

Project information

Project title

Anadromous Arctic char in Northern-Norway – migration, habitat use and effects of climate change (Climate impact on anadromous salmonids)

Year

2011/2012

Project leader

Guttorm N. Christensen, ApN

Participants

- Guttorm N. Christensen, ApN
- Carolyn Rosten, NIVA
- Kate Hawley, NIVA
- Audun Rikardsen, UiT/NINA
- Geir Bornø, VI

Flagship

Fjord and coast, Theme: Physical-biological coupling: Oceanography and habitat use by predators and their prey

Funding Source

Fram Centre, The County of Finnmark, institutional funding from ApN/NIVA

Summary of Results

The main objectives in this study are:

- Increase knowledge about migration and habitat use of anadromous char by using acoustic tags
- Improve the knowledge of why the anadromous Arctic char populations in Northern Norway have decreased over the last years
- Investigate the effect of climate change on anadromous Arctic char
- Mapping of spawning areas in Storvatn
- Improve the management of anadromous Arctic char

In November 2010 we tagged 30 anadromous Arctic char in Lake Storvatn with acoustic tags and at the same time with put out 11 VR2 receivers in the lake. Data from the receivers in Lake Storvatn was downloaded in October 2010 and are now being processed.

In May 2011 we caught and tagged another 30 anadromous Arctic char in Lake Storvatn and at the same time distributed 25 VR2 receivers out in the sea with a distance of up to 40 km away from the river mouth of Storvatn (Figure 1). The receivers was retrieved from the sea in October – November. Preliminary data reveal that more than 90% of the 60 tagged fish returned to the lake. This is a very high number. The time spent in the sea before they returned to Lake Storvatn varied from 5 to 120 days. Data on migration indicates that most of the fish only migrated a short distance from the river mouth.

The data are now being processed further.

Figure 1. Localization of the 25 VR2 receivers that was mapping the movement of 60 anadromous Arctic char from May to October 2011.



Published Results/Planned Publications

No publications so far. 1st publication will be submitted spring 2012.

Communicated Results

- Workshop in Hammerfest, May 2011
- Workshop and presentation with Hammerfest Municipality and the local Fish and game association, March 2011
- Presentation given to The County of Finnmark, May 2011
- Article in the local newspaper "Finnmark dagblad" November 2010.

Interdisciplinary Cooperation

No Inter-diciplinary cooperation so far.

Budget in accordance to results

The funding from the Fram Centre made it possible to tag more fish and increase the number of receivers in the sea. The funding from the Fram Centre also increased the number of institutes that are involved in the project. This new network will lead to new ideas and new research within the Fram Centre.

The project will continue for several more years. The tags that are used in this project will last for several more years so the plan is to continue to collect data also in 2012 – 2013. The data obtained this year will also improve the knowledge of where to put the VR2 receivers next year. The funding is not completely determined.

Could results from the project be subject for any commercial utilization

No

If Yes

Conclusions

A)The anadromous Arctic char population in Lake Storfvatn has changed dramatically over the last years and there is also a general decline in anadromous Arctic char populations in Northern Norway. This project will give important knowledge to understand why the

population in Storvatn has changed dramatically during recent years but also information that can be used to better understand the general decline in anadromous Arctic char populations in Northern Norway.

The research activity in this project has resulted in an increased the engagement and the awareness among politicians, management and local people about the valuable lake system they have in the middle of their own city, Hammerfest. This project, the funding possibilities and the network in the Fram Center has led to new ideas for a bigger project that includes anadromous fish species in Porsangerfjorden. In this project several more institutes will be involved and there will also be an interdisciplinary cooperation within this project. The project proposal will be submitted to the Flagship in 2012.

B)The use of acoustic tags is a relatively new and well know method. However in close cooperation with the producers we will improve this method. This is one of the first times such a detailed study of the behavior of anadromous Arctic char in freshwater has been carried out.