



Veterinærinstituttet
Norwegian Veterinary Institute

The Health Situation in Norwegian Aquaculture 2020

25th Annual Workshop of the National Reference
Laboratories for Fish Diseases.

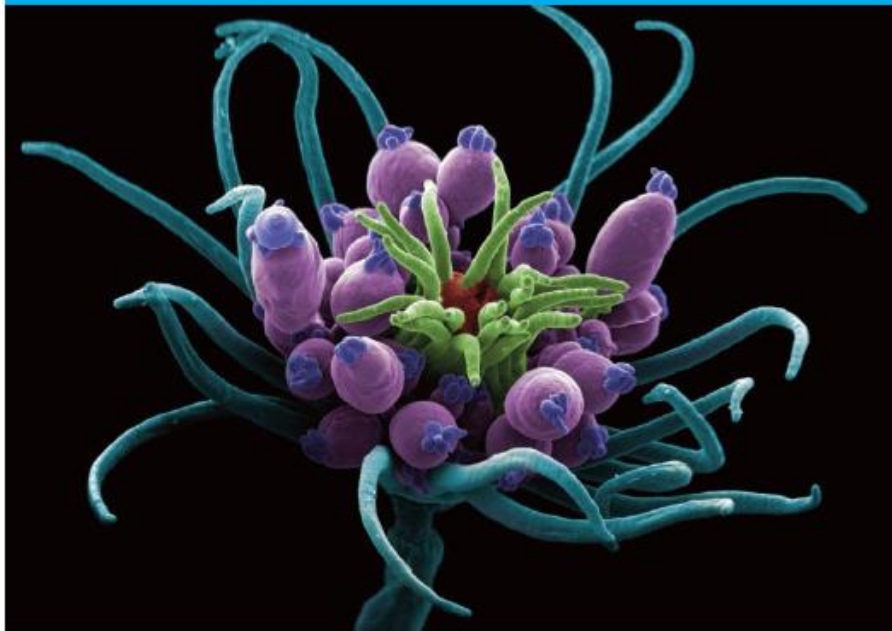
01 June 2021

Ingunn Sommerset (PhD)
Editor «Fiskehelserapporten 2020»



Fiskehelserapporten

2020

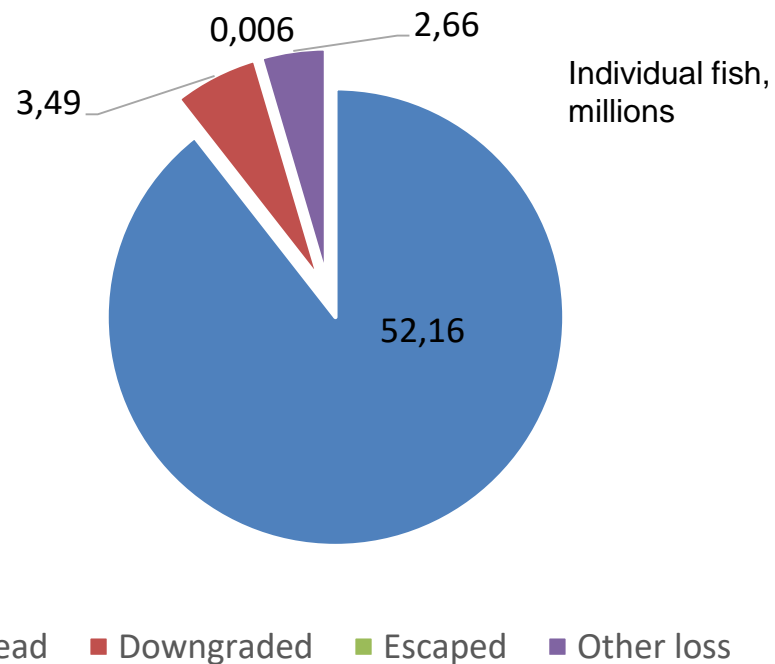


Nesledyret *Ectopoleura larynx* Foto: Jannicke Wiik-Nielsen, Veterinærinstituttet.

