

# Viral heart diseases in salmonids in Norway

TriNation, Belfast, 16<sup>th</sup> of April 2026

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# Fiskehelsesrapporten

2025



To Ichthyobodo-parasitter (kjent som costia) og blodceller på en laksegjelle. Bildet er tatt med elektronmikroskop og farget. Foto: Jannicke Wilk-Nielsen, Veterinærinstituttet

Published annually since 2003

Separate report on wild fish

The English version will be published  
in May

# The statistical basis for the report

Access to data at site level from private laboratories since 2020

Survey to fish health personnel as well as advisors and inspectors in the Norwegian Food Safety Authority

Official registers on active sites, biomass, harvest and mortality

Categorization of death causes



FISKERIDIREKTORATET



Veterinærinstituttet



SjømatNorge



# Some key official production data

	2021	2022	2023	2024	2025
<b>Salmonid juvenile production (active)</b>	155	153	148	150	155
<b>Salmonid ongrowing sea sites (active)</b>	895	900	894	908	918
<b>Number of fish (&lt;500 g) transferred to sea (millions)</b>					
<b>Atlantic salmon</b>	381,7	461,9	432,8	413,6	405,3
<b>Rainbow trout</b>	20,6	27,9	28,8	29,1	25,1
<b>Harvested (tons)</b>					
<b>Atlantic salmon</b>	1 557 255	1 538 646	1 520 726	1 544 395	1 719 781
<b>Rainbow trout</b>	84 083	76 658	81 154	95 158	107 745

