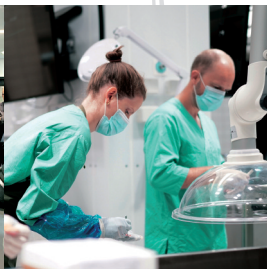




Veterinærinstituttet
Norwegian Veterinary Institute

Facts & Figures Norwegian Veterinary Institute 2023



Norwegian Veterinary Institute

- A public-sector research institute, under the ownership of the Ministry of Agriculture and Food, in the areas of terrestrial animal - and fish health, welfare and food safety. Also carries out tasks for the Ministry of Industry and Fisheries.
- A national and an international reference laboratory, involved in a wide range of international collaborative activities.
- The institute's priorities within preparedness and development of expertise are guided by the UN sustainability goals to ensure good health and welfare for animals and fish, and safe food for humans.



Our values, vision and mission

- The Norwegian Veterinary Institute shall be scientifically ambitious, forward-looking and cooperative.
- Work for and towards sustainable agriculture and bio-economy using a ONE HEALTH approach to healthy food, animals, humans and the environment.
- To supply independent research-based expertise and support to the authorities.

All photo: Asle Moen, Bente Paulson, Bryndis Holm, Charlotte Ravnås, Colourbox, Dag H. Karlsen, Eivind Røhne, Harrieth Lundberg, Jacob Zornu, Knut Madslien, Mari M. Press, Rudolf Svensen, Shane Colvin, Shutterstock.



Key moments in 2022

- The Norwegian Veterinary Institute (NVI) extensively contributed with advice and recommendations to the authorities and industry regarding the outbreak of avian influenza (HPAI) in Norway and in Europe.
- Detection of the deadly bird disease Newcastle disease in hens and pigeons in Norway, for the first time since 1996.
- After more than 40 years of infection with *Gyrodactylus salaris*, the rivers in the Skibotn region were declared free from the parasite. Totally, 43 rivers are declared free from *G. salaris*, since the treatment programme started.
- Continuing the important mapping of the prevalence and spread of CWD. This is an essential prerequisite for implementing measures to limit or eradicate this disease by the authorities. In 2022, there were 17 600 cervids tested for CWD.
- The project BIO-Direct received the 3R award from NORECOPA for contributing to better animal welfare by developing a model that can replace experiments on fish.
- The health service for reindeer (Reinhetsetjenesten) was established as a pilot project funded by the Norwegian Directorate of Agriculture. The service is located at the Tromsø office and will offer courses, knowledge and advice for the domesticated reindeer industry.
- The Norwegian Veterinary Institute was awarded the secretariat role, by the Norwegian Environment Agency, in two working groups that aim to find measures to restrict access to pink salmon to Norwegian rivers. A large amount of pink salmon is expected in salmon rivers in Northern Norway in 2023.
- Detection of the first case of tuberculosis in cattle in Norway, since two individual cases in 1984 and 1986. Norway has been declared free from the disease since 1963.
- No MRSA detected in pigs in 2022, for the third year in a row. This may be affected by the entry restrictions to Norway during the corona pandemic.
- Increased international activities which are an important part of the NVI's societal mission.

Key figures 2022

- 315 employees
- 134 employees with PhD
- 108 scientific publications
- Employees from over 35 nations
- 203 000 samples analysed
- 509 MNOK in total income
- 6 locations in Norway

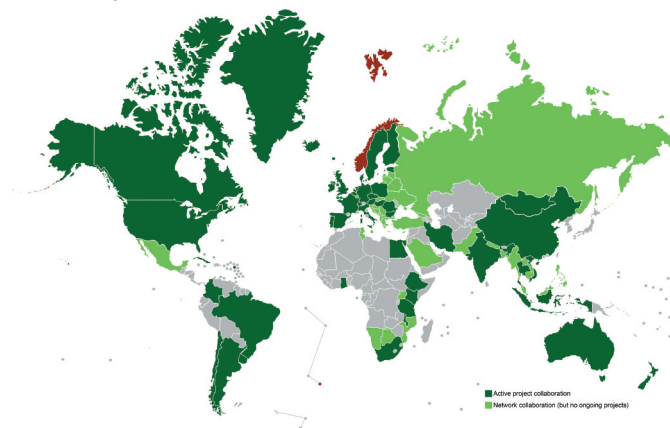


The picture to the left is from Svalbard during training in taking samples from reindeer in the field. The picture to the right shows researchers Jørn Våge and Knut Madslien on an expedition in Nordfjella.

