Veterinærinstituttet
Norwegian Veterinary Institute

Facts & Figures Norwegian Veterinary Institute 2022



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. Carries also out tasks for the Ministry of Industry and Fisheries.
- It's most important function, based on UN Sustainability Goals, is preparedness and development of expertise related to preventing and reducing threats to the health of fish, animals and humans.
- A national and an international reference laboratory, involved in a wide range of international collaborative activities.

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.

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Key moments in 2021

- While the COVID-19 pandemic is primarily a public health problem, the detection of Sars-Cov2 among different wildlife species, namely white-tailed deer in USA in 2022, illustrates the importance of surveillance at the human-animal interface. The Veterinary Institute (NVI) started in December 2021 monitoring SARS-CoV-2 in cervids in Norway. As of March 2022, the virus has not yet been detected in Norwegian cervids.
- The Norwegian Veterinary Institute moved to new headquarters at Ås, 30 km south of Oslo, in April 2021. Official opening with H. M. Queen Sonja in September 2021.
- In October 2021 Torill Moseng startet as the instituite's new Director General.
- The NVI is part of the national competence group for measures against pink salmon. 2021 was a new record year for the invasion of this undesirable fish from Russia in Norwegian fjords and rivers.
- The NVI continues the monitoring work and research collaboration with international partners to find out more about the differences between the different types of Chronic Wasting Disease (CWD) circulating in Norway.
- The NVI, together with co-authors, published work on a large and highly mediatized disease outbreak in dogs in 2019. Epidemiological and diagnostic investigations pointed to the bacteria Providencia alcalifaciens as a possible cause of the outbreak. Whole genome sequencing of bacterial strains implied that the dogs had been exposed to a common source of infection, however, epidemiological investigations did not reveal a common source, so further studies are needed.
- In 2021, there was a significant reduction in number of PD (Pancreatic disease) cases, but an increase in outbreaks of ISA (Infectious salmon anemia), distributed along the entire coast.
- The NVI organized the ONE HEALTH conference in Norway, in cooperation with other institutes, setting the ground work for establishing a national ONE HEALTH platform.
- The NVI's ONE HEALTH coordinator, Hannah Joan Jørgensen, started a two years period as seconded researcher at the International Livestock Research Institute in Nairobi, Kenya, coordinating also some of NVI's research and development porfolio in Africa.
- The NVI started a new project on rabies in Malawi funded by the Global Health Programme of the Research Council of Norway.
- The disease brucellosis has never been detected in Norwegian sheep and goats. In light of this unique position, Norway was granted free status for the disease according to new EU law.

Key figures 2021

- 313 employees
- 93 employees with PhD
- 147 scientific peer-reviewed articles
- Employees from over 35 nations
- 197 000 samples analysed
- 435 MNOK in total income
- 6 locations in Norway

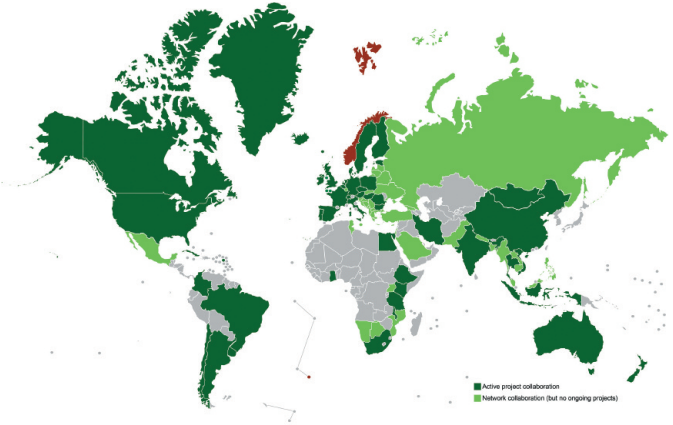
(Main offices in Ås, Bergen, Trondheim, Sandnes, Tromsø and Harstad, but staff also in Brønnøysund and Steinkjer)

