>. The number of serious pollution incidents (categories 1 and 2) in 2016 was 508, up 2% from 2015. Over half of these were caused by non-permitted activities. We were unable to identify a source for 67 serious pollution incidents. Although down 20% compared to 2015, agriculture caused the highest number of serious incidents (70) among non-permitted sectors (and highest overall). Water companies caused the most incidents from permitted sites (57 incidents). Waste management activities, collectively: the waste</p>
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treatment, biowaste, landfill and incineration with energy recovery sectors, caused 80 serious incidents.

f) Good Agricultural and Environmental Condition (GAEC):

For GAEC 1 – Establishment of buffer strips along watercourses, from 1 January 2017, was changed such that land parcels of 2 hectares or less next to watercourses will have to comply with all the rules to protect watercourses against pollution and run-off from agricultural sources. Therefore, for all agricultural land within 2 metres of the centre of a watercourse or field ditch and from the edge of the watercourse or field ditch to 1 metre on the landward side of the top of the bank both of the following apply: landowners must take all reasonable steps to maintain a green cover and they must not cultivate or apply fertilisers or pesticides.

g) Local partnerships:

The Rivers Trust is the umbrella body of the rivers trust movement in England, Wales and all Ireland. There are over 60 rivers trusts, working on practical projects to improve river catchments. Collectively the Rivers Trust movement employs more than 250 technical professionals and has a combined annual income of more than £25M. Rivers Trusts are particularly active in the 42 principal salmon rivers delivering significant programmes of work to monitor, protect and restore salmon and sea trout populations.

An infographic summarising some of the rivers trust work delivered in 2016 is provided below.



Through the ‘Your Fisheries’ initiative, The Rivers Trust in partnership with the Environment Agency and Angling Trust have developed a tool for fisheries management at the catchment scale. ‘Your Fisheries’ has been piloted in several catchments and provides an opportunity to bring together government and non-

		<p>government fisheries data and to develop projects to address fisheries issues.</p> <p>The Rivers Trust has been an active partner in the Salmon 5 Point Approach, focusing mainly on water quality and barriers to fish migration; and they have been appointed Dam Removal Europe coordinator for North West Europe.</p> <p>Defra, the Environment Agency and Natural England and the Rural Payments Agency have recently launched a new scheme under the Rural Development Programme to fund improvements to the water environment. The Water Environment Grant scheme will provide £27m in funding over the next three years. Funding will be used to restore local eco-systems. It will also deliver substantial benefits to people and the environment.</p> <p>Salmon and Trout Conservation UK are continuing their investigation into the state of fly life through their Riverfly Census, which is scheduled to report on the 3-year research study in 2018. The Census results have already shown a concerning impact on the upper reaches of several important salmon rivers from sediment and phosphate, and the species-level invertebrate data is also identifying areas of chemical pollution. S&TC was also an author of a paper published in 2017 showing that sediment and phosphate directly kill mayfly species eggs, giving a potential indicator as to why some fly life populations, vital food for juvenile salmon, are in decline. This could help better target measures to address diffuse pollution.</p> <p>In addition to the examples of partnership working identified above, WFD updates in Wales are provided in a twice yearly external newsletter 'Living Waters for Wales' (available on-line).</p>
	Current Status of Action	Ongoing
	If Completed, has the Action achieved its objective?	

3.3 Provide an update on progress against actions relating to Aquaculture, Introductions and Transfers and Transgenics (Section 4.8 of the Implementation Plan).

Note: The reports under 'Progress on Action to Date' should provide a brief overview with a quantitative measure of progress made. 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 A1:	Description of Action (as submitted in the IP)	a) Regulate salmonid stocking in English and Welsh rivers by implementing and enforcing existing and proposed new (anticipated Oct 2013) live fish
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		<p>movements legislation. For rivers, the scheme will include limiting stock levels and preserving the genetic integrity of stocked fish. Out of catchment introductions of fish will only be permitted from sites authorised and regulated under the Aquatic Animal Health (England and Wales) Regulations 2009.</p> <p>b) Ongoing review of evidence about impacts of stocking will be used to update the stocking guidance and procedures underpinning existing and proposed new regulations, and to influence fisheries and conservation organisations.</p>
	Expected Outcome <i>(as submitted in the IP)</i>	Stocking operations are more focused, appropriate and lower risk leading to protected genetic integrity and reduced risks from inadvertent introduction of diseases, non-native invasive species, etc.
	Progress on Action to Date <i>(Provide a brief overview with a quantitative measure of progress. Other material (e.g. website links) will not be evaluated.)</i>	<p>a) Regulate salmonid stocking: As reported in 2016, following consultation with stakeholders, the Environment Agency in England will not consent any further stocking of salmon into rivers that are Special Areas of Conservation (SACs) where salmon is a qualifying feature, or into rivers that are Sites of Special Scientific Interest (SSSIs).</p> <p>b) Review of evidence on stocking: Following a review of the evidence, Natural Resources Wales ended the stocking of salmon (and sea trout) into Welsh rivers (as reported in 2015). Stocking is now being replaced by alternative means of delivering benefit for fish and fisheries, including work to resolve barriers to migration and sub-optimum habitats (See Section 3.2).</p>
	Current Status of Action	Ongoing
	If Completed, has the Action achieved its objective?	
Action A2:	Description of Action <i>(as submitted in the IP)</i>	<p>a) Implementing and enforcing existing and proposed new live fish movement regulations, making sure fish movements are screened to prevent spread of non-native fish and diseases. Movements of fish from waters known to contain high-risk invasive species will be prohibited. Audit selected high-risk movements to ensure compliance.</p> <p>b) Implementing European Council Regulation No. 708/2007 concerning Use of Alien and Locally Absent Species in Aquaculture and the Alien and Locally Absent Species in Aquaculture (England</p>