Atlantic salmon - losses in sea farms 2020

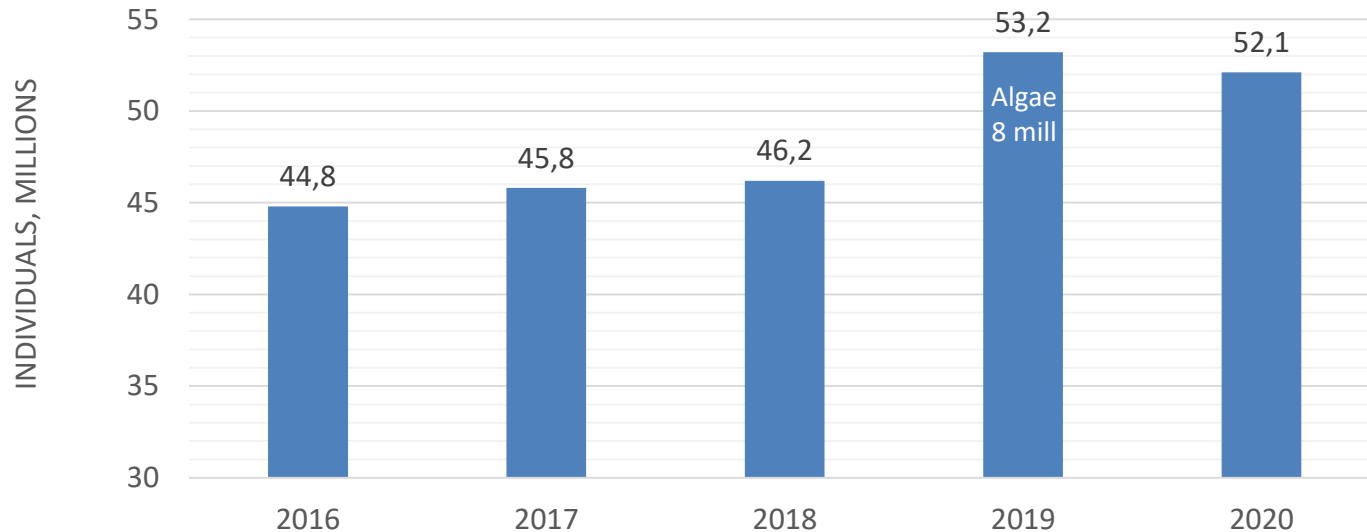


Foto: Per Anton Sæter



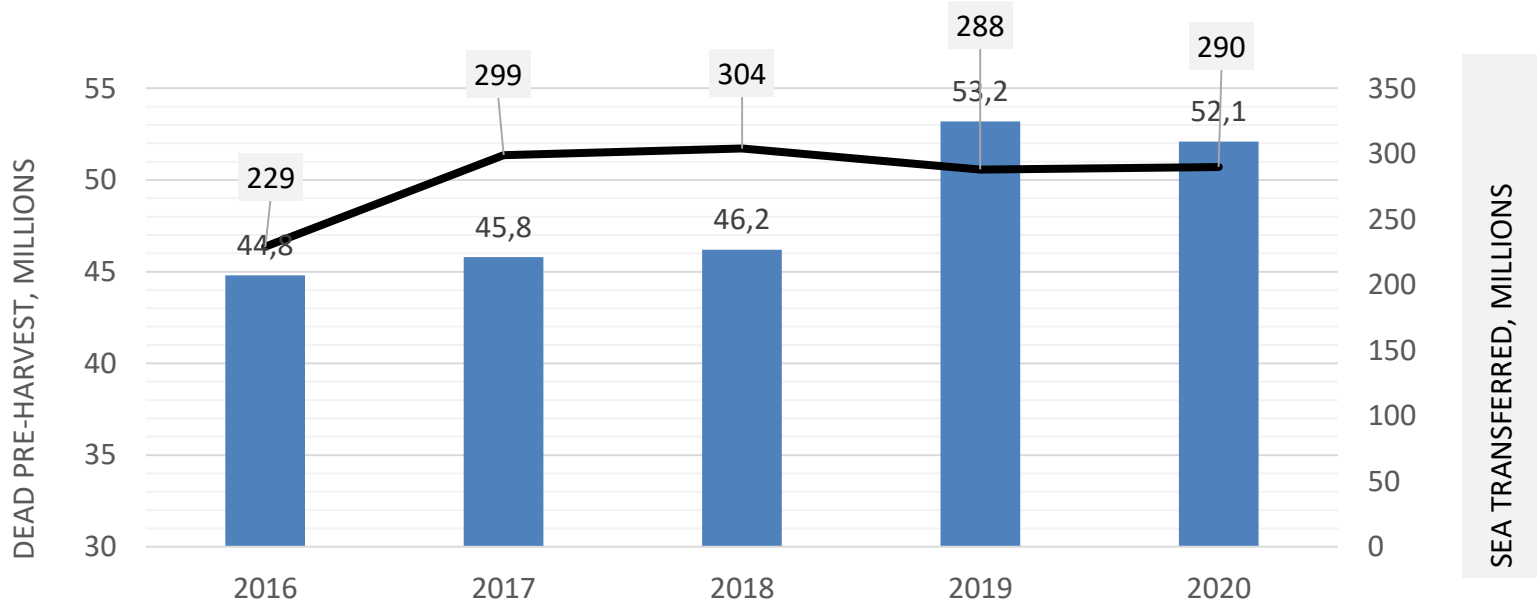
Source: Directorate of Fisheries,
April 2021

