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D I R E C T O R A T E O F F I S H E R I E S



# Salmon and Trout Resources

- Management of Fisheries and Habitat

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## The Salmonid Resource

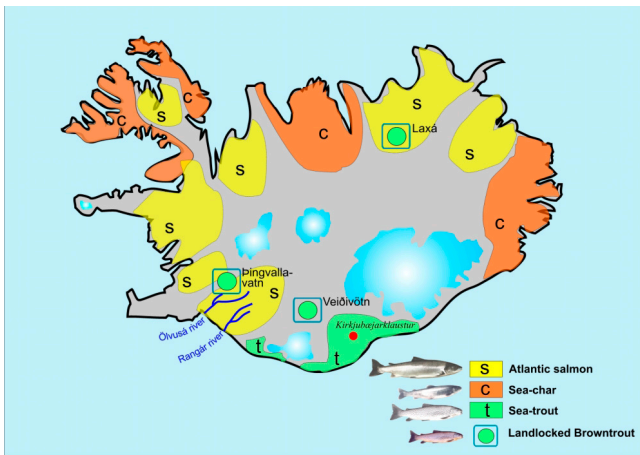
There are only 5 native species of freshwater fish in Iceland, i.e. Atlantic salmon (*Salmo salar*), Brown trout (*Salmo trutta*), Arctic charr (*Salvelinus alpinus*), European eel (*Anguilla anguilla*) and stickleback (*Gasterosteus* sp.). Rainbow trout (*Oncorhynchus mykiss*) were imported for farming in the 1950s.

Although salmonids are found in 250 rivers, the Atlantic salmon only ascend about 80 rivers, many of which are located in the western part. Other salmon angling areas are located in lowland areas of the northwestern and northeastern coasts as well as on the south coast. Icelandic salmon were traditionally caught in riverine set nets. The largest remaining salmon net-fishery occurs in the “Ölfusá” and “Þjórsá” rivers on the south coast.

Brown trout and arctic char are abundant in many lakes but a sea run variety also occurs in various areas. Sea char are

primarily found in cold streams in the mountainous areas of northwestern, northern and eastern Iceland, where salmon are practically absent (figure 1). There are popular angling areas for sea-char on Iceland’s north and northwest-coasts and considerable fishing for landlocked char in lakes all over the country. A pelagic variety of char is found in lake “Þingvallavatn”, which is a deep cold-water lake in southern Iceland (figure 1). A landlocked variety of brown trout also occurs in the lake.

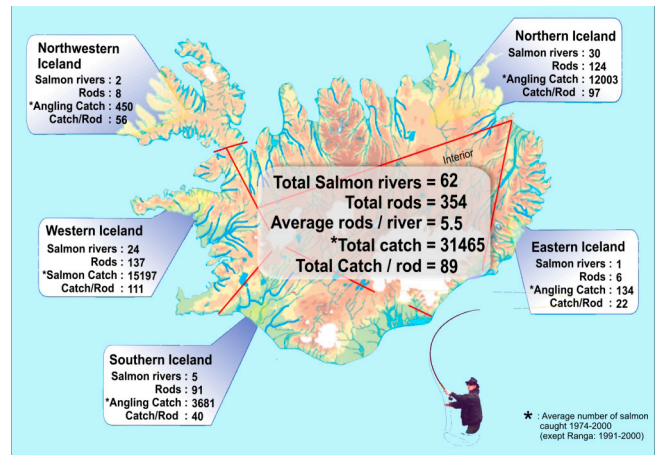
Sea trout are most abundant in lowland areas of the south coast, where they are a popular angling species especially in the vicinity of “Kirkjubæjarklaustur” (figure 1). There is also a prominent sports fishery for landlocked brown trout in the “Veidivötn” lake complex in the southern interior as well as in the upper areas of the river “Laxá”, which flows out of “Lake Mývatn” in the north of Iceland. Landlocked brown trout are also found in numerous lakes all over Iceland.



**Figure 1.** Distribution of the salmonid species in Iceland, also showing the major fishing areas for landlocked brown trout. Less prominent angling for landlocked brown trout and char also occurs in numerous lakes all over Iceland.

## Salmon angling

Salmon angling has gradually been increasing since the early 1900s and is now close to 90 % of the catch. The average salmon angling catch is close to 36.000 salmon but catches have exceeded 84.000 salmon in the best years. The contribution of enhancement has been significantly increasing and in a few rivers, which do not support salmon naturally, salmon angling is entirely supported through smolt releases. In 2008 the contribution of these rivers was 35 % of all angling. There is great enthusiasm for salmon angling among Icelandic as well as foreign anglers. The fishing season lasts from June through September. As in other countries the popularity of "Catch and Release" fishing has been rising and accounted for 20 % of the catch in 2009.



**Figure 2.** Total number and location of major salmon rivers in Iceland. Also shown is the average catch in each region for the last 25 years and the number of rods permitted.

