

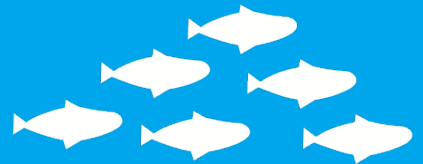


Veterinærinstituttet
Norwegian Veterinary Institute

Overview of the disease situation in Norway

27th Annual Workshop of the National Reference Laboratories for
Fish Diseases, Kgs. Lyngby, 30th of May 2023

Torfinn Moldal, veterinarian, PhD, Scientific coordinator for fish health
Ingunn Sommerset, PhD, Editor of the Norwegian Fish Health Report



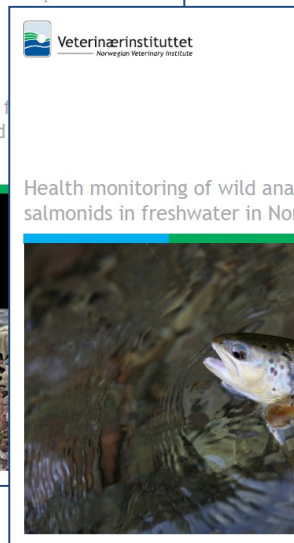
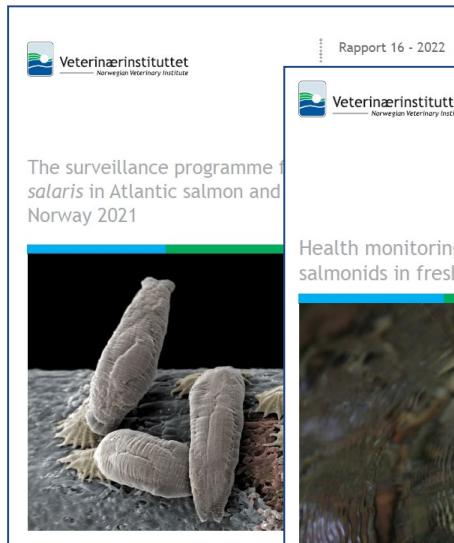
The Norwegian Fish Health Report



Published annually since 2003
Access to data at site level from private laboratories since 2020
Questback from fish health personell and inspectors in the Food Safety Authority
Official registers on active sites, biomass, harvest and mortality



Separate reports for surveillance



Statistical Basis for the report



Data from other laboratories

- 23 companies
- About 80% of the production
- More than 50% of the sites in a production area
- Ten diseases
- Data exchanged via Excel
- Laborious to clean and sort

National lists - categories F and G

MEMBER STATES' MEASURES

Article 269

Additional or more stringent measures by Member States

1. In addition to what follows from other provisions in this Regulation, allowing the Member States to adopt national measures, Member States may apply within their territories measures that are additional to, or more stringent than, those laid down in this Regulation, concerning:

- (a) responsibilities for animal health as provided for in Chapter 3 of Part I (Articles 10 to 17);
- (b) notification within Member States as provided for in Article 18;
- (c) surveillance as provided for in Chapter 2 of Part II (Articles 24 to 30);
- (d) registration, approval, record-keeping and registers as provided for in Chapter 1 of Title I (Articles 84 to 107), and Chapter 1 of Title II, of Part IV (Articles 172 to 190);
- (e) traceability requirements for kept terrestrial animals and germinal products as provided for in Chapter 2 of Title I of Part IV (Articles 108 to 123).

2. The national measures referred to in paragraph 1 shall respect the rules laid down in this Regulation and shall not:

- (a) hinder the movement of animals and products between Member States;
- (b) be inconsistent with the rules referred to in paragraph 1.

Even better overview

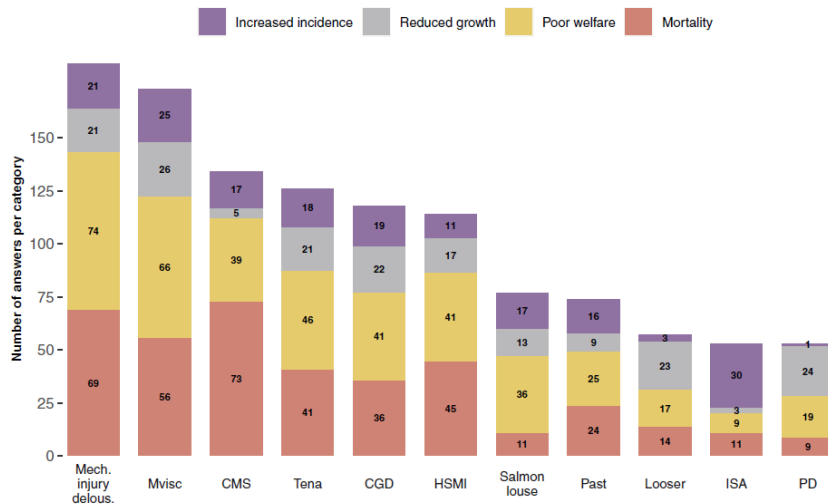
Independent of agreements

Dynamic process

Category F should be extended

Is the suspicion or detection based on clinical disease only or supported by laboratory investigations?