# Sold vaccine doses per category

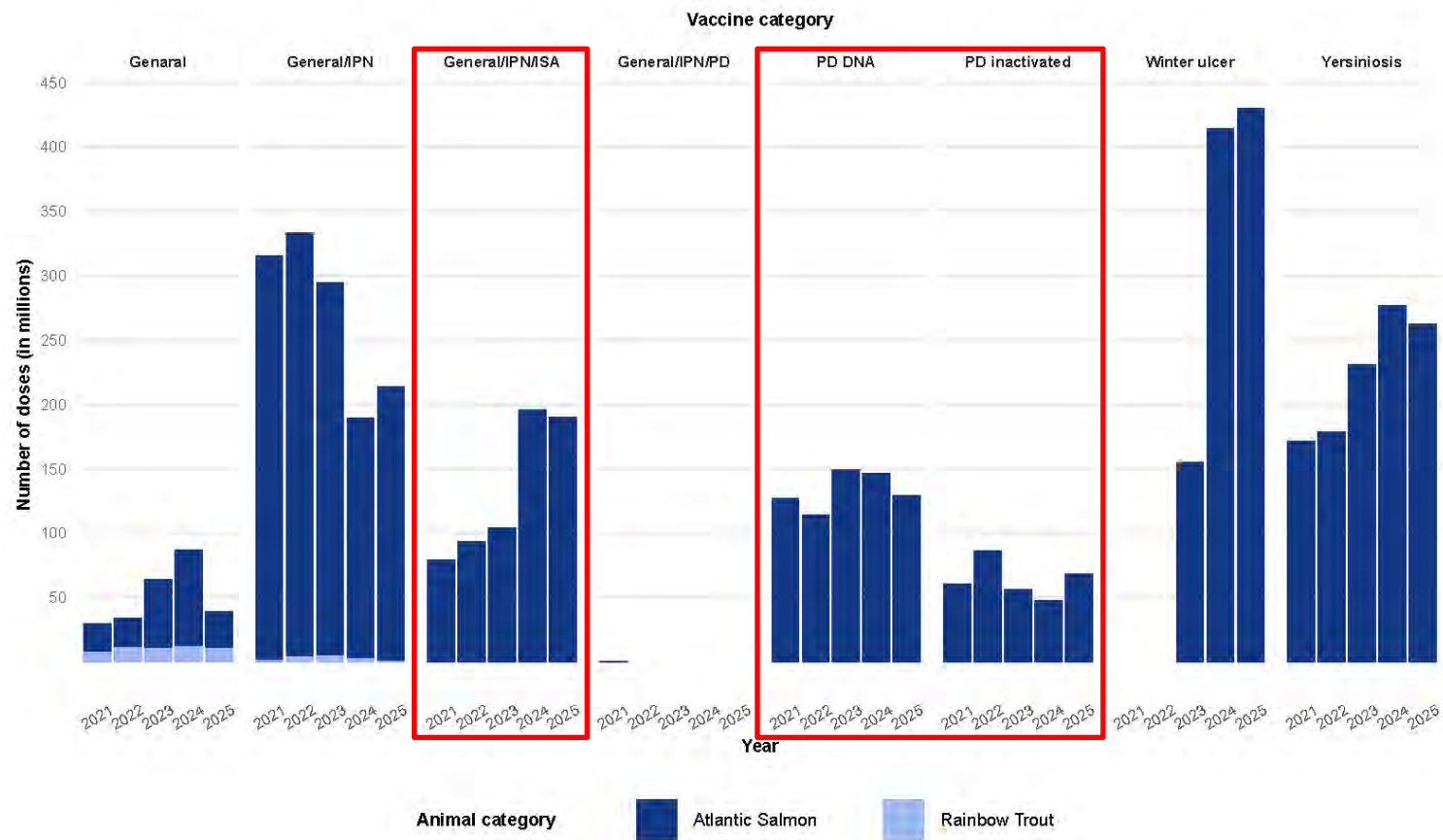
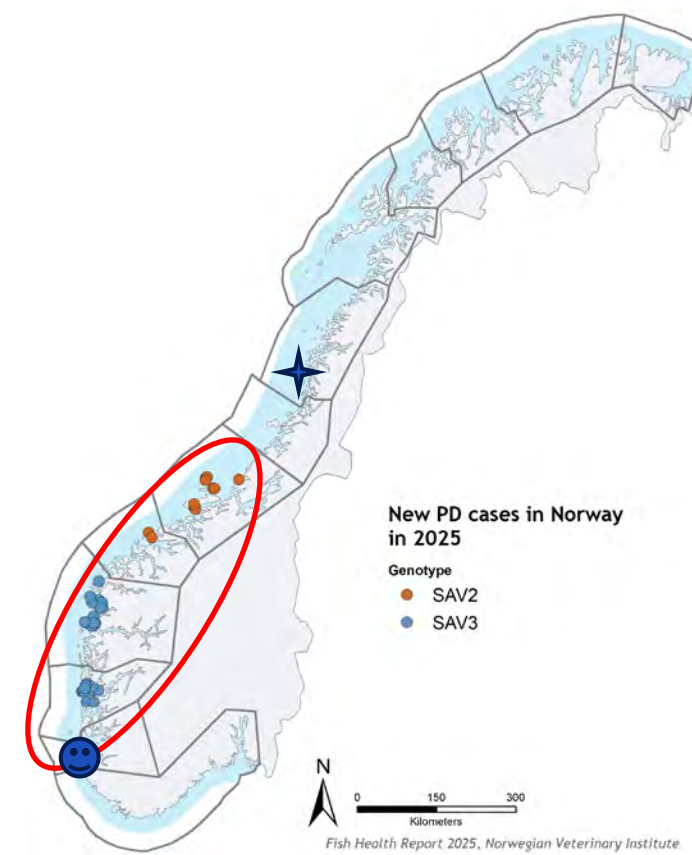
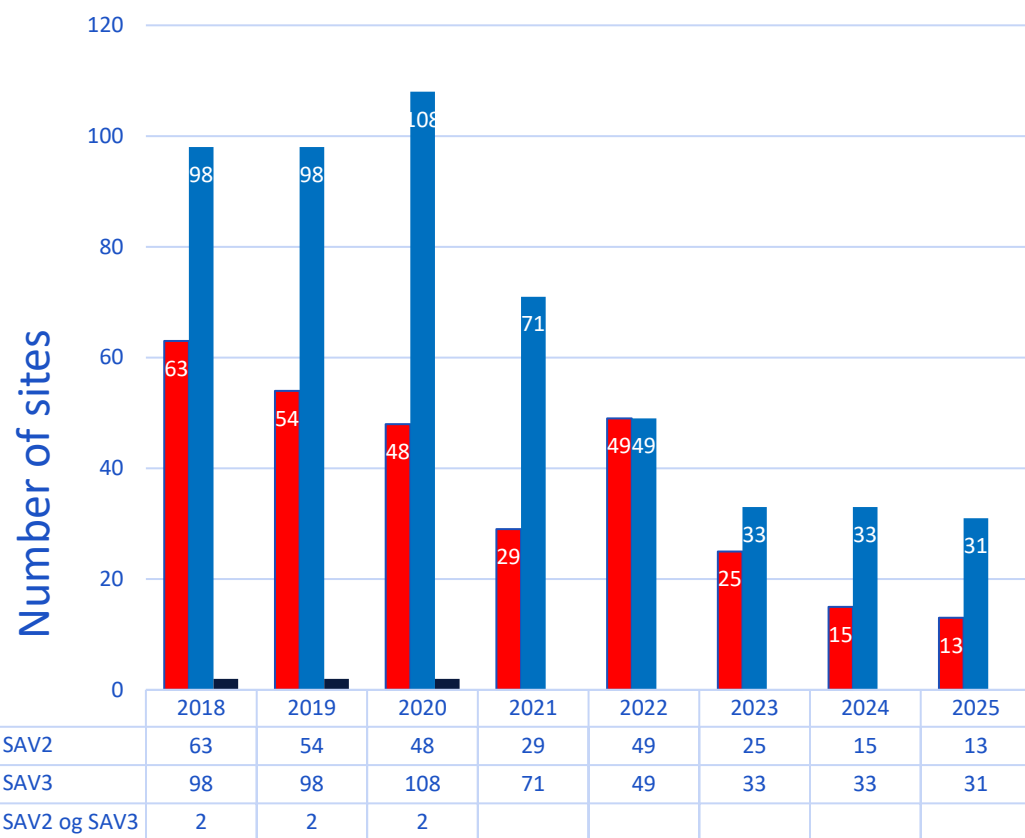
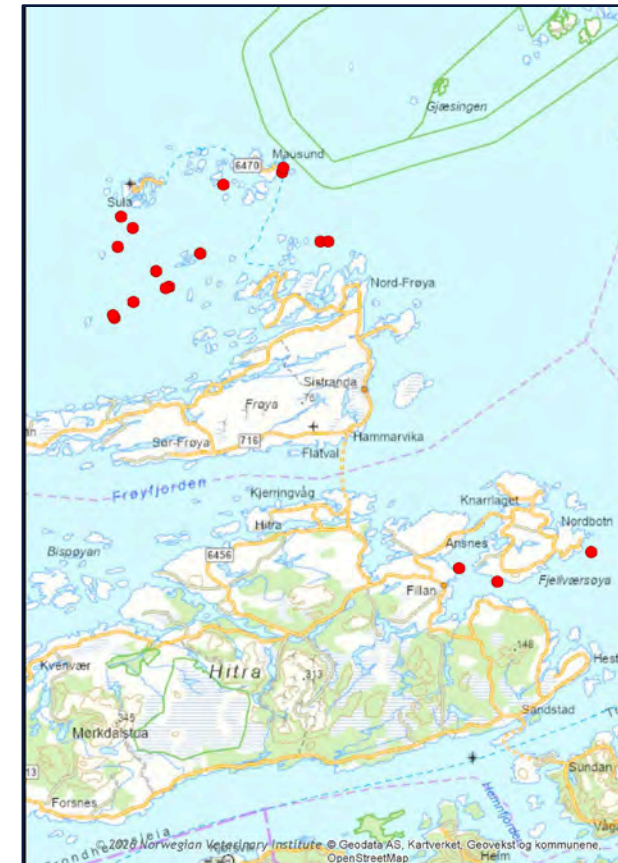
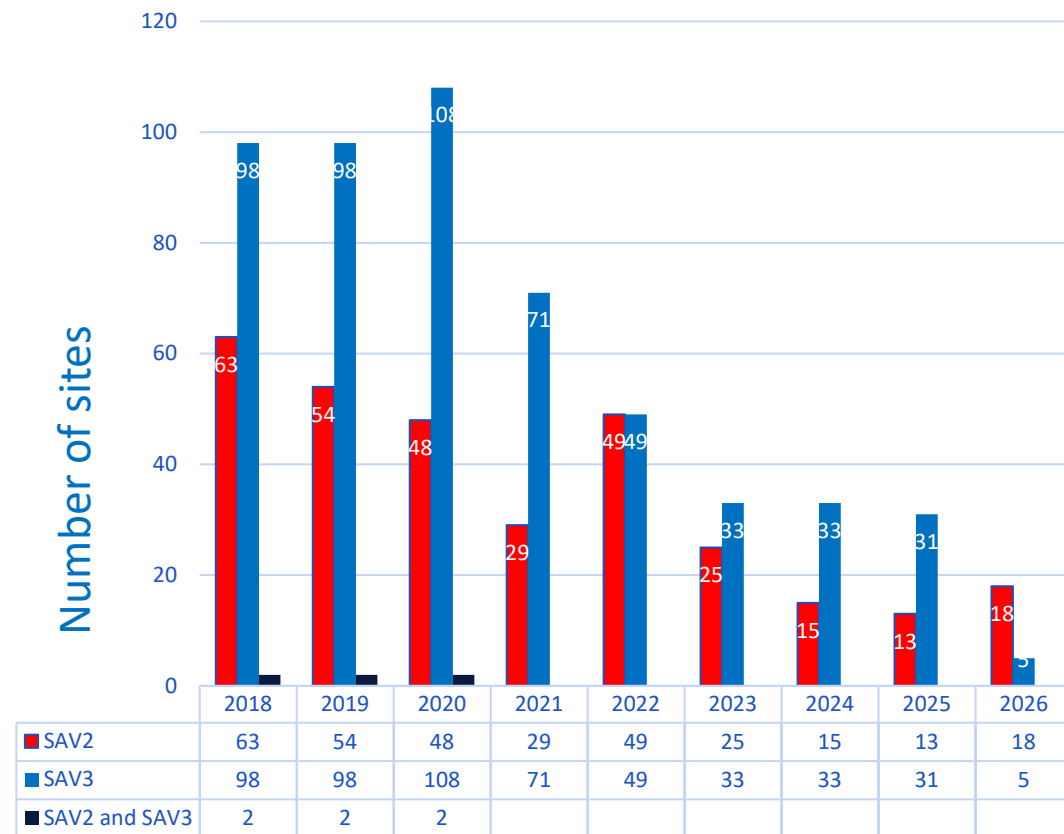


