



## POSITION STATEMENT ON ATLANTIC SALMON CONSERVATION AND PROTECTION<sup>1</sup>

### Atlantic salmon – the King of Fish – is close to extinction in some British rivers



The Atlantic salmon has long been revered as the ‘King of fish’. Admired for its beauty, strength, long distance migrations and determination to leap the highest waterfalls, it has long captured the imagination of naturalists and fishermen. It is also great to eat and has provided fishing – commercial and recreational – for centuries. It is and has been of great value to our culture and economy.

**But this King of fish is close to extinction in some rivers the British Isles. We implore governments, their agencies and relevant NGOs to act urgently to save this iconic fish.**

#### Value of the Atlantic salmon

- **Biodiversity:** The salmon is a flagship species – a key indicator of a good quality river environment.
- **Angling:** an Environment Agency [report](#) in 2009 calculated the overall economic loss to society from a severe decline in salmon stocks would be £350 million annually, in England and Wales alone. That figure can be trebled to £ 1 Billion to account for Scottish and Irish salmon fisheries,
- **Food:** salmon has been a great and delicious source of protein for millennia and salmon is the second most popular fish to eat in the UK; in great part due to the expansion of sea cage farming in Norway and Scotland, which ironically are damaging the local wild salmon stocks.

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<sup>1</sup> This statement is the IFM position and strategy on Atlantic salmon specifically. IFM’s broader mission , objectives and strategy are available at <https://ifm.org.uk/about/>

## Decline in the stock

It is now widely acknowledged that stocks of wild Atlantic salmon across its range are in serious decline and southern stocks, including some in North America and Europe, are threatened with extinction.

While extinction is an emotive word precisely because it is unconscionable in our great British salmon beats, that does not mean it is not possible unless the factors behind depletion are fully elucidated and measures taken to address them. King Charles has previously expressed his concern at stock status and support for action.

Long term monitoring of the survival of salmon during the marine phase of their life cycle shows a decline from around 30% returning from the sea prior to 1997 to less than 5% today.

Over a decade ago at the 'Salmon Summit' in La Rochelle, France in October 2011, international scientists confirmed that wild Atlantic salmon were dying at sea in alarming numbers. The reasons for increased marine mortality are not clear but international research into various factors contributing to this is on-going. Unfortunately, the situation is getting worse.

Further information see the [NASCO 2021 report](#).

## Outlook

Without concerted efforts to establish and address the causes of Atlantic salmon decline, this iconic and economically important animal that is a key indicator of the health of our seas and rivers could become extinct in many rivers in its southern range.

## Causes

The causes are a mixture of very different impacts acting across the diverse habitats occupied during the salmon life cycle: from eggs to smolts in rivers and estuaries, to post-smolts and adults migrating to and from their feeding grounds in the North Atlantic. Drivers include climate change and other human pressures on the environment and salmon stocks:-

### 1. Reduced survival in the marine phase

The major reductions in return from sea make marine survival the primary reason for the North Atlantic pattern of declines in Atlantic salmon abundance over the past six decades. The mechanisms are only now becoming clearer and are not yet quantified but involve variously: climate-driven changes in marine food webs affecting feeding, growth and survival of salmon, changing competitors and environmental conditions in migration pathways, and possibly changing impacts in the by-catch of fishing fleets coupled with illegal fishing. The effects act out in coastal waters, through to the distant feeding grounds of the Norwegian Sea and Greenland. Such effects on salmon abundance strongly influence the catch advice from ICES to the North Atlantic Salmon Conservation Organisation (NASCO) and understanding marine losses is the focus of much current research. A key example is the Missing Salmon Alliance's project, the [Likely Suspects Framework which](#) sets marine mortality in an ecosystem context, linking this across the full cycle, including freshwater losses, and is exploring how to integrate available data on salmon to advance the conservation of wild salmon.