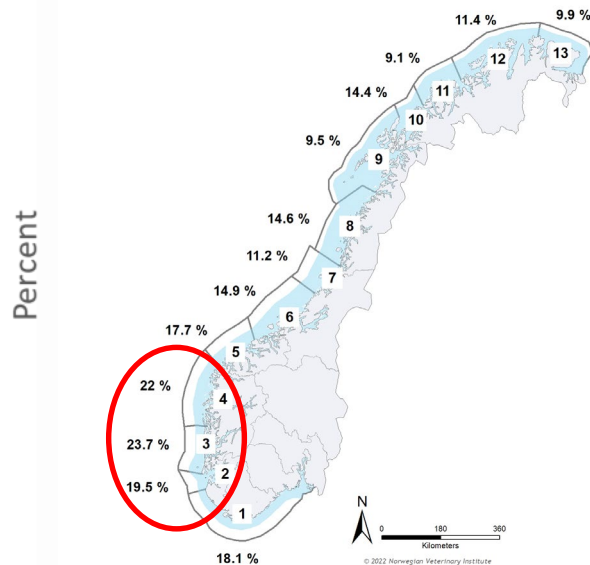
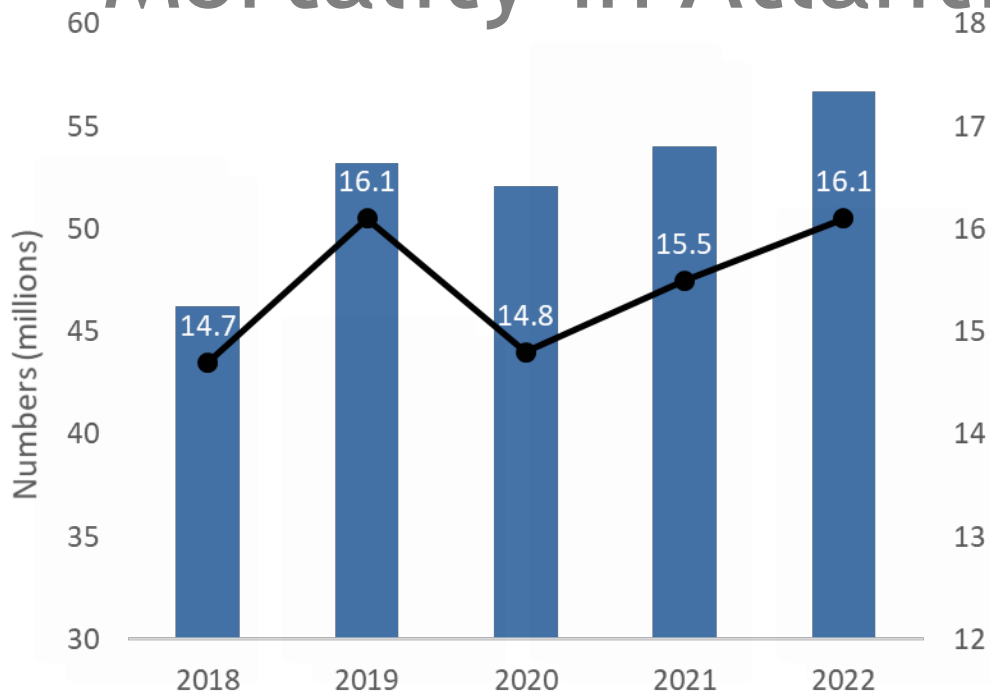
The questback