Figure: Leif Lukas Löfling

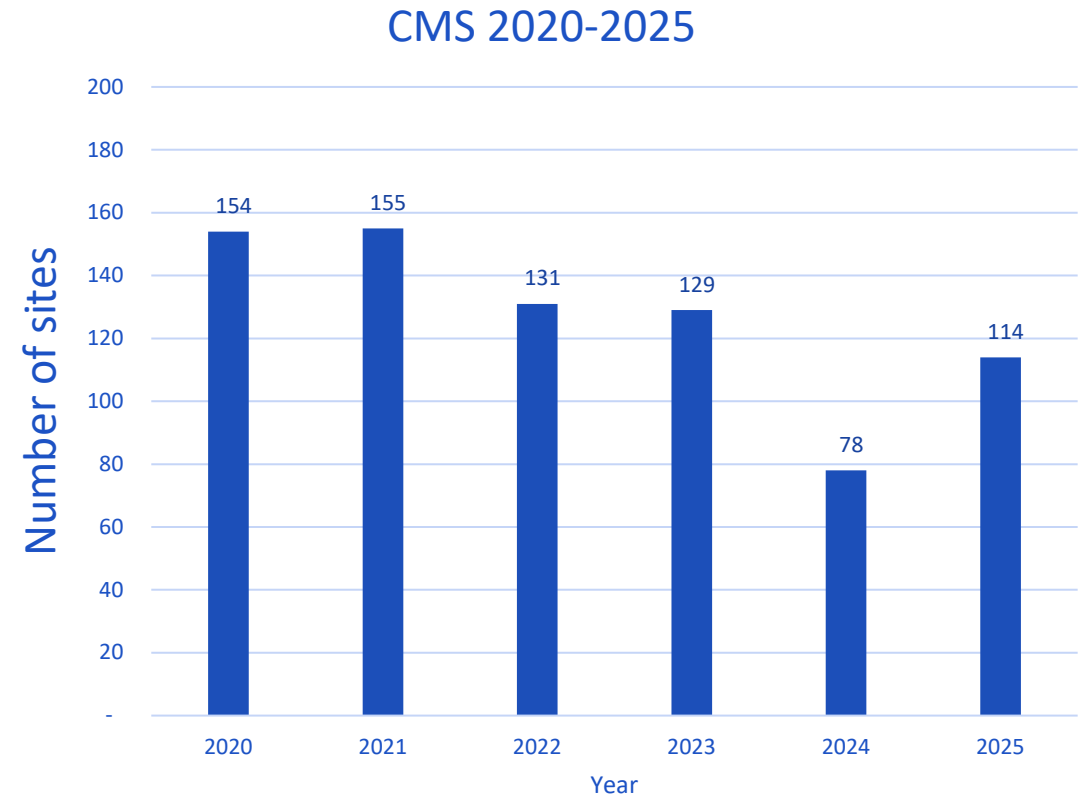
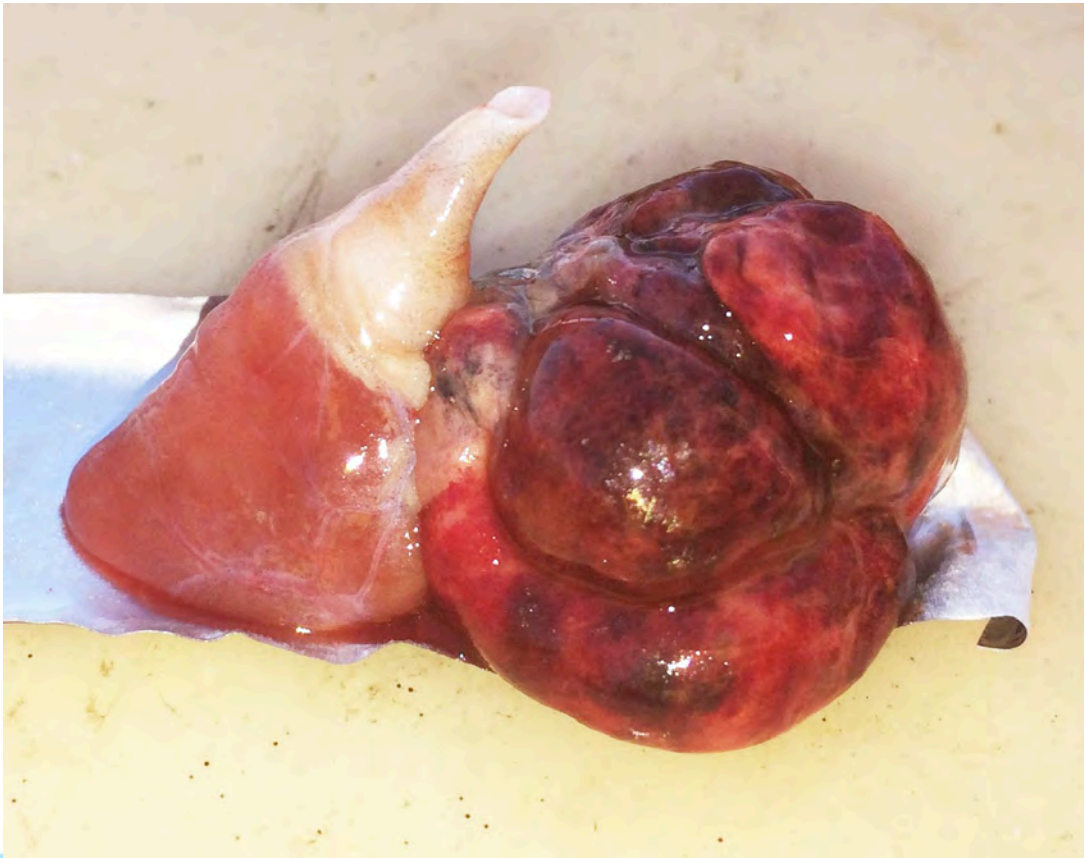
# Further reduction for pancreas disease (PD)