H. M. Queen Sonja visited the official opening of the new Veterinary Building at Ås on 1. September 2021.

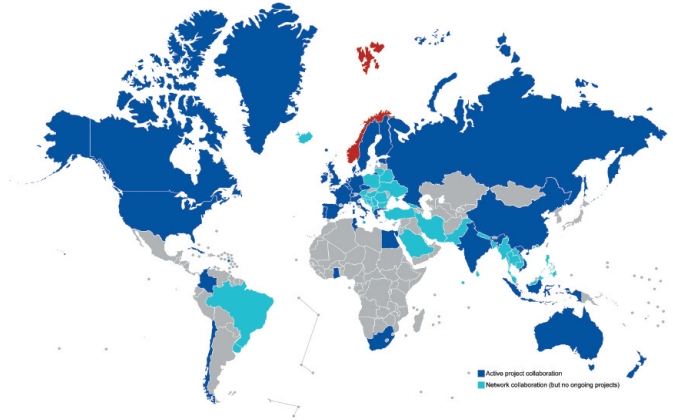
Services

- Research, analyses and diagnostics
- Knowledge production and development
- Over **40** national surveillance programmes
- National reference laboratory for more than **30** diseases of terrestrial and aquatic animals
- OIE International reference laboratory for **4** diseases
  - *Infection with infectious salmon anaemia virus*
  - *Infection with Gyrodactylus salaris*
  - *Infection with salmonid alphavirus*
  - *Chronic Wasting Disease*
- OIE 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 2021



International cooperation within fish health and fish welfare in 2021



Research activities

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

- Major scientific outputs from research projects include scientific publications in peer-reviewed international scientific journals, and active participation in PhD education, as well participation in several international networks and collaborations. Connecting science to society through active communication and media engagement has also become a growing focus for NVI.
- During the last 20 years, researchers at the Institute have co-published in scientific journals with authors from around 90 countries.

Activities in one of the new labaoratories and pathology facilities at Ås

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 is a fatal prion disease in cervids. CWD was first detected in Europe in Norway in 2016. Since then, NVI has been engaged in one of its largest ever surveillance programmes. Research at NVI and collaboration with international institutions aims to contribute to better strategies for detecting, managing and controlling the disease.

NEXT GENERATION SEQUENCING is a strategic research initiative that aims to establish high throughput sequencing technology at the NVI. "Next-generation sequencing" will provide a better basis for infection tracing and risk assessment in fish health, animal health and food safety.

BIO-DIRECT is a strategic research initiative that 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 can minimize animal experiments.

HUNT ONE HEALTH is a collaboration between NVI, HUNT / NTNU and NMBU. It will contribute to the development of new knowledge about connections between human and animal health, and how they affect each other. It will help to prevent disease and provide good health in both animals and humans.

eDNA and eRNA MONITORING: Detection of environmental DNA (eDNA) or RNA (eRNA) from aquatic organisms and viruses directly from water samples. NVI uses the method for non-invasive monitoring of the presence/absence and spread of pathogens without sacrificing live animals. The method is also used to monitor presence/absence of native and invasive aquatic animal species, including susceptible species and pathogen carriers.

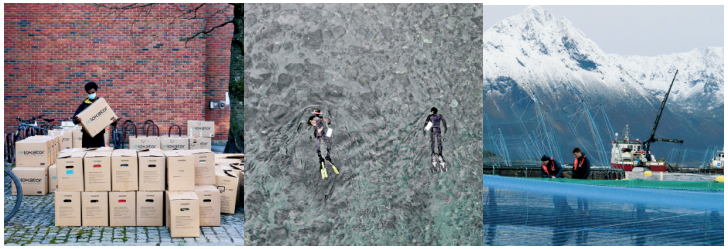
ANIMAL WELFARE: Animal welfare is a strategic research area for both fish and terrestrial animals with focus on development of objective welfare indicators to promote good health and assist animal and health authorities, livestock owners and industry.

FISH WELFARE: As a part of NVI's societal mission, the institute aims to ensure knowledge for preparedness regarding fish health in a ONE HEALTH perspective. NVI aims to increase its competence within this area.

