

VATNSDALSA 1992

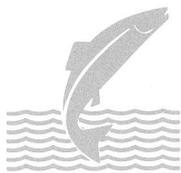
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## **SALMON STOCKS IN RIVER VATNSDALSÁ 1992**

### **Introduction**

The summer of 1992 saw a considerable improvement in the angling in river Vatnsdalsá after three disappointing years. The total catch came to 1023, up by 50% from 1991. The majority of the catch (633) was made up of grilse, i.e. adults returning to spawn after one year at sea. Of the remaining 390, most had spent two years at sea.

The increase in the runs reflected by these catch figures can be attributed to improved condition of the natural salmon stock in the river, favourable climatic conditions and successful propagation measures.

### **Releases of hatchery reared smolts**

In recent years, releases of hatchery produced smolt have been used extensively to boost natural smolt production in the river. These releases were particularly successful in 1991. Of the grilse caught in 1992, close to one in every three originated from smolt releases. Genetically these fish are no different from the naturally spawned salmon since each year broodstock is secured from the river for propagation purposes.

Upon release in the river, these smolt are however considerably larger than their wild cousins in the river and they are also generally larger on their return to the river as grilse or salmon. Because of their larger size, hatchery reared smolt have a greater propensity to return as grilse than the wild smolt.

In 1990 two size groups of smolt were released in Vatnsdalsá in three localities in Vatnsdalsá. Smolt in both groups were large compared to natural smolt. Total returns for both groups were similar, but the proportion of smolt returning as salmon in the smaller group was more than three times that of the larger smolt. These results have been further substantiated in other experiments.

The release locality has a pronounced effect on where in the river adults will be caught. By releasing smolt high up in the river a fairly equitable distribution of the adult catch throughout the length of the river is secured.

#### **Releases of hatchery produced fingerlings above impassable falls**

Smolt produced from fingerlings released in suitable nursery areas above impassable falls contribute significantly to the total smolt production of the river. The most important area is in the catchment of river Tunguá, a tributary which joins Vatnsdalsá near Þóroddsstaðir.

Since 1988 however, the upper reaches of the tributary Álka have been increasingly used. The smolt production of this river increased substantially in 1991 and 1992. The effects of these releases were expected to be felt in the grilse catch in 1992 and in both grilse and salmon catch in 1993.

By distributing the fingerlings over a large area they are secured adequate space and food base, even during periods of adverse climatic conditions. The smolt produced in these areas are therefore generally in good condition.

#### **Natural reproduction in the river**

In the naturally salmon producing areas, density plays an important role in the well being of the juvenile population. To be able to make the transition to sea-life through smolting, there must be adequate food and heat to fuel the necessary physiological transformation. The smaller the potential smolt, the warmer the water temperature must be for a successful transition.

In the lower reaches of Vatnsdalsá the Lake Flóðið acts as a reservoir of heat and food for a thriving juvenile salmon population on a rocky shallow stretch below the outlet.

Up on the main salmon producing stretch in the valley, from the waterfall Stekkjarfoss and down to Saurbær, the juvenile salmon do not have the advantage of this kind of a buffer. Any changes in climate will therefore make themselves felt more strongly. The population there was in a healthy state when we did our annual survey in mid-June 1992. A week later a northern blizzard had left 30 cm of snow on the ground and the water temperatures plummeted. Although summer eventually returned to

northern Iceland, the effect of this blizzard may have been considerable, especially in this part of the river. What longer-term effects this may have will be assessed next spring.

Fortunately, through a continuous evaluation of an extensive and systematic propagation programme we feel that we are in a position to considerably reduce potential adverse effects.

#### **The outlook for 1993**

It is always difficult to accurately predict the future. We are however confident that angling in Vatnsdalsá will remain good in 1993. We do expect a reduction in the grilse run, but this should largely be compensated for by an increased salmon catch. The total catch in 1993 could therefore be similar to the catch in 1992, but the proportion of large salmon should be considerably higher.

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