# Many cases of PD in January and February this year



# Cardiomyopathy syndrome (CMS) (heart rupture)



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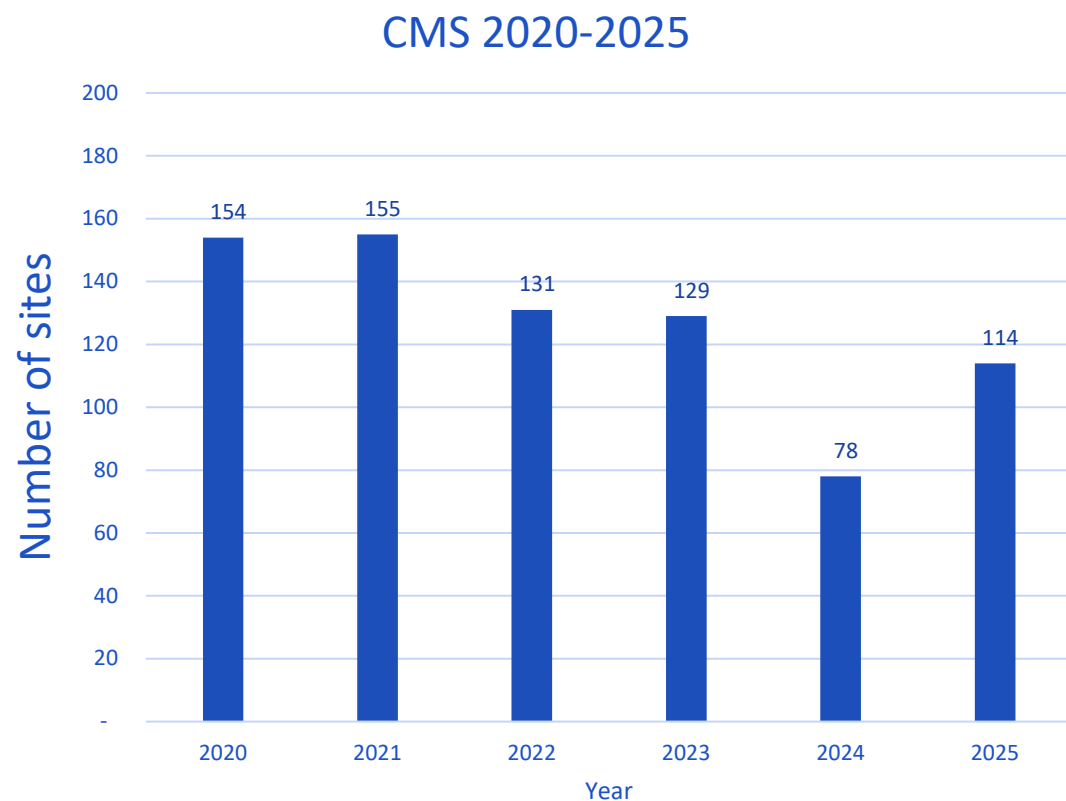
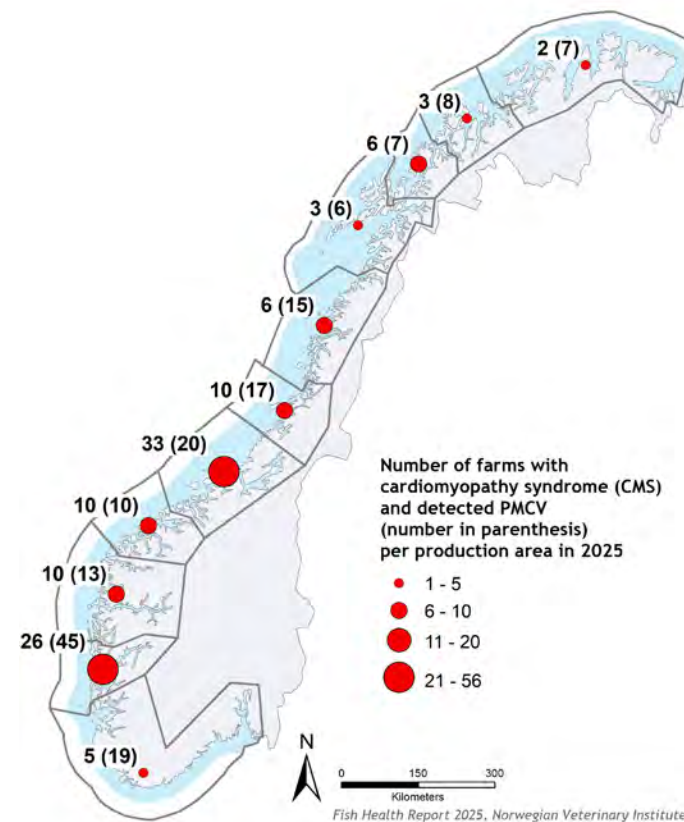