Atlantic salmon - annual mortality sea farms



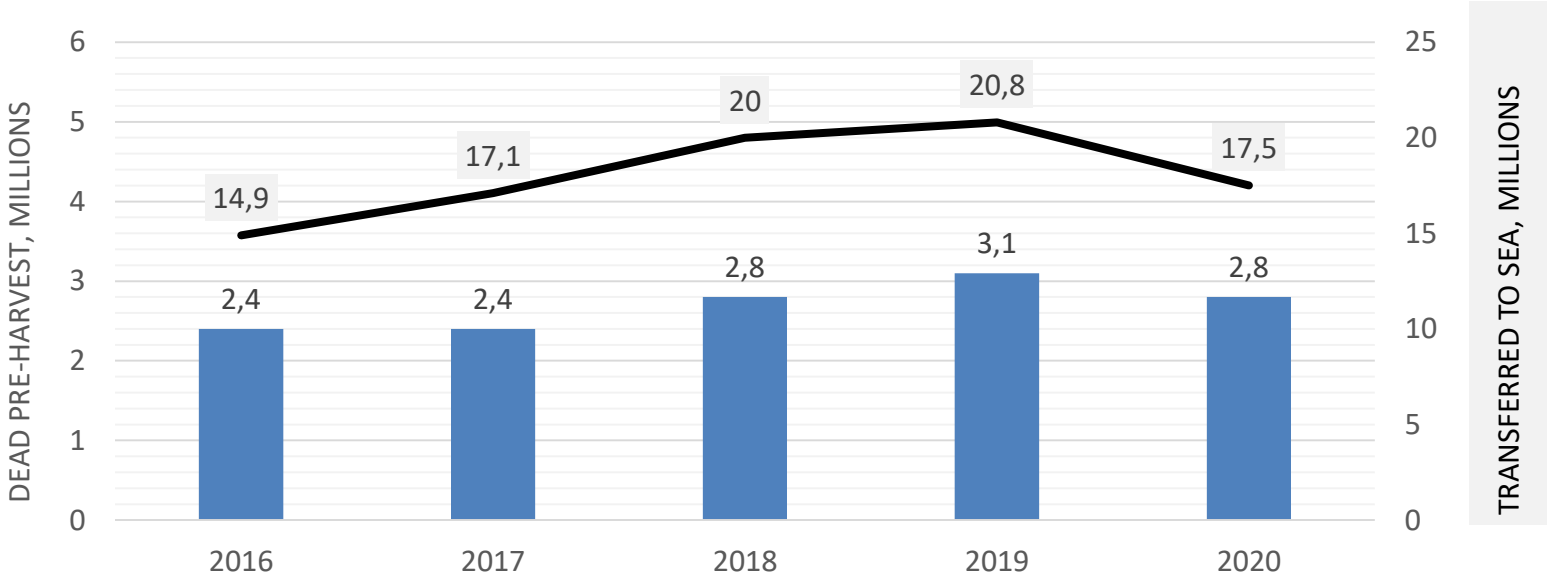
Source: Directorate of Fisheries,
January 2021

