Unique research

Environment

The experimental research carried out at the station is based on practical fisheries management or conservation issues. Comprehensive, multiple-scale experimental research at the station and in natural and managed aquatic habitats creates greater applicable knowledge. For example, by applying enriched rearing procedures, a recent innovation developed and tested in the research station, it is possible to produce economically young fish that are more viable and better adapted to natural environmental conditions compared to fish produced by standard rearing methods, contributing to better results in fish stocking and conservation.

Wide spectrum of research activities

Kainuu Fisheries Research Station’s experimental research produces important knowledge for everyday decision-making in fisheries management and conservation. Studies conducted in the station are crucial in the recovery of threatened fish species populations in watersheds harnessed for hydropower and to the National River Strategy. The mount research activities have also included the impacts of harvesting-induced selection on fish populations, habitat selection and the preferences of young fish, rehabilitation of degraded stream habitats, the impacts of climate change, and the effects of alien fish species in streams. The Research station also conducts other experimental research in aquatic ecology, freshwater biodiversity, and the functions of stream ecosystems.

Lake Oulujärvi, one of the biggest lakes in Finland of great value to Finnish inland fisheries and fish markets, is located near the station. The time-series of fisheries statistics and fish population dynamics collected from Lake Oulujärvi since the start of the 1970s form an indispensable data base to extend the research actions from small-scale artificial and semi-natural arenas in the station to real-scale natural habitats, offering opportunities for studies and solutions of practical fisheries management and conservation topics.

Leveraging these

www.kfrs.fi

Kainuu Fisheries Research Station
Superb facilities for fish and aquatic ecology research

Kainuu Fish Hatchery, founded in 1932 by Varisjoki River flowing into Lake Oulujärvi, was modernized in the 1990s and 2000s including not only a state-of-the-art aquaculture facility but also an outstanding selection of aquaria, pools and stream channels for experimentation. The research facility, covering an area of about 7 hectares, has been fully dedicated to experimental research purposes since 2005. Students have also made the station their own through extensive co-operation involving Finnish universities. In consequence, the Kainuu Fisheries Research Station has generated the results of numerous master and PhD theses.

1. OFFICES
Office facilities adequately equipped laboratory, and other staff premises are located in the main buildings. A conference room, for up to 30 people, is available for meetings, lectures and seminars in the hub of research! The stations metal and wood workshop and skilled staff ensure that your study designs can be adapted to the facility and devices in the station if new technical solutions are required.

2. INDOOR RESEARCH HALL
A variety of boxes, troughs, aquaria and tanks, from 0.4 to 15 m² in size, are optimal for egg (larval and young fry) fish studies. Indoor tanks enable versatile study designs for fish breeding and rearing experiments or the construction of other test arenas with good reproducibility. The hall also hosts other equipment e.g. swimming endurance test devices or small-scale flow-through tanks (tholomues) equipped with video or telemetry antennas. Signs that need adjacent near-natural waterways.

3. OUTDOOR FLOW-POOL PONDS
Six natural gravel-bed ponds of 400 m² in size and a maximum water depth of 2 m are available for studies, focusing on benthic species. These ponds enable the production-scale experiments under controlled conditions. The high number of ponds makes it possible to highly replicate experiments: there are thirty-six 50m² ponds and eight 75m² ponds. These ponds enabled the production-scale development of the enriched rearing system. The ponds can also be used in many other ways such as dividing them into several, separate smaller test environments.

4. OUTDOOR REARING PONDS
Our concrete outdoor rearing ponds are either raised in the station’s own aquaculture unit or transported from other Finnish aquaculture stations and natural waterbodies.

5. OUTDOOR SEMI-NATURAL PONDS
Four 10 m long and 15 m wide semi-natural stream channels have an adequate test flow and confluence and incoming flow valve regulation (maximum inflow per channel: 70 l/s). The setup has an efficient freely adjustable monitoring system. Up to 72 RFID-tagged antenna can be used (black-white underwater video cameras + recording units). Semi-natural stream channels are an outstanding arena for lotic fish ecology studies, e.g. young trout habitat selection, competition and preference, rehabilitation of degraded stream habitats, impacts of climate change and alien fish species.

6. SEMI-NATURAL STREAM CHANNELS
The six 30 m long and 1.5 m wide semi-natural stream channels have an adequate test flow and confluence and incoming flow valve regulation (maximum inflow per channel: 70 l/s). The setup has an efficient freely adjustable monitoring system. Up to 72 RFID-tagged antenna can be used (black-white underwater video cameras + recording units). Semi-natural stream channels are an outstanding arena for lotic fish ecology studies, e.g. young trout habitat selection, competition and preference, rehabilitation of degraded stream habitats, impacts of climate change and alien fish species.

7. ACCOMODATION
Long and short-term accommodation is provided for up to 14 people in two apartments in a semi-detached building by River Varisjoki and two guest points in the main building.

8. FISH MONITORING DEVICES
Radio-telemetry technology with an adjustable bed (from sand to boulders) and incoming flow valve regulation (maximum inflow per channel, 70 l/s). The six 30 m long and 15 m wide semi-natural stream channels have an adequate test flow and confluence and incoming flow valve regulation (maximum inflow per channel: 70 l/s). The setup has an efficient freely adjustable monitoring system. Up to 72 RFID-tagged antenna can be used (black-white underwater video cameras + recording units). Semi-natural stream channels are an outstanding arena for lotic fish ecology studies, e.g. young trout habitat selection, competition and preference, rehabilitation of degraded stream habitats, impacts of climate change and alien fish species.

9. WATER INFLOW CAPACITY
Temperature or oxygen levels of incoming water (maximum flow 750 l/s) to the station can be regulated with intake from Lake Kivesjärvi’s surface and/ or deep water stream. It is possible to add oxygen to, heat or cool the water of the indoor research fac. 5 l/s of spring water is also available.

10. RIVER VARISJOKI
Kainuu Fisheries Research Station stands by River Varisjoki, a free-flowing river of great natural beauty which, after several sections of rapids, flows into Lake Oulujärvi about 3 km away. The Varisjoki river system is the last upstream site of Lake Oulujärvi’s threatened adfluvial brown trout, the subject of much research.