Figure: Hege Løkslett



Map: Attila Tarpai

# Heart and skeletal muscle inflammation (HSMI)

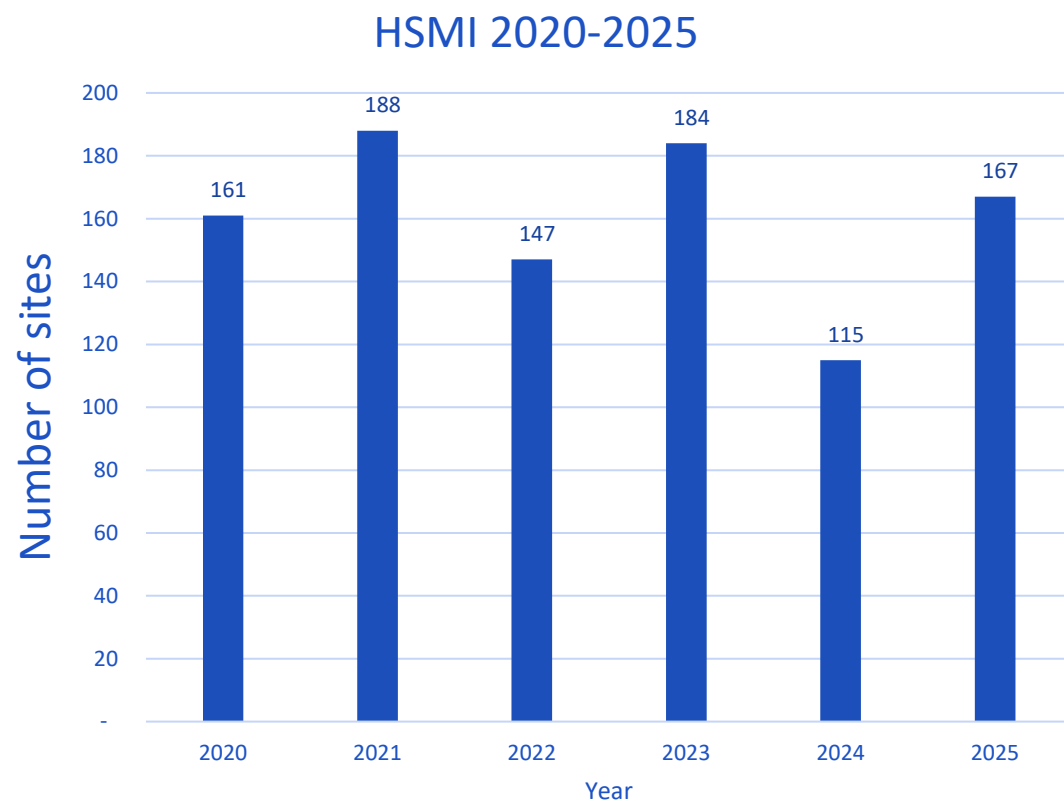
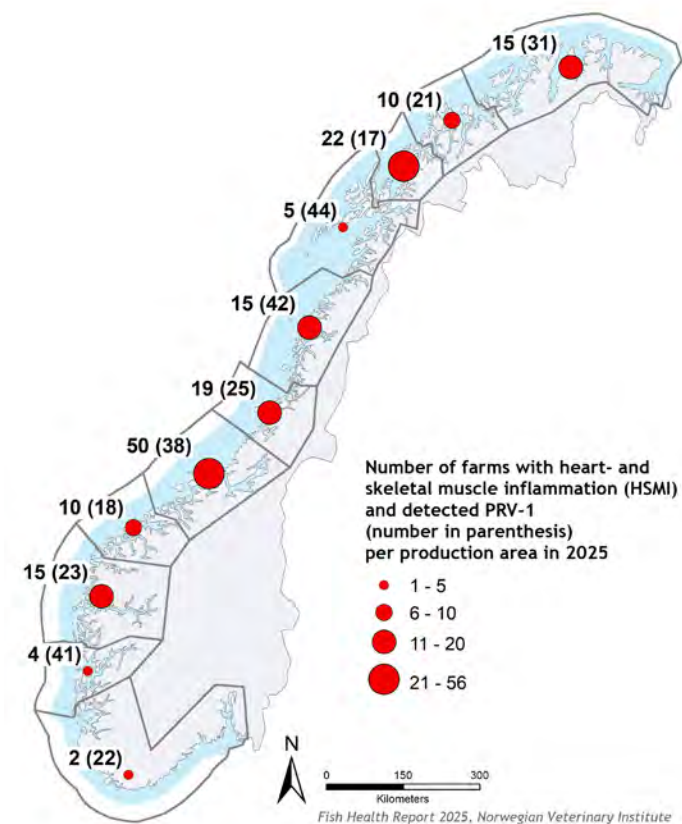
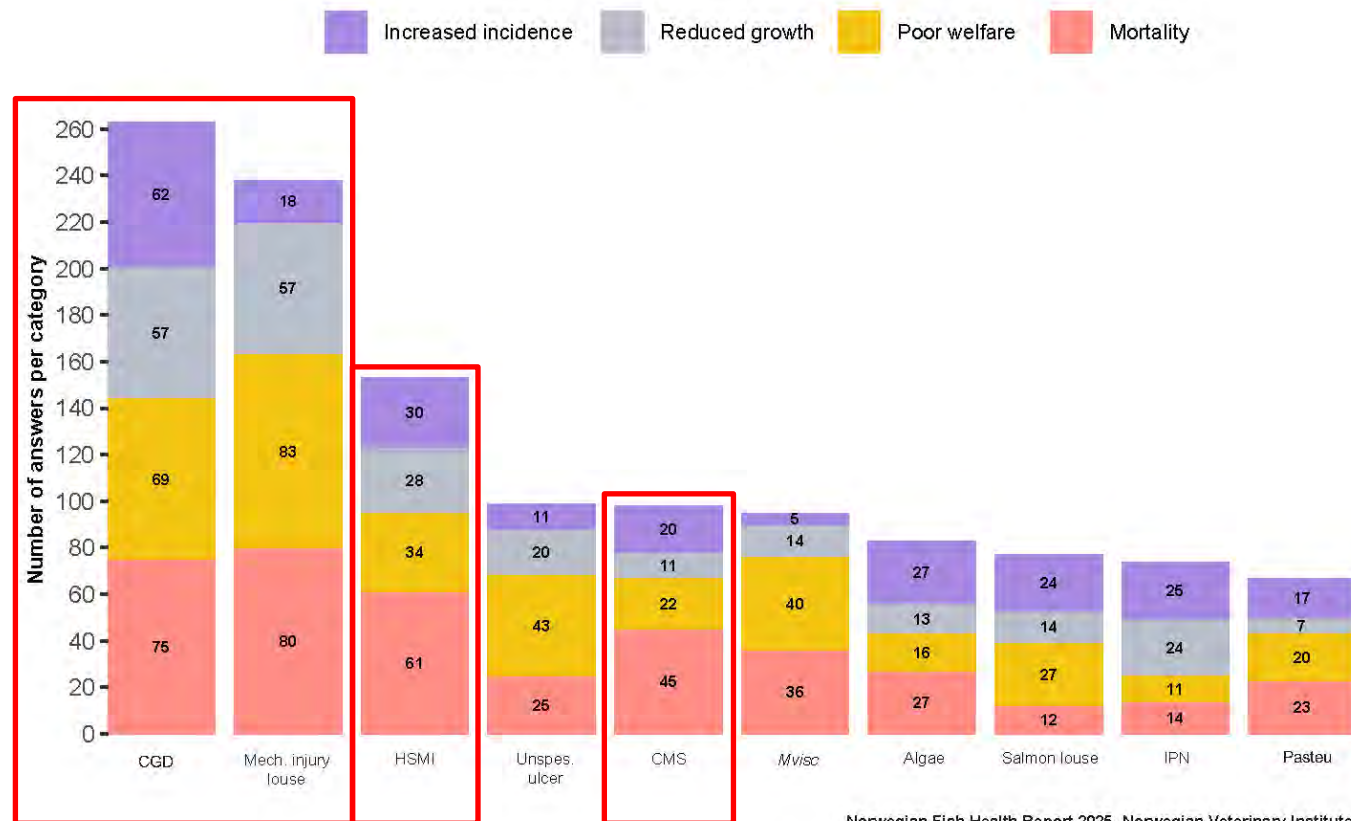


Figure: Hege Løkslett



Map: Attila Tarpai

# Ranking of health issues for Atlantic salmon in sea



Norwegian Fish Health Report 2025, Norwegian Veterinary Institute

Figure: Victor Oliveira

# Categorization of mortality causes for salmon in sea



## A Infectious disease

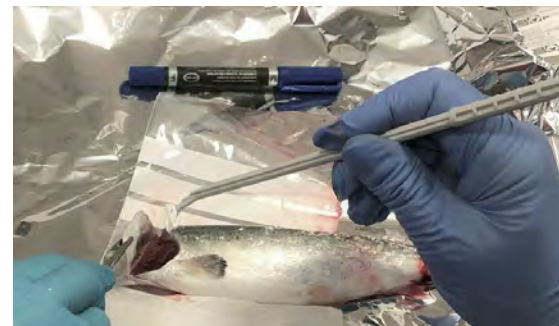
A 01 Viral disease  
A 01.170 Cardiomyopathy  
syndrom