A. salmon: dead vs. sea-transferred individuals



Source: Directorate of Fisheries,
January 2021

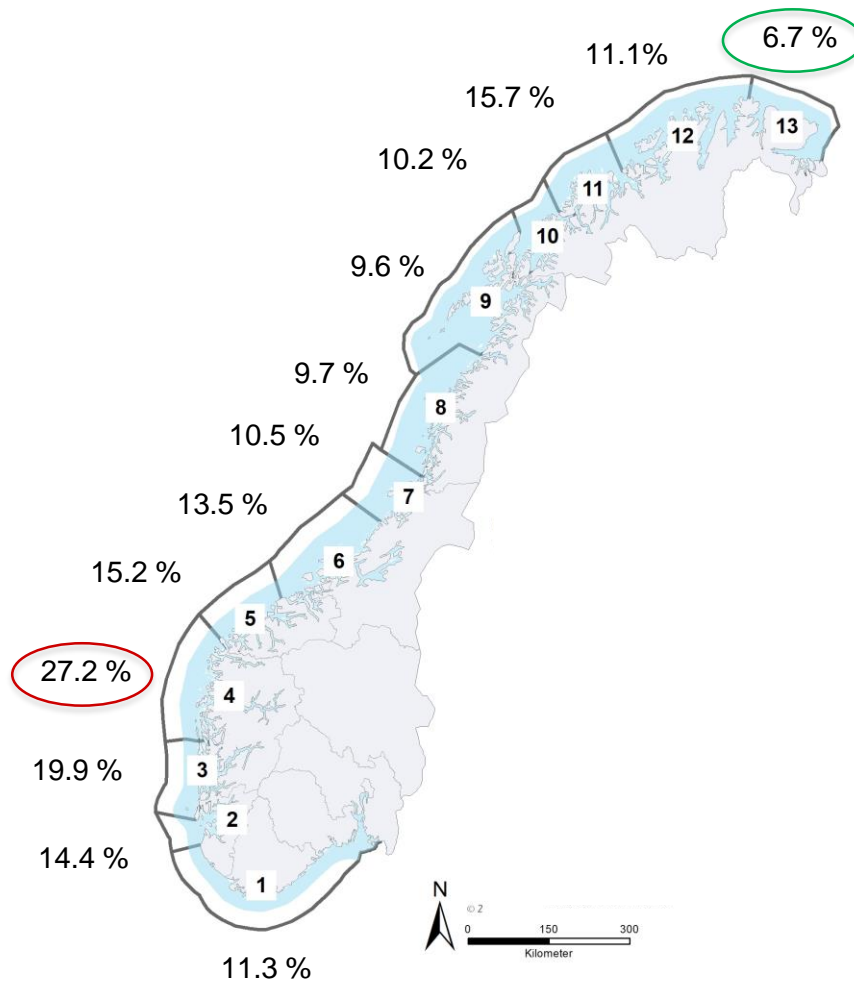
Rainbow trout: dead vs. sea-transferred individuals



Source: Directorate of Fisheries, January 2021

% mortality farmed salmon 2020

National:
14.8 %



Causes of death - different industrial initiatives to standardize and collect data



Revision NS 9417



Norges miljø- og biovitenskapelige universitet
Veterinærhøgskolen
Institutt for produksjonsdyrmedisin

2020
ISBN: 978-82-575-1711-3

Fagrapport

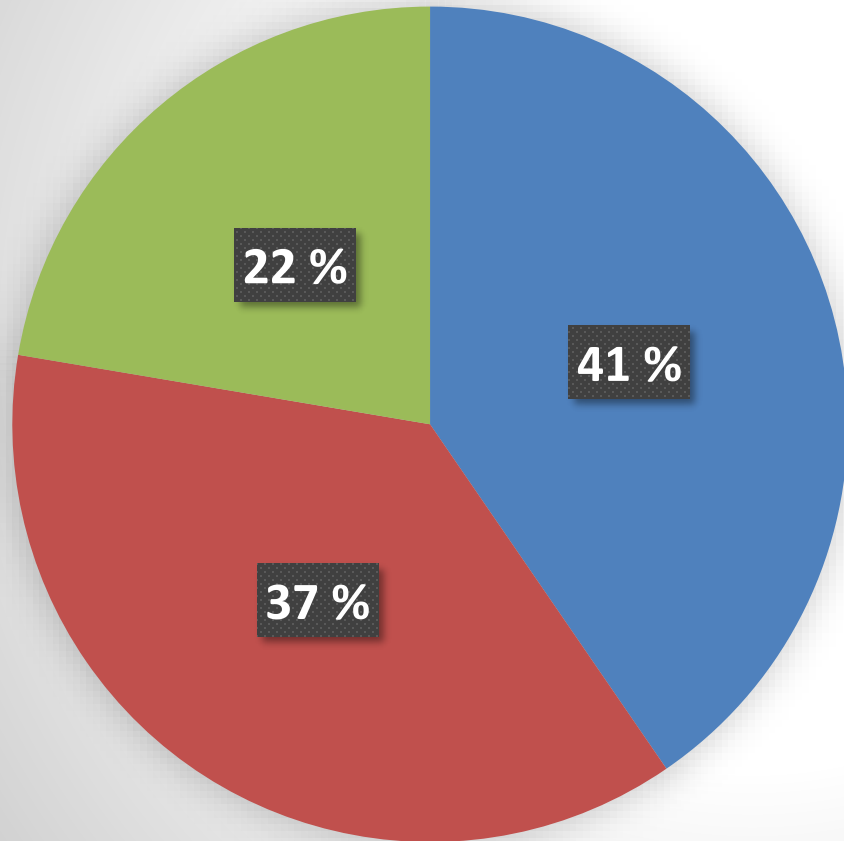
**Klassifisering av taps- og dødsårsaker i
akvakultur - forprosjekt**