		<p>and Wales) Regulations 2011.</p> <p>c) Rapid and robust application of fish movement regulations to prevent the spread of new and/or emerging parasite or disease threats.</p> <p>d) Making sure in-river operations comply with biosecurity protocols.</p> <p>e) Encouraging anglers and other water users to remain vigilant to the risk of non-native species and pathogens, to report sightings and to take biosecurity measures (the 'Check, Clean, Dry' campaign; see http://www.environment-agency.gov.uk/homeandleisure/wildlife/129217.aspx)</p> <p>f) Working with fishery owners to eradicate non-native fish at high-risk sites and/or applying Import of Live Fish Act (IFLA) or new fish movement regulations enforcement to take action where site owners are not compliant.</p>
	<p>Expected Outcome (as submitted in the IP)</p>	<ul style="list-style-type: none"> • Containment and/or eradication of undesirable non-native fish species. • Regulation of other fish species. • Prevention of <i>G. salaris</i> and other parasites and diseases occurring in England and Wales.
	<p>Progress on Action to Date (Provide a brief overview with a quantitative measure of progress. Other material (e.g. website links) will not be evaluated.)</p>	<p>a) Live fish movement regulations:</p> <p>Following the implementation of the Keeping and Introduction of Fish Regulations in 2015 our focus has been on issuing all fisheries and fish suppliers with relevant permits.</p> <p>b) EU Regulations:</p> <p>Cefas remain vigilant to any potential threat or issue to salmon stocks. A precautionary approach is taken with regard to any proposals to farm non-native species where these might pose a risk to native salmonids.</p> <p>c) Preventing the spread of parasite or disease threats:</p> <p>In response to increased reports of <i>Saprolegnia</i> infections in salmon (and sea trout), the Environment Agency and Natural Resources Wales have continued to monitor disease problems across England and Wales. This has included ongoing assessments of fungal infections in all our major salmon rivers and assessments of environmental variables that may be driving this disease. Nationally, 2017 was a relatively</p>

quiet year for *Saprolegnia*, although the number of reports of the disease were higher for some rivers than in 2016. In most cases, the reports received were within expected “natural” levels and were not cause for serious concern. An exception is the south-west of England, where higher and more persistent levels of *Saprolegnia* have been recorded in recent years.

The Environment Agency and Natural Resources Wales is continuing to support a three-year study into the epidemiology of *Saprolegnia* in wild salmonids in collaboration with Cardiff University.

The Environment Agency and Natural Resources Wales continue to investigate non-native parasites and emerging disease threats to wild fish populations. This includes work on Red Vent Syndrome (RVS), a disease that has seen wild salmon returning to rivers with red and bleeding vents. This disease was first observed in 2004 through our index river monitoring and continues to be detected annually in a proportion of the returning fish at monitored sites.

The parasite *Sphaerothecum destruens*, also known as the Rosette Agent, has also been identified as a potential risk to the health of wild migratory salmonids in England and Wales. Eradications of the Topmouth gudgeon, *Pseudorasbora parva*, are helping limit the spread of *S. destruens*, which is known to be carried by this non-native fish. Work is underway to establish the pathogenicity of this parasite with no evidence of disease and no further controls justified at this time.

To satisfy Article 43 of Directive 2006/88/EC, sampling of species susceptible to *Gyrodactylus salaris* is required as part of the criteria to maintain national control measures for the freedom of the parasite in England and Wales. Due to the low number of salmon farms in England and Wales, samples are obtained from wild salmonid populations. Monitoring is conducted through a rolling programme of sampling covering all river catchments which contain salmon. Each of the catchments is sampled approximately every five years, where possible. Occasionally investigative samples have also been taken (e.g. in response to low juvenile densities in 2016). Since 2007, 95 samples across 46 catchments have been taken. In this time, *G. salaris* has not been found in any of the samples. In 2016 and 2017, a novel non-destructive method for sampling wild salmonids was introduced and a request will be made to

include this in the OIE manual of diagnostic tests for aquatic animals. In 2017, laboratory identification methods changed from visual identification of species based on morphological characteristics of a subset of the gyrodactylids recovered, to PCR of all gyrodactylids recovered (i.e. analysis based on amplification of DNA). The use of PCR allows unambiguous identification of all gyrodactylid species within the samples.

d) Compliance with biosecurity protocols:

Biosecurity is a priority across Defra (Department for Environment, Food and Rural Affairs). In the Great Britain Invasive Non-native Species Strategy 2015-20, the overarching aim is to minimise the risk posed by, and reduce the negative impacts of, invasive non-native species in Great Britain. It follows a hierarchical approach stressing prevention, followed by early detection and rapid response and finally long-term management and control. Key strands of work include: biosecurity and prevention campaigns, guidance and codes of practice; Pathway Action Plans; Be Plant Wise; and Check, Clean, Dry.

e) Communication with anglers and water users:

To improve awareness of invasive species and the importance of biosecurity, the GB Non-Native Species Secretariat organised Invasive Species Week 2017, which took place between 27th March and the 2nd April and involved 340 organisations.

f) Eradicating non-native fish at high-risk sites:

In 2017, approximately 200 pink salmon were captured in the English NE coast net fishery and anglers also reported the capture of pink salmon in the rivers Frome, Hampshire Avon, Tyne, Coquet, Wear, Hull and Duddon. Captures of pink salmon were widely reported from around the north Atlantic and are believed to originate from populations established in northern parts of the Russian Federation and Norway. Post-mortem analysis of 9 pink salmon indicated that all samples were negative for the viruses: Infectious Haematopoietic Necrosis (IHN), Viral Haemorrhagic Septicaemia (VHS), Infectious Salmon Anaemia virus (ISA) and Infectious Pancreatic Necrosis (IPN).

		<p>The five-year WFD funded, piscicide based programme instigated in 2011-2012 to eradicate the highly invasive topmouth gudgeon (<i>Pseudorasbora parva</i>) has been implemented and 25 sites have been treated. Three further populations have been identified and will be treated in due course. Salmon catchments protected through this programme in 2017 include the Rivers Test and Severn. One site in the Test catchment had 42 ponds that required treatment. The Environment Agency are continuing to work closely with Welsh Government & Natural Resource Wales with the aim of total eradication of the species from England and Wales</p> <p>Recent investigations by Cefas have confirmed the utility of environmental DNA (eDNA) in detecting the presence of topmouth gudgeon at field sites. This new technique is expected to facilitate management of this invasive species by providing a cost-effective alternative to conventional sampling processes such as repeat netting of a site. The technique has applications in both investigating the presence of the species and in confirming that eradication procedures have been successful.</p>
	Current Status of Action	Ongoing
	If Completed, has the Action achieved its objective?	
Action A3:	Description of Action (as submitted in the IP)	<p>a) On-going application of discharge controls and EU restrictions on prohibited substances;</p> <p>b) Research on effects of contaminants from fish farms on wild salmon populations.</p>
	Expected Outcome (as submitted in the IP)	Improved water quality and compliance with WFD GES/GEP status.
	Progress on Action to Date (Provide a brief overview with a quantitative measure of progress. Other material (e.g. website links) will not be evaluated.)	<p>a) Discharge controls and prohibited substances:</p> <p>To meet requirements for protected areas and ‘no deterioration’ under the WFD, the Water Companies’ National Environment Programme 2016-2021 is scheduled to deliver 42 improvements, 160 investigations, 15 catchment schemes and 10 water resource schemes on England’s 42 principal salmon rivers.</p> <p>In 2017, for England’s 42 principal salmon rivers, the Environment Agency recorded that 327 km of river had been improved. Of the 132 schemes delivered, pressures addressed were: 58 diffuse pollution, 42 physical modification, 20 point source pollution, 5 flow, 1 abstraction and 6 other. An example of a project is the Test and Itchen River Restoration Strategy, which</p>

		<p>improved 2km of habitat in 2017 through removing two impounding structures and enhancing spawning habitat.</p> <p>Natural Resources Wales have produced the equivalent statistics for Wales along with other information relating to the 2009-2015 and 2015-2021 River Basin Management Planning cycles (further information available on-line).</p> <p>b) Contaminants from fish farms:</p> <p>There have been no new investigations on this issue in 2017. A number of studies have previously been completed that have looked at the effects of trout farm effluents on various life stages of Atlantic salmon and brown trout. These have indicated possible impacts on:</p> <ul style="list-style-type: none"> • the reproductive physiology of mature fish; • the quality of spawning gravels immediately downstream of farm; • egg development and survival; • the structure of the gills and kidney; and • osmoregulation, blood chemistry and the ability of salmon smolts to survive in seawater. <p>Different effects, however, have been observed in different situations, and no component of the effluent has yet been identified as responsible for specific impacts, so the implications for wild salmonid populations remain unclear.</p>
	Current Status of Action	Ongoing
	If Completed, has the Action achieved its objective?	

4: Additional information required under the Convention	
4.1	Details of any laws, regulations and programmes that have been adopted or repealed since the last notification.
	Various new NLOs and byelaws, as specified in Section 2.
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.
	The proposed new fishery regulatory initiatives in both England & Wales are scheduled to be implemented during 2018 and 2019 – see section 1.2
4.3	Details of any new actions to prohibit fishing for salmon beyond 12 nautical miles.
	None
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.
	None

4.5 Details of any actions taken to implement regulatory measures under Article 13 of the Convention including imposition of adequate penalties for violations.

None