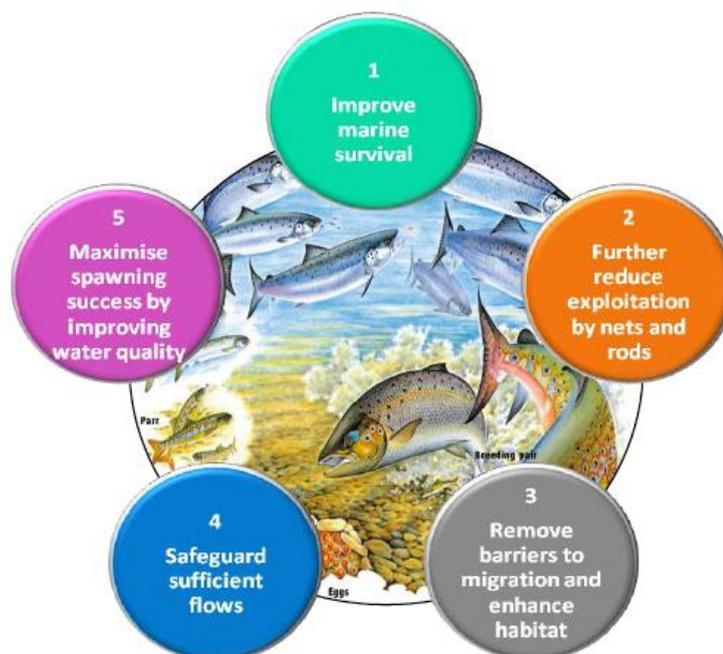


## 2.1 The Salmon Five Point Approach

- 2.1.1 Salmon are an iconic indicator of healthy river systems and are protected at key conservation sites around the United Kingdom e.g. the Hampshire Avon and River Eden in Cumbria. They provide enjoyment for those that fish for them, income to the recreational and commercial fisheries that they support and are a valued part of England's 'natural capital'. Salmon fisheries are estimated to support 900 full time jobs and provide £22million in household income (Environment Agency: Economic evaluation of inland fisheries 2009 – SCHO0109BPGI-E-P), which is particularly important for the rural communities and economies where salmon fisheries exist.
- 2.1.2 The 2014 salmon stock assessment for England was the worst on record with many rivers failing to achieve their minimum safe levels (Conservation Limit). To address this situation, the Environment Agency convened a Salmon Summit in November 2015 which brought together government, salmon net and rod fishery organisations and salmon conservation organisations. The Summit recognised the need for concerted action, taking advantage of improved opportunities for working in partnership and working across all parts of the Environment Agency, Department for Environment, Food and Rural Affairs, its agencies and stakeholders.
- 2.1.3 Following the Summit, the Environment Agency and its partners<sup>1</sup> developed the Salmon Five Point Approach (Figure 1) with the aim of stabilising and recovering salmon stocks to ensure their future sustainability. The Approach was launched in 2016 and sets out high level actions to tackle the factors that affect salmon throughout their whole life cycle. This includes tackling water quality and water flow issues, barriers to migration and impacts in the marine environment, as well as further reducing exploitation by salmon fisheries. Further detail on the Approach and all its actions is available at: <http://bit.ly/Salmon5PointApproach>

**Figure 1: Five Point Approach to conserve and enhance England's salmon**



### populations

<sup>1</sup> The Salmon Five Point Approach Partners: Environment Agency, Department for Environment, Food and Rural Affairs, Centre for Environment, Fisheries and Aquaculture Science, Angling Trust, The Rivers Trust, Atlantic Salmon Trust, Salmon and Trout Conservation UK, Wild Trout Trust and Institute of Fisheries Management.