Forfattere: Arnfinn Aunsmo, Marit Stormoen, David Persson, Paul J. Midtlyng

Dødsårsaker
(The train of events leading to death)



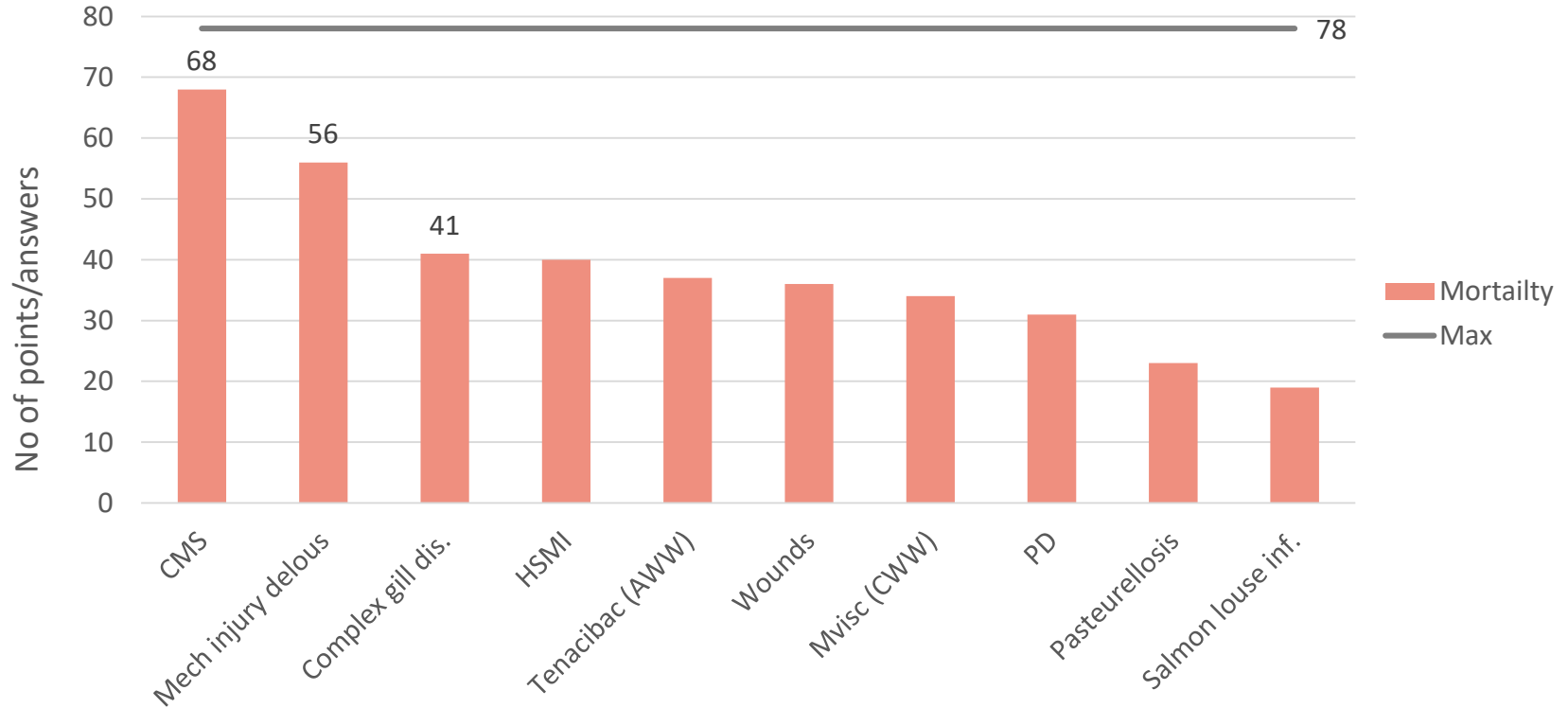