## 2. Poor spawning, juvenile survival and changing growth in rivers

Reducing returns from sea directly reduces the levels of spawning in rivers; but in addition, there are many other factors reducing salmon productivity and survival: some are climate-driven, others due to river-specific pressures. Poor salmon productivity in rivers and low survival from egg to smolt is caused by:

- Barriers to migration to and from spawning and rearing habitats e.g., dams and weirs.
- Physical degradation of those habitats, e.g. in river excavations, widening and deepening channels causing loss of spawning and rearing gravels and stones and/or siltation of spawning gravels.
- Warming water temperatures that are sub-optimal for egg fertility, development and hatching, and for juvenile survival and growth, increasing with climate change. Warming autumns and winters are particularly problematic, as are high estuary temperatures causing thermal barriers to adult immigration in times of low river flows.
- Changing flow patterns, now displaying unseasonal timing and extreme droughts and floods. These lead to reduced water quantity and peak flows that hinder fish movements, compounded by barriers and intakes for water and energy supply.
- Poor water quality, from increasing urbanisation, sewage discharges, intensive farming and other land use, and acidification from non-native afforestation in poorly buffered catchments, all compounded by increasing abstraction, low flows and thermal stress, resulting in toxicity or oxygen stress to salmon and the food webs upon which they depend.
- Increased predation on salmon due to imbalances in food and prey dynamics, e.g. where birds and mammals feed excessively on smolts, especially if delayed by barriers or low flows.
- Moving to transitional (estuaries and lochs and out to near coastal waters) migration pathways: industrial and domestic pollution, thermal releases, and barriers from amenity and renewable energy infrastructure all present threats to timely passage and survival of outward moving smolts and returning adults. A special mention should be made of sea cage salmon farming which can have very serious impacts on environmental quality, smolt survival and on resident stocks where it occurs.

In addition to their abundance, the fitness of smolts emigrating to sea from freshwater may be key to their survival at sea and their fitness is shown to be directly linked to size. Faster growth due to higher river temperatures leads to smolts migrating at a younger age (often at one year instead of two), hence having lower survival chances.

### IFM position on management and protection

1. Salmon stocks are in a dire situation. Their health reflects the wider state of our aquatic ecosystems from freshwater to the high seas. Despite the global scale of climate factors at sea and in freshwaters, about which little can be done directly, **apart from vigorous lobbying of governments for meaningful global actions**, there remains a great deal that could be done with the will and the means.
2. **Intentionally killing salmon breeding stock when populations are at low levels is unwise** and advised against by NASCO. Most salmon fishing exploitation is now tightly regulated, but there are still some mixed stock fisheries. Illegal fishing still occurs. There is believed to be potentially important bycatch in non-target fisheries both in the coastal zone and ocean, and there remains the threat of resumed exploitation if there are signs of future stock recovery. It is imperative for those

- with the responsibility for the regulation and management of fisheries exploiting salmon to **consider the need for further conservation measures** to be introduced, and for those managing marine fisheries targeting other species to have regard for migrating salmon, especially in the coastal zone.
3. Programmes of **measures to address the causes of low freshwater productivity and transitional water survival** from when adult salmon return from sea to when smolts emigrate to their ocean highways, must be progressed at an **appropriate scale, effectively and urgently**. This will necessitate policy shifts and implementation regarding how we use land and water and balancing those demands against the need to restore and **protect biodiversity and ecosystem health**. At present, the scientific evidence shows that **this balance is not being achieved**. Impacts of agriculture, wastewater and development impacting water bodies **must be strategically addressed** in the context of improving biodiversity (COP15) and mitigation and adapting to climate change (COP 27).
  4. Despite the overriding importance of marine survival **there is hope**; not all rivers have suffered equally and improvements are possible. While full restoration back to the 1980s levels will not be possible given low survival at sea, any restoration will be pivotal in giving salmon a chance.
  5. **Problems** cannot be corrected until they are **identified, quantified and understood**. Therefore, research to advance the conservation of wild salmon in the coastal zone and ocean must continue apace. Stock monitoring to provide data for research across the life cycle and to assess the benefits of remediation needs to be at a level to be scientifically robust, credible and effective.

### Urgent action required

We implore the governments of the United Kingdom and Ireland, their agencies, and NGOs such as NASCO and the Atlantic Salmon Trust and others to:-

1. **Strongly enforce regulation to protect the remaining wild stock,**
2. **Urgently and fully restore river ecosystem quality to let remaining stock rear successfully,**
3. **Monitor and assess effectively to test the benefits of actions and to understand better the threats and processes involved,**
4. **Deliver meaningful climate change action.**

**Without this, salmon WILL soon become extinct in parts of the UK.**

### The Institute of Fisheries Management (IFM)

The Institute of Fisheries Management ([www.ifm.org.uk](http://www.ifm.org.uk)) aims to promote, for the benefit of biodiversity and society, the understanding of sustainable fisheries management and aquatic ecosystem protection and conservation

The IFM shall continue to develop as *the* respected and authoritative voice for fish and fisheries management and those employed in the sector.

IFM shall actively seek to influence legislation and policies for the better protection and recovery of Atlantic salmon stocks.