2.1.4 Since the start of the Salmon Five Point Approach the outcomes that have been achieved for salmon by a range of organisations include:

- work completed on 12 barriers to fish migration, improving access for salmon to 555km of river
- 51 projects to improve salmon habitat
- 62 schemes to improve water quality, including reductions in sediment and phosphate inputs
- 1 scheme completed to reduce water abstraction and improve river flow
- instructional videos on catch-and-release best practice produced and promoted
- work with Inshore Fisheries and Conservation Authorities to ensure their fisheries byelaws also protect salmon and sea trout
- ensuring that low flows are addressed as part of the Price Review 2019 process with water companies

## 2.2 The current state of salmon stocks

2.2.1 The 2014 national salmon stock assessment in England indicated that salmon stocks in many rivers across England had failed to meet their minimum safe levels (Conservation Limit) and provided significant cause for concern. The 2015 salmon stock assessment has also indicated a similar status and is available at:

<https://www.gov.uk/government/publications/salmon-stocks-and-fisheries-in-england-and-wales-in-2015>. The 2016 report, which will be published shortly, shows many salmon stocks continuing to be below safe levels.

2.2.2 A summary of the current state of salmon stocks (2016) is provided here and is supported by the evidence set out in Appendix 2:

- The estimated abundance of salmon at sea which originate from stocks in England and Wales has reduced by around 50% since the early 1970s. There has also been a recent marked decline in the abundance of grilse and an increase in numbers of multi sea winter fish.
- This recent increase in multi sea winter fish numbers is expected to have a disproportionate effect on egg deposition, given the substantially higher fecundity of these larger fish. However, when taken with the decline in grilse numbers and size, this poses risks to the sustainability of salmon stocks in the future. As reductions in the survival of returning multi sea winter salmon would result in proportionally greater reductions in egg deposition.
- The available estimates of marine survival for stocks in the UK and Ireland show a marked decline in marine survival around 1990 and persistent low levels of marine survival since. Similar patterns of reduced levels of marine survival in the last 20-30 years are evident for stocks throughout the north-east Atlantic. The reduction in the survival rate of salmon in the north-east Atlantic means that the same number of smolts leaving English rivers now will produce many fewer returning salmon than would have been the case in the 1980s.
- Electronic fish counters or upstream trap data from English and Welsh rivers show variable performance between the stocks on these rivers. Some runs have varied considerably year on year without any discernible trend, and others indicate an increasing trend over recent years. However, for a number of the rivers, there have been declines in salmon numbers in recent years. Counter and trap data from the River Tamar shows a reducing trend in grilse length and weight, and therefore the number of eggs they carry. This, if seen across the whole grilse stock, will have a compounding effect on the lower egg numbers produced due to reducing grilse

numbers. Data from the Tamar also shows a reduction in the percentage of two sea winter salmon that run early in the year.