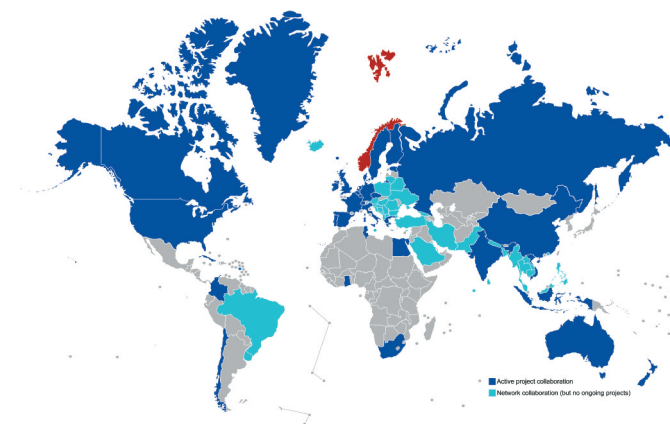
Services

- Research, analyses, risk assessment and diagnostics
- Knowledge production and development
- Over 40 national surveillance programmes
- National reference laboratory for more than 30 diseases of terrestrial and aquatic animals
- WOAH International reference laboratory for 4 diseases
 - Infection with infectious salmon anaemia virus
 - Infection with *Gyrodactylus salaris*
 - Infection with salmonid alphavirus
 - Chronic Wasting Disease
- WOAH Collaborating Centre for:
 - Epidemiology and Risk Assessment for Aquatic Animal Diseases
 - Economics of Animal Health

International cooperation within animal health, animal welfare and food safety in 2022



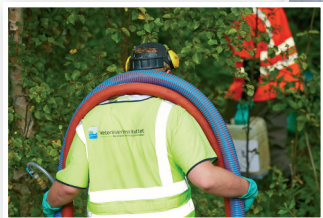
International cooperation within fish health and fish welfare in 2022



Research activities

The Institute has around **100** current research projects, funded by grants from national and international research funding agencies, including EU programs.

- Major scientific outputs from research projects include scientific publications in peer-reviewed international scientific journals, and active participation in PhD education, as well as participation in several international networks and collaborations.
- During the last 20 years, researchers from the institute have co-published in scientific journals with authors from around 90 countries.



In November 2022, after more than 40 years of infection by *G. salaris*, the Norwegian Food Safety Authority was able to declare the rivers in the Skibotn region in Troms and Finnmark free from the parasite.



Examples of research areas:

ANTIMICROBIAL RESISTANCE (AMR) is a global threat for both humans and animals, and requires joint efforts across countries and disciplines. Research on AMR at NVI focuses in particular on prevention, reduction, development, occurrence and spread of such resistance. Reduction of AMR is crucial in ONE HEALTH work and also the public health perspective.

CWD management in Norway is dependent on a constant up-to-date knowledge of the disease. The Norwegian Veterinary Institute advises on the level of control measures and monitoring programmes through development of a model for infection detection.

EUROPEAN JOINT PROGRAMME ON ONE HEALTH (OHEJP)

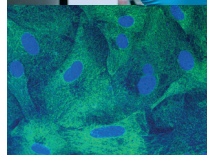
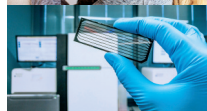
The OHEJP has provided opportunities for harmonisation of approaches, methodologies, databases and procedures for the assessment and management of foodborne hazards, emerging threats and AMR across Europe, for improving the quality and compatibility of information for decision making.

BIO-DIRECT aims to develop new veterinary diagnostics capable of rapid and accurate disease detection using new biomarkers and establishment of organ-like cell culture models that minimize animal experiments.

NEXT GENERATION SEQUENCING aims to establish high throughput sequencing technology at the NVI. Sequencing of genetic material from viruses and bacteria is constantly becoming more important for deeper characterisation of infectious agents, and contributes to better infection tracing and risk assessment in fish health, animal health and food safety.

ANIMAL WELFARE: Animal welfare is a strategic research area for both fish and terrestrial animals with focus on development of objective welfare indicators to promote good health and assist animal and health authorities, livestock owners and industry.

FISH WELFARE: As a part of our societal mission, the institute aims to ensure knowledge for preparedness regarding fish health in a ONE HEALTH perspective. The Norwegian Veterinary Institute continues to increase its competence within this area.