Some key official production data

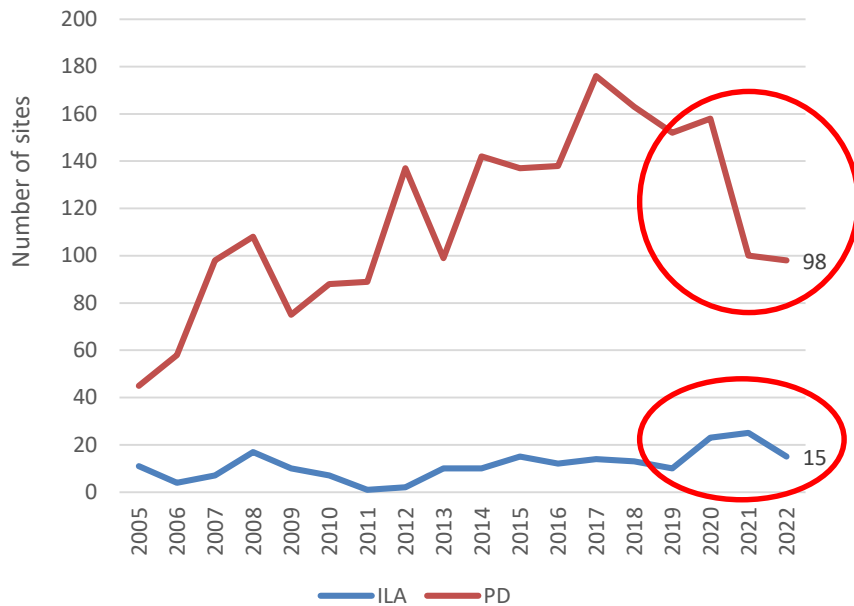
	2018	2019	2020	2021	2022
Salmonid juvenile production (concessions)	217	221	227	227	231
Salmonide ongrowing sea sites (active)	1015	966	986	990	989
Marine fish production sites	42	64	36	41	48
BIOMASS at year end (tonns)					
Salmon	814 000	811 958	896 961	868 693	848 927
Rainbow trout	40 400	47 094	40 625	36 984	35 810
HARVESTED (tonns)					
Salmon	1 279 000	1 361 747	1 400 117	1 561 302	1 543 918
Rainbow trout	66 700	79 600	92 793	84 077	76 662

Mortality in Atlantic salmon in sea





Yearly detections of ISA and PD

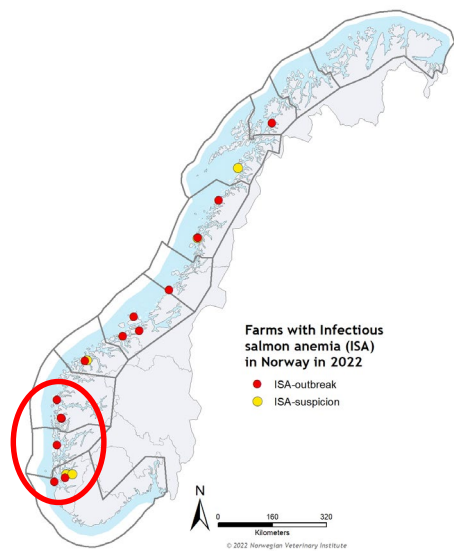


The situation is stable for PD compared to 2021

Decrease for ISA

Vaccine effects?

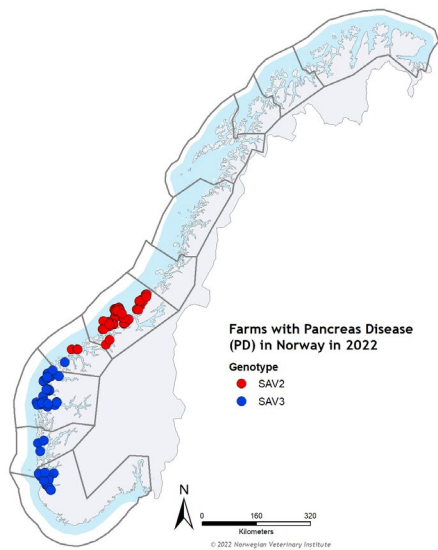
Infectious salmon anemia (ISA)



In total five outbreaks and suspicions in broodfish

At least two outbreaks in sea may be traced back to hatcheries where ISAV HPR0 is detected

Pancreas disease (PD)