Icelandic salmon angling is relatively expensive which is primarily due to the high catch per rod, limited number of rods per river as well as isolated pristine areas for fishing. It has been estimated that the direct value of the resource to its owners is close to 20 million dollars US. The main salmon fishing areas with the number of rivers as well as rods permitted are shown in figure 2.

Although Atlantic salmon angling is of greatest economic value there is also great interest in sea-char and sea-trout angling in various areas as well as for angling of landlocked varieties in inland lakes.



## The Management System

According to the Salmon and Trout Fishing Act no. 61/2006 the salmon and trout fishing rights are privately owned and linked to the ownership of the land adjoining rivers and lakes. The owners are by law obliged to form an association to share expenses and income from the river. Share of each owner in income as well as costs, which is based upon length of his river bank, catches and salmonid nursery areas, is normally estimated by a public committee of experts. The Fishing (River)

Associations are responsible for management of the local fishery but often also attend to local conservation, enforcement and enhancement as well as building and running of fishing lodges and fish-ways. Icelandic salmon fishing lodges in the most expensive rivers are in fact high class hotels with excellent facilities to cater to every angler's taste. The River Associations either lease the rivers out to angling clubs, angling companies or market them directly to anglers.



## Management and Enforcement

The management and enforcement of salmon and trout fisheries is currently the responsibility of the Directorate of Fisheries. This is, however, done in a close cooperation with the local Fisheries (River) Associations. The main objective of the management is to secure the sustainability of the salmon resource through rational utilization and management. The Competent Authority must approve the number of rods (effort) on a river but daily and monthly fishing periods are specified by law. The Fisheries Associations often have further rules restricting tackle and the number of salmon retained per day. All salmon fishing is thus restricted with respect to annual, weekly and daily fishing time and the fishing effort on rivers controlled.

There is a mandatory recording of the salmonid catch which is the key to sound management as well as the high value of the resource. The Icelandic salmon angling statistics are considered the best in the world. The Icelandic salmon management system with the key players affecting the salmon resource is shown in figure 3.

It has been of major importance for the Icelandic salmon resource that mixed stock net-fishing for salmon in the sea within Icelandic territorial limits has been forbidden since the early 1930s. Severely regulated coastal net fisheries for char are, however, permitted in a few areas.

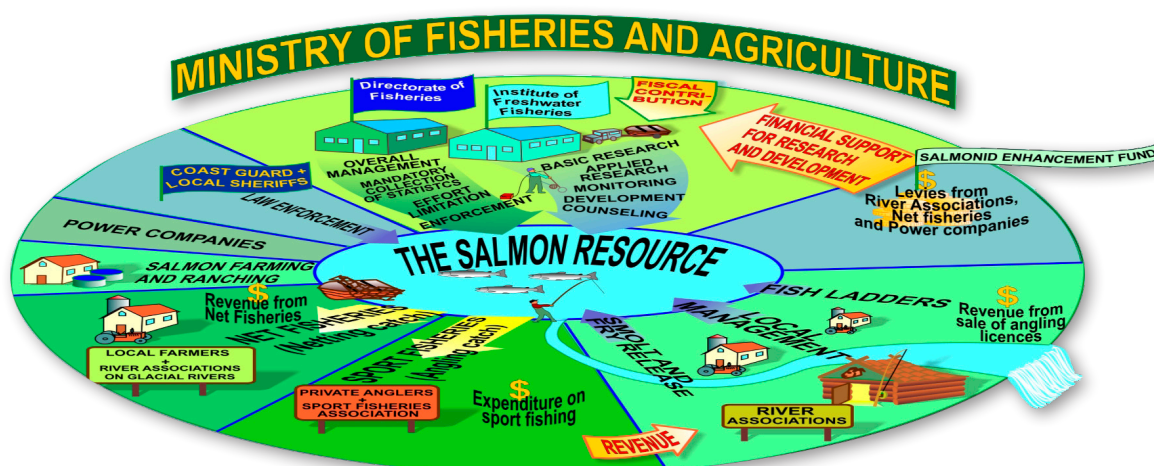


Figure 3. A schematic diagram of the Icelandic Salmon resource showing the key stakeholders as well as organisations responsible for management and research.



## Protection of the Salmonid resources

The responsibility to protect the salmonid resources against threats posed by various human activities on rivers and lakes and in their vicinity is the task of the Directorate of Fisheries. The most important activities within river areas are gravel mining, river diversion and improvement and construction of fish-ways, which are all subject to licensing. The need for enforcement linked to such environmental activities has been increasing.

Salmon aquaculture in marine cages may pose a threat through accidental releases of reared salmon and subsequent straying into rivers. As salmon farming is exclusively using imported selectively bred Norwegian stocks this activity has been prohibited in bays and fjords adjacent to major salmon rivers. ( figure 4). The current regulation, which was formulated by the Salmon Management Authorities and set by the Ministry of Agriculture in 2004, is an important management measure, which has set an example for other salmon angling countries around the world.