- The latest juvenile salmon assessments (2011-2016) indicate low levels of juvenile abundance across the country. There are concerns around the very low numbers of juveniles, in particular fry, recorded in many river catchments during 2016. The reduction in fry abundance is likely to result in reduced smolt numbers in 2018. There is already evidence of reduced smolt output for the River Frome in 2017, where the majority of smolts migrate after one year in freshwater.
- The national salmon stock assessment shows that, although some of the worst performing rivers are improving and are predicted to continue to do so, most salmon populations have declined, in some cases severely, and are generally not predicted to improve in the next five years. Only 4 of the principal salmon rivers (projected to be 5 in 2021) currently fall within the 'Probably Not at Risk' category and none fall in the 'Not at Risk' category, therefore there are no salmon stocks that we are very certain will meet their Management Objective. The majority of salmon stocks in England fall into the 'At Risk' and 'Probably at Risk' categories and thus remain in a depleted state.
- The very low numbers of salmon fry recorded from monitoring sites in English rivers in 2016 are not taken into account by the predicted 2021 classification, as it is based on the trends and variability of returning adult numbers for the years up to, and including, the current year (in this case 2016). Therefore, unless there is an improvement in salmon survival during a later life stage, it is likely that this will lead to lower management target compliance than the data is currently predicting in 2021.
- There has been a marked decline in net catches in England and Wales over the last 15 – 20 years. This is likely a consequence of increased regulatory controls, such as reducing net limitation orders and licence buy outs, along with the reduction in salmon stocks.
- In 2016 the catch by nets and fixed engines in England increased by almost 4000 fish over 2015 catch and was 24% above the average of the previous five years. This was principally due to an increase in the catch in the North East Coast Net Fishery, which also saw an increase in the catch rate of the beach nets in 2016. This, combined with the falling catch in other parts of the country, meant that the North East Coast Net Fishery catch comprised 93% of the total net catch in England and Wales in 2016.
- Long-term trends in rod catch show a progressive decline in catch numbers from the peak in the mid-1960s to a low in the early 2000s and although catch numbers improved between 2004 and 2011 they have subsequently fallen, and are currently amongst the lowest recorded. The 2016 catch numbers saw some improvement over those in 2015, but remain 25% below the 5 year average.
- The numbers of grilse caught by anglers (6256 in 2016) has fallen. This, combined with an increase in the multi sea winter fish catch (8968 in 2016), has led to this stock component making up the majority of the rod catch in the last two years.
- Catches of both grilse (fish <8lb) and multi sea winter salmon (fish >8lb) peak in the autumn. Over the five years investigated (2012 – 2016) the largest fish were also caught later on in the season, in August, September and October.
- The percentage of rod caught fish of all sizes released by anglers has increased progressively since such data were first recorded in 1993 to the current high of 80%. This does however mask a large amount of variation between rivers and sizes of fish, and it includes the mandatory release of all salmon caught prior to 16 June that has been required as part of the existing National Salmon Byelaws since 1999.

- The restrictions imposed as a result of the National Salmon Byelaws, since 1999, have reduced the number of early running fish caught and killed in both net and rod fisheries across England. This has led to a direct reduction in the exploitation pressure on early returning (majority multi sea winter) salmon. However, Appendix 2 has also highlighted that:
  - both nets and rods are taking fish from stocks at the lowest classification status
  - the declining number and size of grilse make multi sea winter fish increasingly valuable to stocks
  - there is evidence from the River Tamar of a reducing trend in the percentage of multi sea winter fish running early in the year, reducing the proportion of the stock that is protected by the National Salmon Byelaws
  - the majority of multi sea winter fish are caught after 16 June and are not therefore afforded the same level of protection as provided by current National Salmon Byelaws, leaving them reliant on voluntary catch and release rates
  - there is not a large difference in the monthly average size of multi sea winter salmon caught by anglers throughout the year
  - after 16 June anglers are most likely to release large multi sea winter salmon (> 14 lb) (voluntary catch and release rate of 72%), however the release rates of grilse (< 8 lb) and smaller multi sea winter salmon (8 – 14 lb) are identical (68%)
  - a greater number of small multi-winter salmon (8 – 14 lb) are retained by anglers than either grilse (< 8 lb) or large multi sea winter salmon (> 14 lb)

2.2.3 It is apparent that the marked decline in salmon stock performance in recent years has primarily been driven by a reduction in the abundance of one sea winter grilse. This observed decline has not been offset by the improvement in multi-sea winter salmon stocks over the same period. The one sea winter stock component has supported salmon runs on many rivers since the significant decline of multi-sea winter stocks from the early to mid-1990s. There is therefore a serious risk that as the runs of salmon on each river become weaker and less predictable, they will become less resilient to other human and environmental pressures and at risk of local collapse. This assessment further highlights the need to urgently address the Five Point Approach commitments and the actions to deliver these.

2.2.4 We are seeking your views on the current state of salmon stocks, please answer **question 2.2a** if you would like to provide us with them.