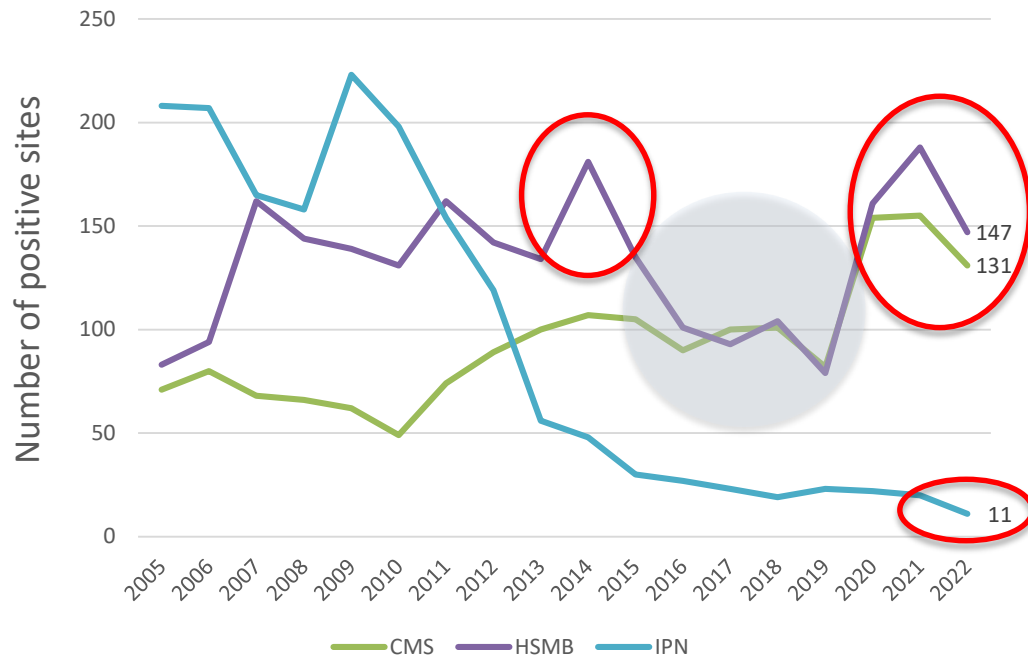
Two epidemics (SAV2 and SAV3)
Fewer SAV3 cases in production area 3 and more SAV2 cases in production area 6

Early detection by monthly sampling since 2017

Vaccination is common in western Norway

No detections in northern Norway

The prevalence of CMS, HSMB and IPN



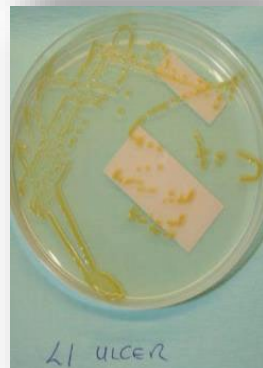
Winter ulcers

433 sites along the coast

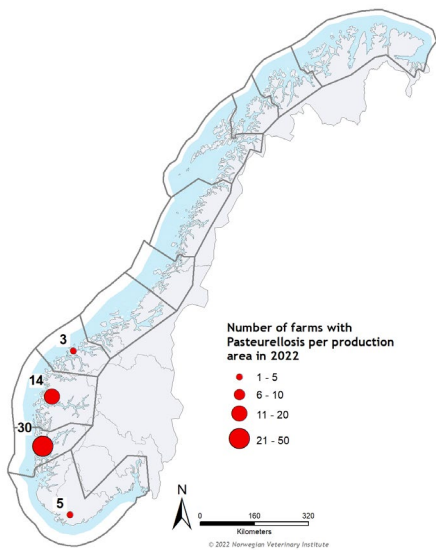
- *Moritella viscosa* (classical)
- *Tenacibaculum* spp. (atypical)

Easy to diagnose and likely underreported (non-listed)

Probably the most important bacterial disease



Pasteurellosis in Atlantic salmon

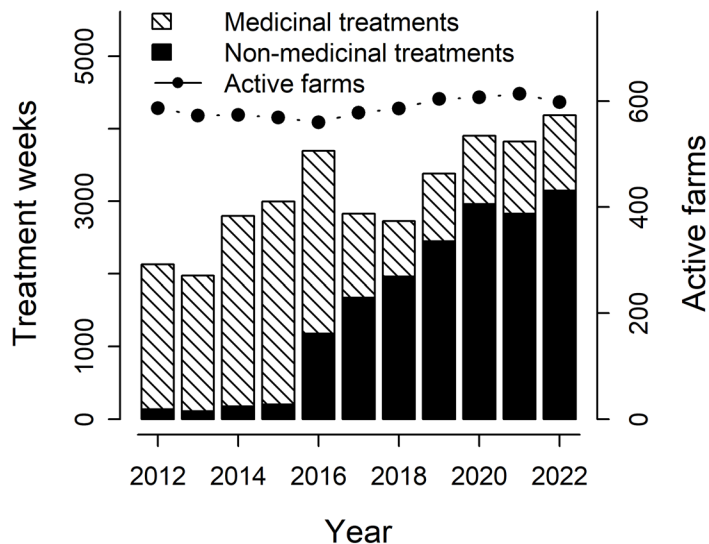


Emerging disease in Atlantic salmon since 2018

Severe welfare problem for affected fish (often large salmon)

52 salmon farms (45 in 2021)