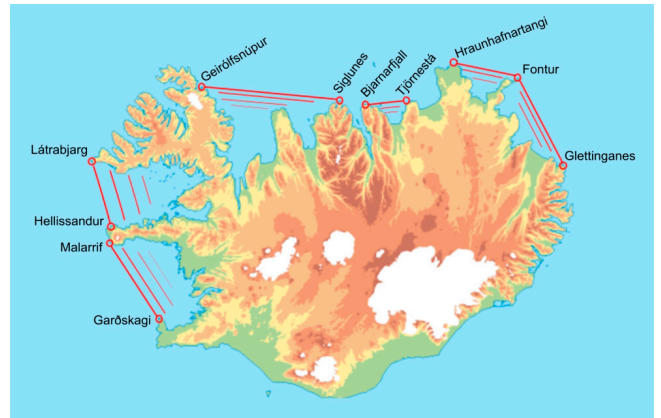
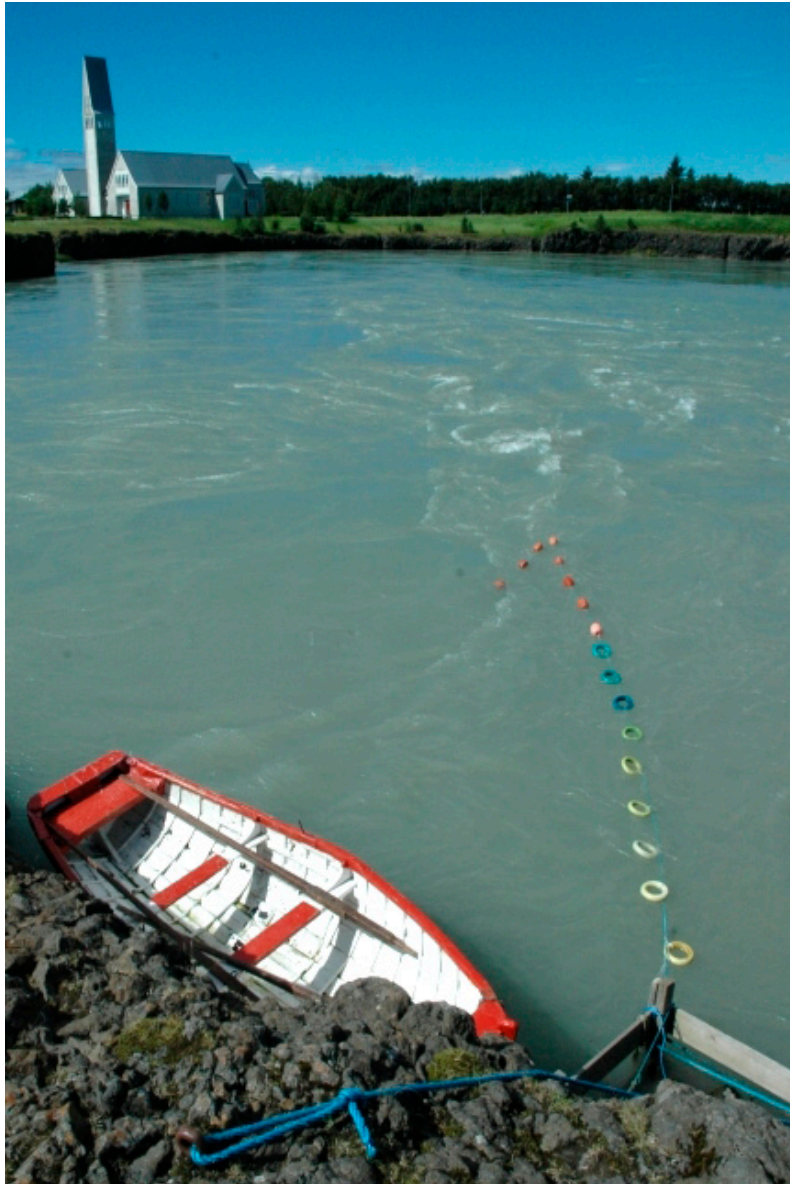


Figure 4. The map shows the areas in Iceland where pen-rearing of Atlantic salmon is not permitted.

## International obligations

Iceland has been a signatory to the NASCO Treaty since its establishment and played an important role in the establishment of the organization. The Salmon Management Authorities have attended all annual meetings as well as most working groups and have thus endorsed the various resolutions and guidelines, which have been approved by

the Council of NASCO. In 2009 the Icelandic government decided to withdraw from the NASCO forum for financial reasons and future membership is thus uncertain. The Directorate has also been active in the participation of ICES and EIFAC.



Typical set-net at Selfoss in the Ölfusá river.



## Directorate of Fisheries