## 2.3 What is causing the poor state of salmon stocks?

2.3.1 The most significant single factor impacting upon the status of salmon populations is believed to be the decline in marine survival rates i.e. the percentage of smolts migrating from freshwater which survive at sea to return and spawn in their river of origin, which have reduced markedly over the last 20 to 30 years. Reduced marine survival affects stocks across the North Atlantic and reflects changes in oceanographic conditions operating over a broad scale. Climate driven changes affecting ocean ecosystems are believed to be responsible, with probable impacts on the food available to salmon and possibly increased levels of predation. Given the obvious difficulties of influencing ocean and underlying climatic conditions, there is widespread recognition that, in the short term at least, managers need to focus on reducing the pressures on salmon in freshwater and coastal environments in order to maximise the numbers and quality of smolts leaving our rivers. These are key aims of the Salmon Five Point Approach.

- 2.3.2 The actions needed to improve salmon stocks on each river vary and these continue to be identified and tackled by catchment-based salmon conservation and fishing groups and local Environment Agency teams. The Five Point Approach actions are designed to increase the numbers and quality of smolts leaving rivers and thus maximise the number of adult salmon returning to spawn. This will be achieved by developing approaches and delivering new measures at a national scale. How increasing the number of adult salmon returning to spawn might be achieved by further reducing salmon exploitation by the regulated fisheries in England and on the Border Esk is the focus of this document.
- 2.3.3 We recognise that there is illegal exploitation and by-catch of salmon, which, in a few places, may exceed the regulated catch of licensed fisheries. We are actively reducing this by using a combination of tactics:
- targeted intelligence led enforcement
  - ensuring traceability of fish; all salmon landed by net and fixed engine fishermen fishing in England and on the Border Esk must have a carcass tag to be sold
  - a ban on sale of rod caught salmon
  - full support from existing salmon netmen which provides a self-regulating presence in the fishery
  - working with Inshore Fisheries and Conservation Authorities to reduce the likelihood of salmon by-catch in estuarine and coastal fisheries that target sea fish

## 2.4 The Five Point Approach's actions for salmon exploitation

- 2.4.1 There are 49 rivers in England that regularly support salmon, although some of the stocks are very small and support minimal catches. Of these, 42 rivers have been designated 'principal salmon rivers'.
- 2.4.2 Rod fishing for salmon is permitted on all rivers supporting salmon stocks. Net or fixed engine fisheries are licensed or authorised to operate on many of the larger rivers/estuaries. On a small number of these rivers there is currently no active fishing although the potential for fishing to resume remains if stock levels improve. There is a national policy to phase out fisheries that exploit predominantly mixed stocks of salmon and sea trout where the capacity to manage individual pressured stocks is compromised. The two remaining fisheries for salmon and/or sea trout which meet this criteria are the north-east and Anglian coastal net fisheries, and these are currently subject to phase-outs (both fisheries have reducing Net Limitation Orders to zero in place).
- 2.4.3 There have been substantial decreases in the numbers of salmon killed in England over recent years. This reflects a reduction in the numbers of net and fixed engine licences and the increasing use of catch-and-release practices in rod fisheries and some net fisheries, as well as other regulatory and voluntary measures. The exploitation of salmon by those fishing for them in England is not the dominant factor responsible for the overall decline and continued poor state of salmon stocks. However, there is a clear need to maximise the numbers of salmon surviving to spawn in the short term since further reductions in exploitation will enable more salmon to spawn successfully. Efforts will also continue to address other limiting factors, such as removing barriers to fish migration, safeguarding sufficient flows and improving water quality. With stocks at such historically low levels, every salmon able to spawn is important.
- 2.4.4 The Salmon Five Point Approach and its partners have developed three sets of initial proposals to further reduce exploitation by nets and rods. These actions are:
- i) further reduce the take of salmon by existing salmon net and fixed engine fisheries**

- ii) **increase levels of catch and release and survival in English and Border Esk rod and line salmon fisheries**
- iii) **review the existing National Salmon Byelaws for England and the Border Esk that protect spring salmon stocks**

This development has been carried out over recent months through regular meetings of the Salmon Five Point Approach partner organisations, key rod and net fishery stakeholders and representatives. Input has also been provided by Defra, Cefas, Natural England and both local and national Environment Agency staff involved in salmon management and regulation.