International collaboration for a sustainable future

Norway is strongly commited to international collaborations, working with neighbours close and far towards achieving the Sustainable Development Goals by 2030. NVI contributes to research, diagnostics and development support in both land-based and aquatic ecosystems projects worldwide such as:

- 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 – Norwegian Development Agency..
- Cooperation with NORAD to support establishment of a capacity program under the NORAD's Knowledge Bank Agriculture for development in Africa.
- Participation in NORAD's program «Fish for development» in Ghana and Colombia.
- Collaboration with Worldfish in fish health, epidemiology and health economics in Sub-Saharan Africa and southern Asia
- EU-LEPI project on aflatoxins in milk and food products in sub-saharan Africa.
- Collaboration with the Food and Agriculture Organization (FAO) in developing and implementing the Progressive Management Pathway for Aquaculture Biosecurity concept.
- Establishment of a new Collaborating Centre under the World Organisation for Animal Health (OIE) for the Economics of Animal Health (together with the Universities of Utrecth, NL, and Liverpool, UK)
- NVI being accepted as an observer to the UN Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, IPBES (Nature panel).



Key historic dates

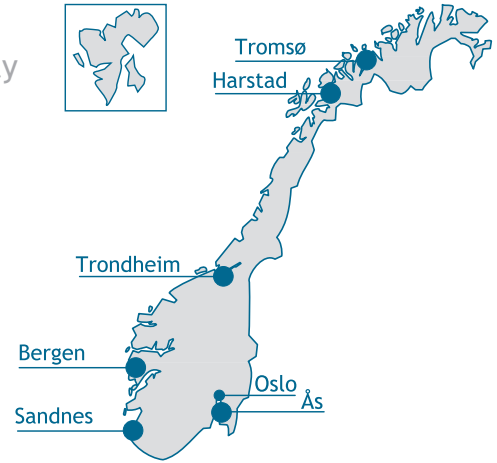
1891	Established as the first diagnostic laboratory for animal diseases in the Nordic countries
1914	Moved to Adamstua in Oslo
1924	The first doctoral degree in fish health in Norway awarded
1926	Foot- and - mouth disease diagnosed for the first time in Norway
1937	The last major outbreak of anthrax 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 2016-2022 (March), more than 147 000 CWD tests were analysed
2017	NVI contributes to the governmental Traffic Light System for more sustainable aquaculture production
2018	NVI designated as OIE 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

A new era for NVI

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

From the TSE laboratory and the first autopsy at the new pathology facilities at Ås.

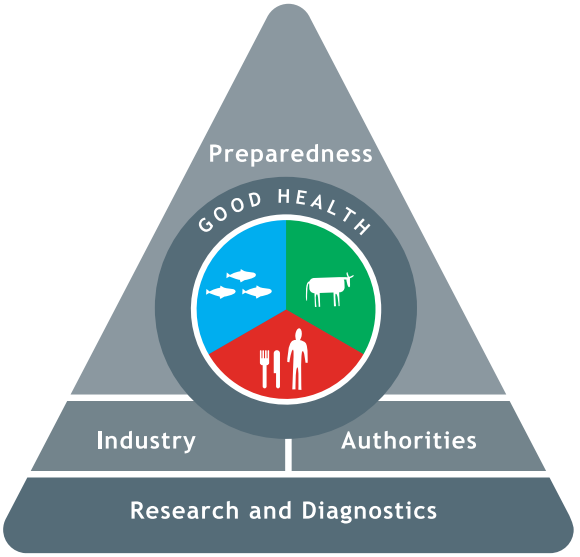
Where we are in Norway



From the opening at Ås with former Minister of Fisheries Odd Emil Ingebrigtsen, Dept. Dir. Fish Health Edgar Brun and Director General Torill Moseng.

Minister of Agriculture and Food Sandra Borch visiting NVI's facilities in Tromsø in January 2022.

The visit of H. M. Queen Sonja to the opening at Ås helped to mark this important event in the history of NVI.



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