## D Physiological causes



## B Environmental impact



## E Other causes



## C Injuries or trauma



## F Unknown

# Categorization of death causes in salmon in sea

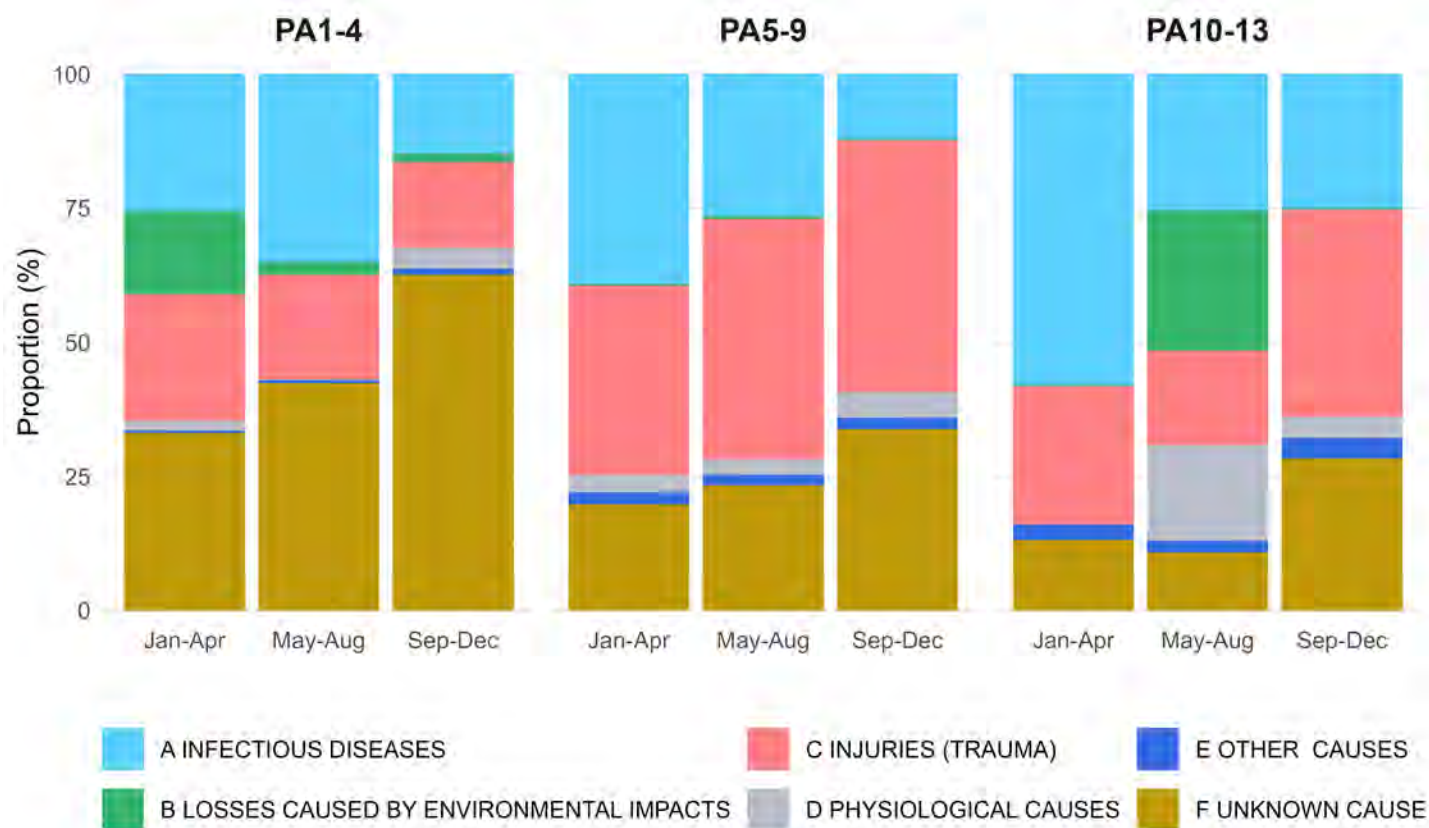