2.4.5 We have set out the consultation in the following sections to guide your comments and views:-

- Section 3 - Deciding which salmon stocks need further protection
- Section 4 - Review of existing measures to protect spring salmon stocks
- Section 5 - Future proposals and options for net and fixed engine fisheries
- Section 6 – Future proposals and options for rod fisheries

The existing National Salmon Byelaws provide protection to spring salmon stocks. These byelaws expire on the 31 December 2018 and their review is incorporated within this programme of work. This byelaw review is covered in Section 4, with options for net and fixed engine fisheries (Section 5) and rod fisheries (Section 6) providing possible additional measures to those set out in Section 4.

2.4.6 The options identified within each section of the consultation propose both mandatory and voluntary regulatory measures (where these may provide a viable alternative to a mandatory approach). The possible use of voluntary measures follows Government principles to reduce the regulatory burden on businesses and communities. In each section, the opportunity is provided for all consultees to provide their views on the options that have been set out, how they are delivered and to suggest alternatives.

2.4.7 Twelve rivers in England have been designated Special Areas of Conservation (SACs), under the EU Habitats Directive 92/43/EEC, with salmon as a named qualifying species. This places an additional requirement on fisheries managers and government to maintain the habitats and population status of salmon in these rivers in a favourable condition. Any proposed amendment to salmon fishery regulations for net or rod fisheries that have potential to impact upon salmon populations within these rivers will require further consideration of these statutory designations.

## 2.5 Consideration of sea trout within the Five Point Approach

2.5.1 The Salmon Five Point Approach was specifically developed to tackle issues facing English and Border Esk salmon stocks. However, many of these issues also affect sea trout stocks and we would therefore anticipate that sea trout will also benefit from a number of the actions that are undertaken to deliver the Approach's commitments to salmon.

2.5.2 In England and the Border Esk, the majority of salmon net and fixed engine fisheries also target sea trout and, in some instances, sea trout landings form the majority of the total catch. For rod fisheries, sea trout are generally targeted separately from salmon, although the similarity in angling methods for both species can lead to the unintentional capture of the non-target species.

2.5.3 In many rivers throughout England, sea trout stocks are currently not a cause for concern with regulatory controls primarily being implemented to protect the salmon stock. There may therefore be situations where it is reasonable to allow continued exploitation of sea trout, while seeking to further reduce exploitation of salmon, provided any remaining fishery

can be managed in such a way to safeguard salmon. Net and fixed engine fisheries which currently take a proportion of sea trout in the catch may therefore be allowed to continue to fish for sea trout provided this does not jeopardise the protection of salmon or the future status of sea trout stocks.

- 2.5.4 In developing options for further reducing the exploitation of salmon, the intention will be not to increase the level of sea trout exploitation in a fishery beyond the current typical level of exploitation. Sea trout stocks will be monitored and the need for any additional exploitation controls will be reviewed annually.
- 2.5.5 Sea trout have a more complex life cycle than salmon with a high proportion of adults spawning multiple times and a component of the adult population staying as resident brown trout within the river system. Although this is likely to make sea trout populations more resilient to impacts than salmon, it makes establishing their minimum safe spawning levels more complex. This is recognised internationally and a working group has recently been established within the International Council for the Exploration of the Seas (ICES) that is specifically tasked with developing biological reference points for sea trout. The information provided by this work will inform the development of our assessment approaches for sea trout stocks in the future, as well as decisions on the possible need for further controls on their exploitation.

## 2.6 Recovering salmon rivers

- 2.6.1 Rivers that are recovering from historical degradation which do not have minimum safe spawning levels set for them e.g. the Trent, Yorkshire Ouse and Mersey, are currently considered not to be able support any exploitation of salmon. It is intended to retain this position in the measures which are developed to further reduce the exploitation of salmon by nets and rods. Therefore, fisheries that exist, or may develop, on these rivers will continue to be required to operate a zero take of salmon.