Salmon louse

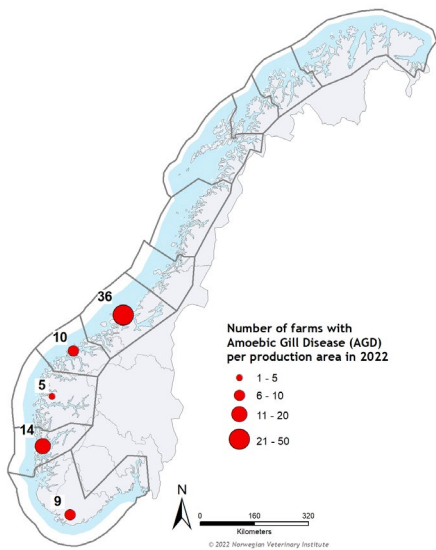


Weekly reporting to the Food Safety Authority

The number of lice have been relatively stable for five years

Shift from medicinal to non-medical treatments

Amoebic gill disease (AGD)



Paramoeba perurans

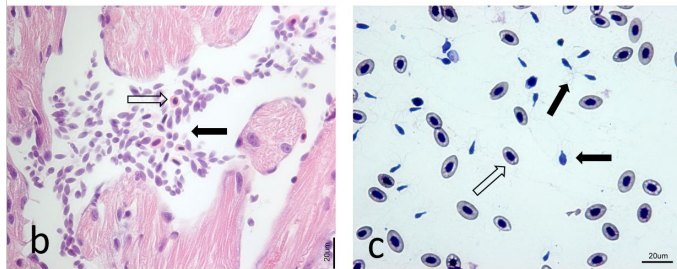
Non-listed

Severe losses in Norway since 2012

Risk factors:

- High salinity
- High water temperature

Spironucleus



Systemic infection

Poor welfare

Sites in one area in the north

Photos: Sofus Olsen and Erik Sterud

Non-listed diseases in smolt

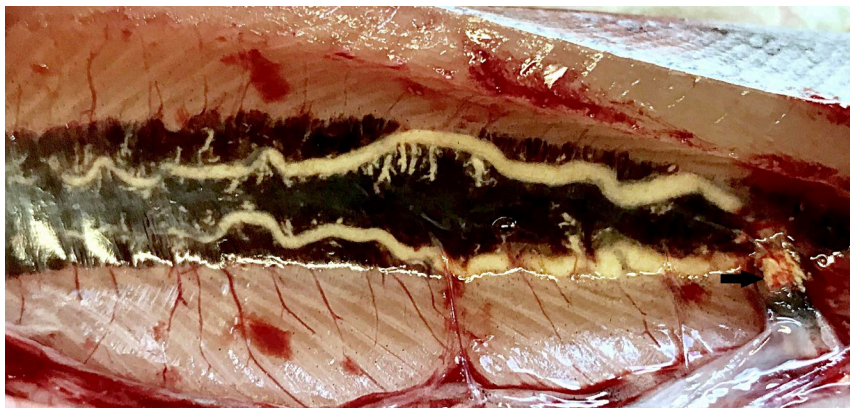
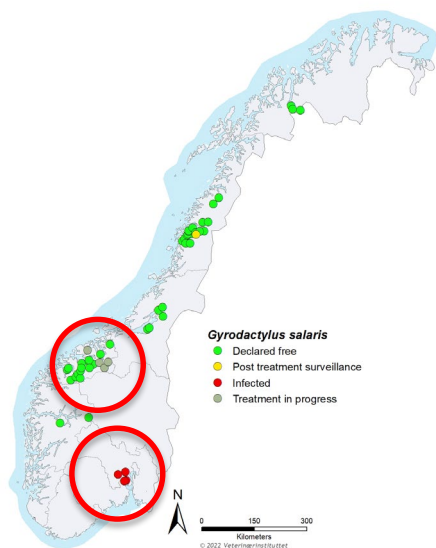


Photo: STIM



Photo: Anne Berit Olsen

Gyrodactylus salaris



Introduced in the 70ies

Detected in 51 rivers

Surveillance and
eradication

Four rivers under treatment

Four rivers still infected

Diseases in cleaner fish



Photo: Rudolf Svendsen

30 millions cleaner fish whereof
15 millions lumpfish were added
to salmon cages in 2022

Bacterial diseases and welfare
issues during delousing
procedures and at slaughter
plants - high mortality

Summary

Still high mortality, but geographical variation

Infectious diseases and stressful delousing procedures

Listed viral diseases:

- ISA down (15 confirmed outbreaks and ISAV HPRΔ in five sites)
- PD stable/down (98 farms with equal numbers of SAV2 and SAV3)

Thanks for your attention!



Veterinærinstituttet
— *Norwegian Veterinary Institute*

www.vetinst.no