Figure: Victor Oliveira

# Number of confirmed ISA outbreaks per year

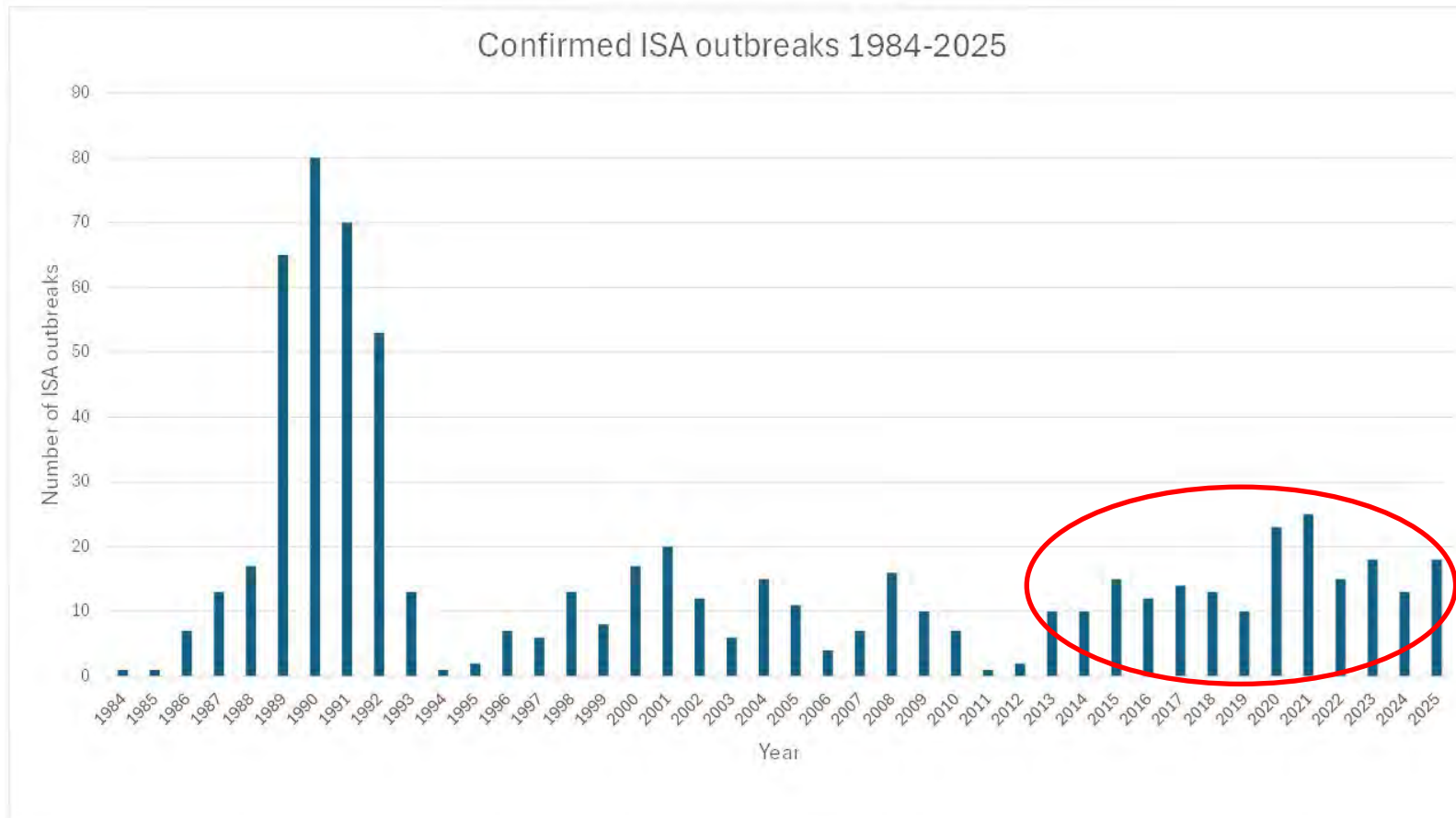
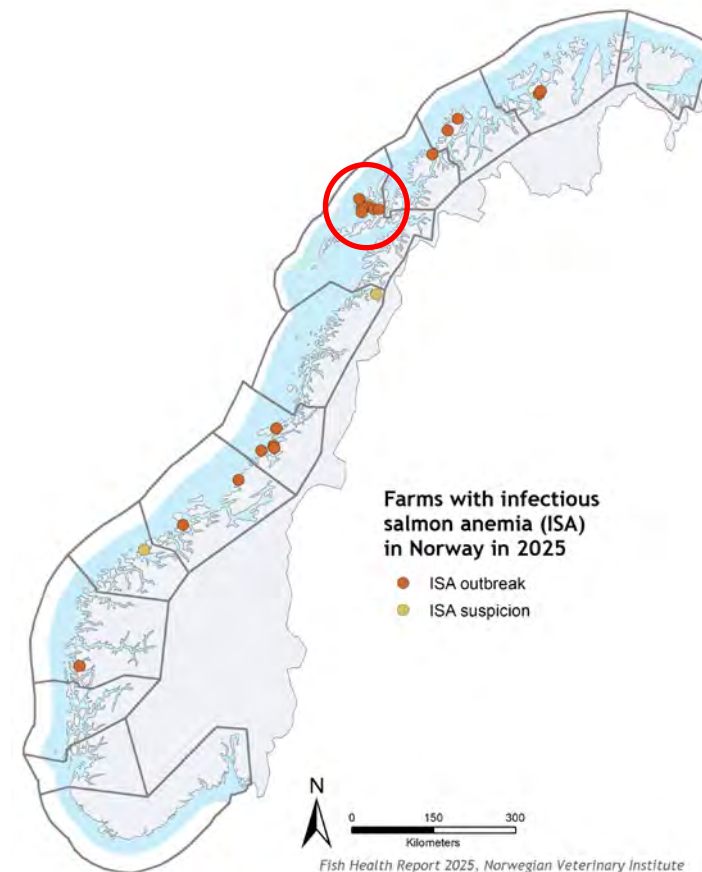
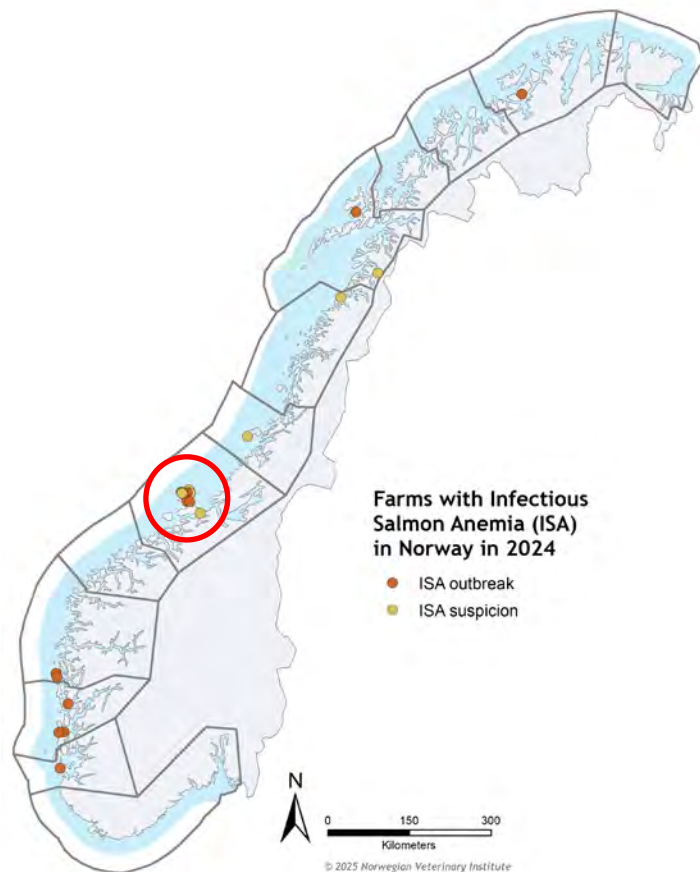
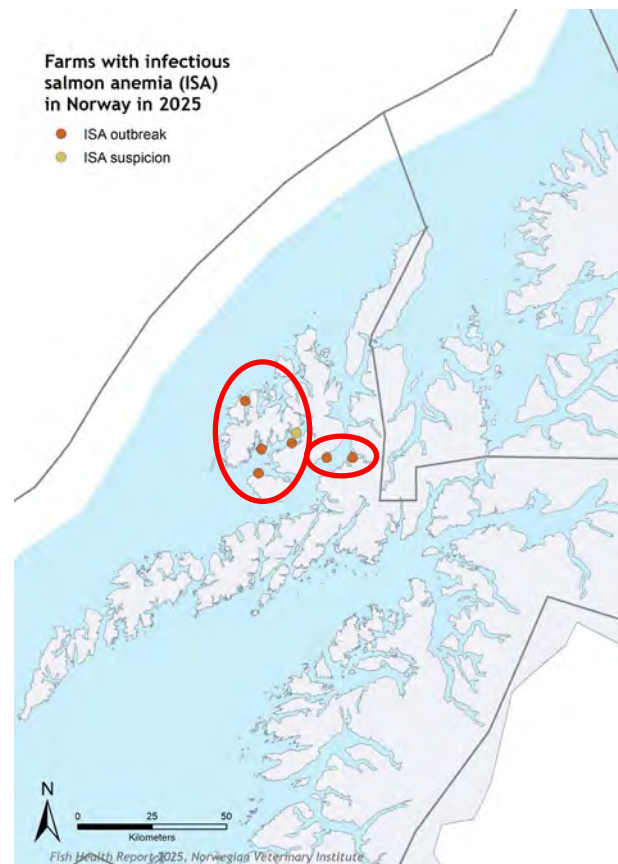