International collaboration for a sustainable future

Norway is strongly committed to international collaborations, working with neighbours close and far towards achieving the UN sustainability goals by 2030. NVI contributes to research, diagnostics and development support in both land-based and aquatic ecosystems projects worldwide through:

- Project on rabies and ONE HEALTH in Malawi funded by the Research Council of Norway.
- Project with focus on building competence on ONE HEALTH education at university level in Ethiopia and Malawi funded by NORAD.
- Cooperation with NORAD to support establishment of a capacity program under the NORAD Knowledge Bank Agriculture for development in Africa.
- Participation in NORAD program «Fish for development» in Ghana and Colombia (Fish Health Management). Contributing to safe fish food production and reduction in fish diseases through i.e. knowledge sharing, training courses, building research capacity and monitoring systems.
- Collaboration with Worldfish on fish health, epidemiology and health economics in Sub-Saharan Africa and southern Asia.
- Contributing extensively to the establishment of the European Partnership for Animal Health and Welfare (EUP AH&W) and to establishing a framework for wildlife health for WOAAH.
- Collaboration with the Food and Agriculture Organization (FAO) in developing and implementing the Progressive Management Pathway for Aquaculture Biosecurity concept.
- Leadership of the working group of *G. salaris* of the NASCO (North Atlantic Salmon Conservation Organization).
- Participation in WOAH's Collaborating Centre for the Economics of Animal Health to develop and promote systematic use of financial data related to animal health in EU.



Key historic dates

- 1891 Established as the first diagnostic laboratory for animal diseases in the Nordic countries
- 1914 Moved to Adamstua in Oslo
- 1924 The first doctoral degree in fish health in Norway awarded
- 1926 Foot- and - mouth disease diagnosed for the first time in Norway
- 1937 The last major outbreak of anthrax in Norway
- 1952 Contagious veal casting eradicated as a disease in Norway
- 1952 The last observation of foot-and-mouth disease in Norway
- 1960 Started working on fish diseases and aquatic health
- 1963 Bovine tuberculosis eradicated in Norway
- 1991 Integration of regional laboratories in Bergen, Harstad, Sandnes, Trondheim and Tromsø
- 1995 Food Safety became a core activity
- 1998 The TSE disease in sheep - Nor 98 - was diagnosed for the first time
- 2003 The first annual Fish Health Report published by NVI
- 2015 Aquatic biosecurity and emerging aquatic diseases became new initiatives
- 2016 CWD detected for the first time in Europe and for the first time in wild reindeer. Between 2016-2023 (March), more than 163 000 CWD tests were analysed
- 2017 NVI contributes to the governmental Traffic Light System for more sustainable aquaculture production
- 2018 NVI designated as WOAH International Reference Laboratory for CWD in Europe
- 2020 Opening of the institute's new premises in Tromsø
- 2021 Moved to new headquarters at Ås and official opening with H. M. Queen Sonja

Great opportunities at Ås

The new facilities at Ås will enhance biological research and enable the use of modern world-class technologies and methods for diagnostics, research and risk assessment. The new veterinary facilities will provide new and unique opportunities to raise the level of knowledge-based services provided by the Norwegian Veterinary Institute.



The facilities at Ås are a powerhouse for knowledge, teaching, diagnostics and preparedness against health threats to animals, fish and humans.

Where we are in Norway



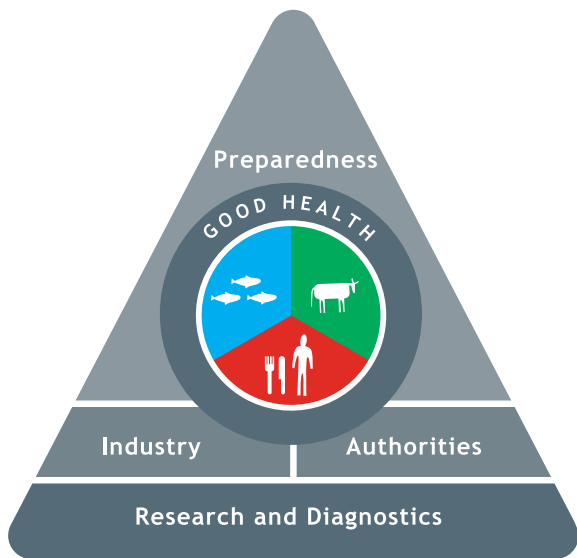
The minister of Agriculture and Food , Sandra Borch, visiting the new facilities at Ås in 2022.



From the Driva region in Trøndelag 2022 when the region was officially declared free from *G. salaris*, the deadly salmon parasite.



From "Student Night" at the NVI at Ås where students from the NMBU were invited to learn more about our societal mission and our activities.



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