

INSTITUTE OF FRESHWATER FISHERIES

NORTHERN ICELAND

Report of activities in 1988

Tumi Tómasson

Hólum, febrúar 1989

VMST-N/89003



VEIÐIMÁLASTOFNUN - NORÐURLANDSDEILD

Hólum, Hjaltadal, 551 Sauðárkróki.

INSTITUTE OF FRESHWATER FISHERIES, NORTHERN ICELAND

Report of activities in 1988

Introduction

The main reason for the establishment of district offices for the Institute of Freshwater Fisheries has been to improve the advisory service to fishery right owners and hatcheries in the rural areas. It was also intended that research be done especially in areas of prime interest to owners and/or users of the freshwater fish resources. Wherever possible advisory work is integrated with research interests.

There are about 40 rivers or river systems in the district. Average annual salmon catch exceeds 1000 in six of those, is 100-500 in another six and less than 100 in ten rivers. About 14 river systems support strong populations of anadromous arctic char.

The district is rich in lakes. Ten of those exceed 500 ha and at least another seventy are in the range 50-500 ha. They are situated at altitudes ranging from sea level (in some cases stratified with a layer of freshwater on top of saline water) up to an altitude of 400 m.a.s.l.

The staff engaged at the district office consists of a full time fishery biologist, a part time secretarial assistant in winter and a full time field assistant in summer.

Advisory work

The work done here centres mainly on the salmon rivers where payment is required for services. Typically it involves some or all of the following:

- an electrofishing survey of the juvenile populations,
- a habitat survey
- releases of juveniles and smolts
- sampling and monitoring of anglers' catches
- trapping and tagging of juveniles and/or adults
- seining for adults at the close of the angling season

This work is always carried out in close cooperation with the association of fishing right owners. The information is then used to assess the status of natural populations, assess the relative success of on-going propagation programmes and to make further recommendations regarding the management of the resource.

As a rule results and recommendations are either given in a written report or orally, sometimes both. In many instances the institute itself carries out the recommendations, especially in the larger salmon rivers.

Advisory work is carried out on an annual basis in a dozen rivers including the five main salmon rivers in this district and less frequently in other rivers. Another twenty

rivers have been surveyed once or twice in the last five years.

Anglers catches were particularly good in the northern rivers in 1988. The run was dominated by grilse while the 2 sea-winter (SW) component was below average. The general upward trend in catches/runs observed since 1985 continued. Electrofishing surveys and smolt trappings indicated that smolt runs had been good so the angling prospect for 1989 is particularly good.

In 1984-1985 a trout and char fishing programme was initiated in the north involving surveying lakes, teaching of fishing methods and processing of the catch. At that time most lakes in the area had accumulated stocks of arctic char as a result of light or no exploitation for in the past decades.

A typical lake survey includes setting overnight a standard series of eight 25 m gillnets, ranging in mesh size from 20-50 mm (knot-to-knot). The catch is then sampled for size, age, condition, sex, maturity, parasite load and stomach contents. In 1988 samples were obtained from five lakes, all in the Skagafjörður area, three of which have been sampled regularly for the past 4-5 years. In the past a total of 23 lakes have been surveyed in this fashion. The results then form the basis for recommendations on exploitation strategy.

Markets for char and trout were bad in 1988 due to failure to secure exports of fresh and frozen fish. In Skagafjörður the catches plummeted from a previous level of about 30 tonnes annually to less than 5 tonnes. This fishery is poorly recorded.

Research

Three main research areas were identified when the Northern District Office was established in late 1983:

1. The causes of and remedies for large fluctuations in the salmon run in rivers of this region.
2. Population dynamics of lake dwelling arctic char and brown trout with a view to their rational exploitation.
3. Investigation of salmon propagation methods in rivers which at present only have a poor run of this species, the fish fauna being dominated by anadromous arctic char. These rivers are especially common in Skagafjörður and Eyjafjörður and are what we call "cold" rivers.

Apart from the annual surveys described previously, a research programme aimed at investigating the fundamental causes of fluctuation in the salmon runs was initiated in 1987. Then smolt and adult traps were operated in River Núpsá, a tributary to R. Miðfjarðará, in northwest Iceland.

River Núpsá supports a fishery of 100-200 salmon and grilse annually, and first results indicate that a similar number of the Núpsá stock is caught in Miðfjarðará, en route to Núpsá. In 1987 2000 smolts were trapped and microtagged and in 1988 the number was 1600. The effectiveness of the trap needs improving and last year was particularly bad because of two floods during the migration time.

Grilse returns in 1988 varied from 1-8% depending on the time of migration. Return rates were 5.6% for a group tagged on 15/6, rose to 8.1% on the 19th and then decreased steadily to 1.1% on July 1st.

In addition smolt production above impassable falls in Núpsá and returns from hatchery reared smolts released in Núpsá and near the estuary, 25 km downstream, are being assessed. Hatchery smolts released in Miðfjarðará have in the past returned at rates ranging from 0 to 1.4% but the 1987 releases were considerably better. A group of 2500 smolts released in Núpsá returned 3.8% as grilse and the estuary release returned 5.8%. These figures represent minimum rates as included are only fish caught, by anglers (just over 50%) and by seining. The reasons for better returns are thought to results from improved smolt quality.

Juveniles released above impassable falls usually take two to three years before migrating to sea. Scale analysis indicated that these fish return to the fishery at a rate of 0.7-1.5%. The exploitation rate is not known exactly but is thought to be in the region of 30-50%, more in years of poor runs. Therefore the total returns of juvenile releases are probably 1.5-4%.

The number of grilse caught one year is normally a good predictor for the salmon catch the following year. This is however not necessarily so for the hatchery reared smolts. Currently there is a research project in progress involving a third year university student to assess the influence of various factors on the tendency to return as grilse or 2 SW salmon using data from six northern rivers.

The stocks of three now commercially exploited lakes have been monitored for the past four to five years and in 1988 a research project to assess the response of arctic char populations to exploitation was initiated. This work is in part a project of another 3rd year university student.

As yet little attention has been paid to salmon and char in the cold rivers. Much information on the life history of anadromous arctic char has however been gained from an independent research project on River Blanda which lies in the middle of the district (see Head Office report), and those results are being applied in advisory work in rivers dominated by anadromous arctic char.