Figure: Hege Løkslett

# ISA outbreaks and suspicions in 2024 and 2025



# Six ISA outbreaks and one suspicion in Vesterålen



Two different virus variants

Vaccinated fish at all sites

Possible connection to ISAV HPR0 in one hatchery

Movement of fish from one site to another

Virus transmission between neighbouring sites

# Monitoring of ISAV HPR0 in hatcheries 2019-2024

One sampling every second year

Gill tissue from nine fish in ten cages >90 fish at each site

ISAV HPR0 detected at **30 sites**

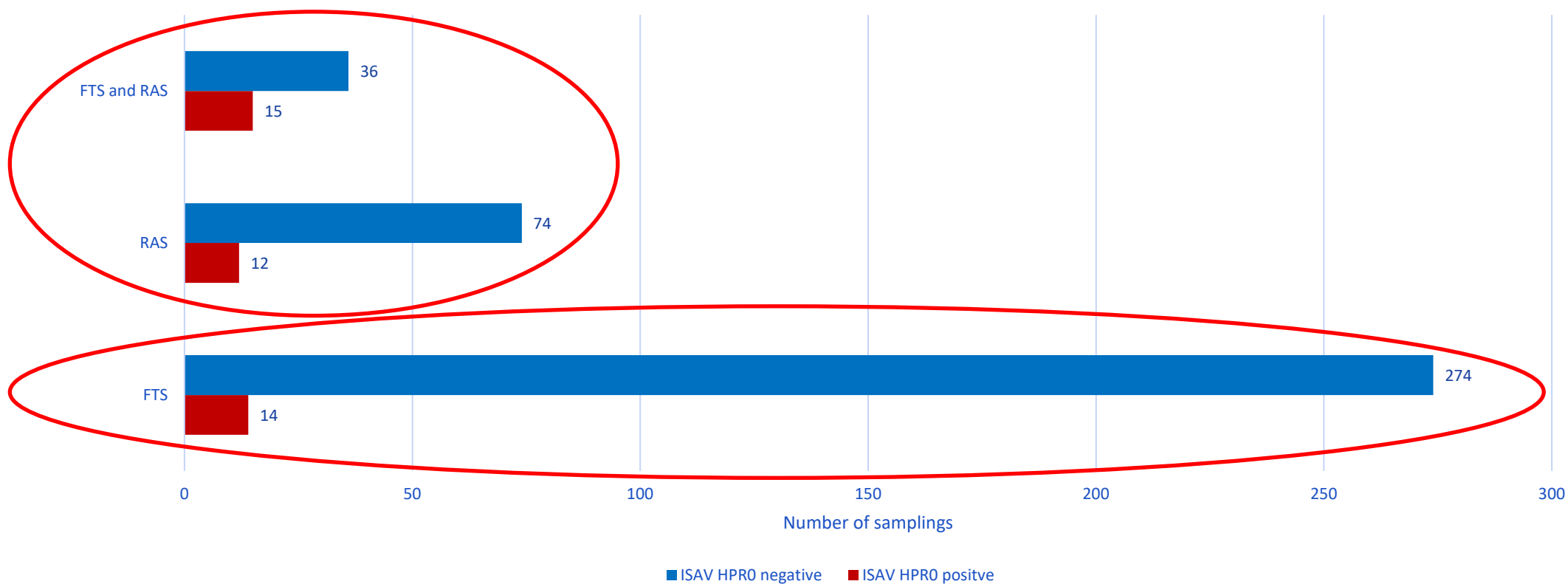
The prevalence is most likely higher

ISAV HPR0 detected at eight sites twice and two sites three times

Year	# sites	# positive	%
2019	74	5	7
2020	42	6	14
2021	78	8	10
2022	78	9	11,5
2023	75	6	8
2024	82	7	8,5

# Larger proportion of detections in recirculating units

Number of samplings and results for the period 2019-2024 for different water technologies



# Summary

Reduction for PD, but many cases caused by SAV2 so far this year

Fluctuations for both HSMI and CMS, but apparently higher impact in 2025 compared to 2024

Ten to 25 ISA outbreaks a year

Possible connection to ISAV HPR0

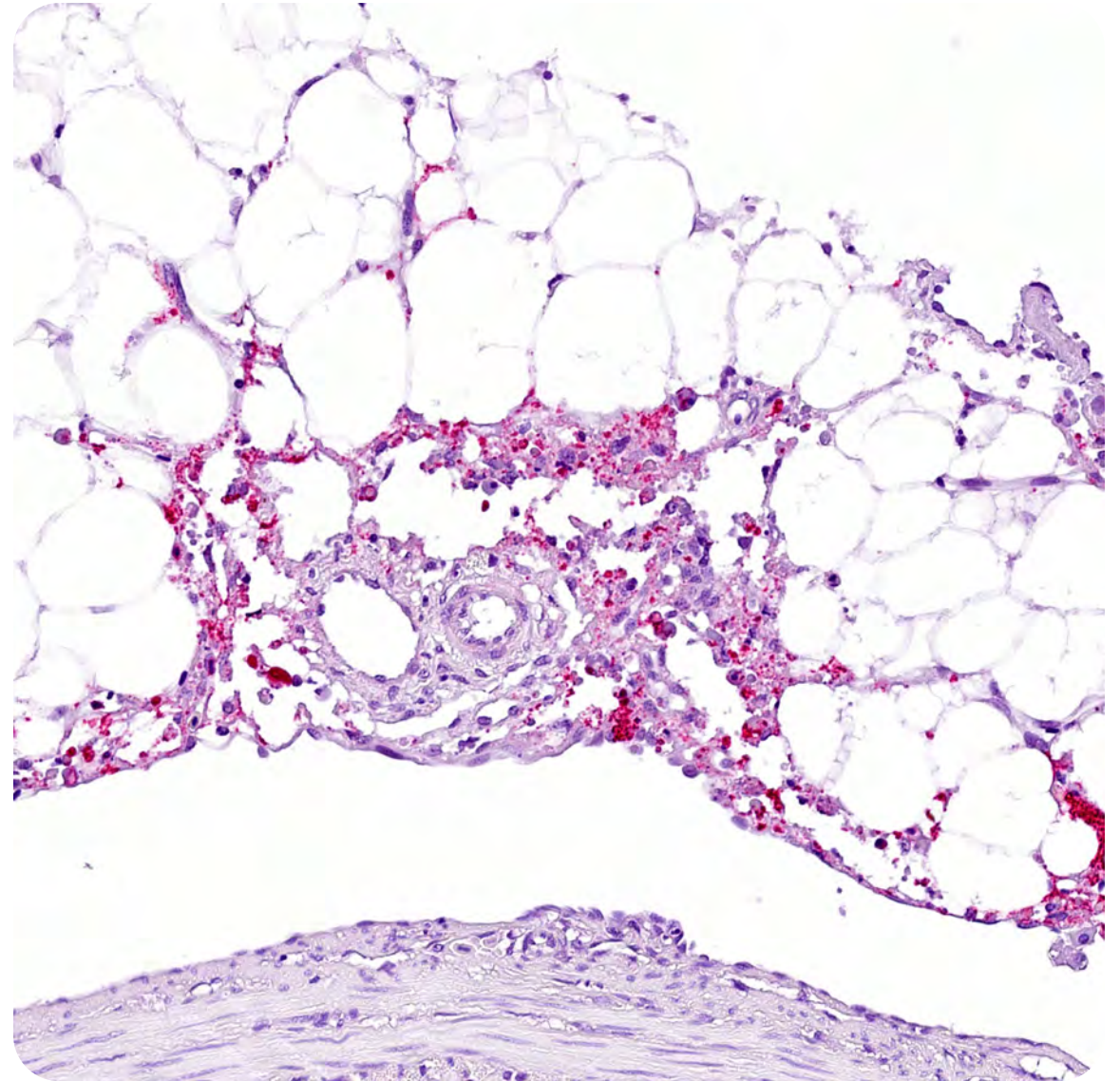


Photo: Anne Berit Olsen

Scientifically ambitious,  
forward-looking and cooperative  
– for One Health



Norwegian  
Veterinary Institute