Fish health survey 2020



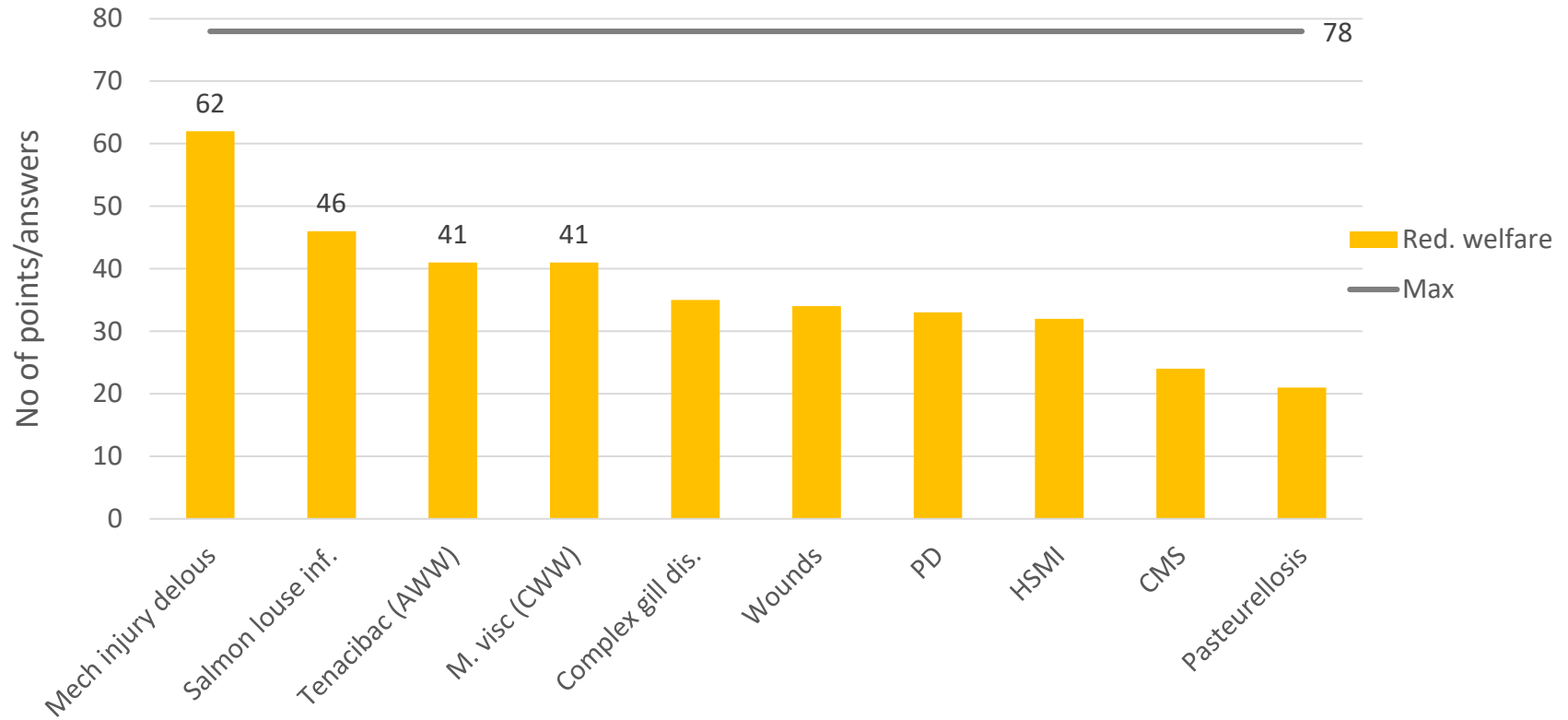
N = 92 responders

- External fish health personnel
- Internal fish health personell
- NFSA inspectors

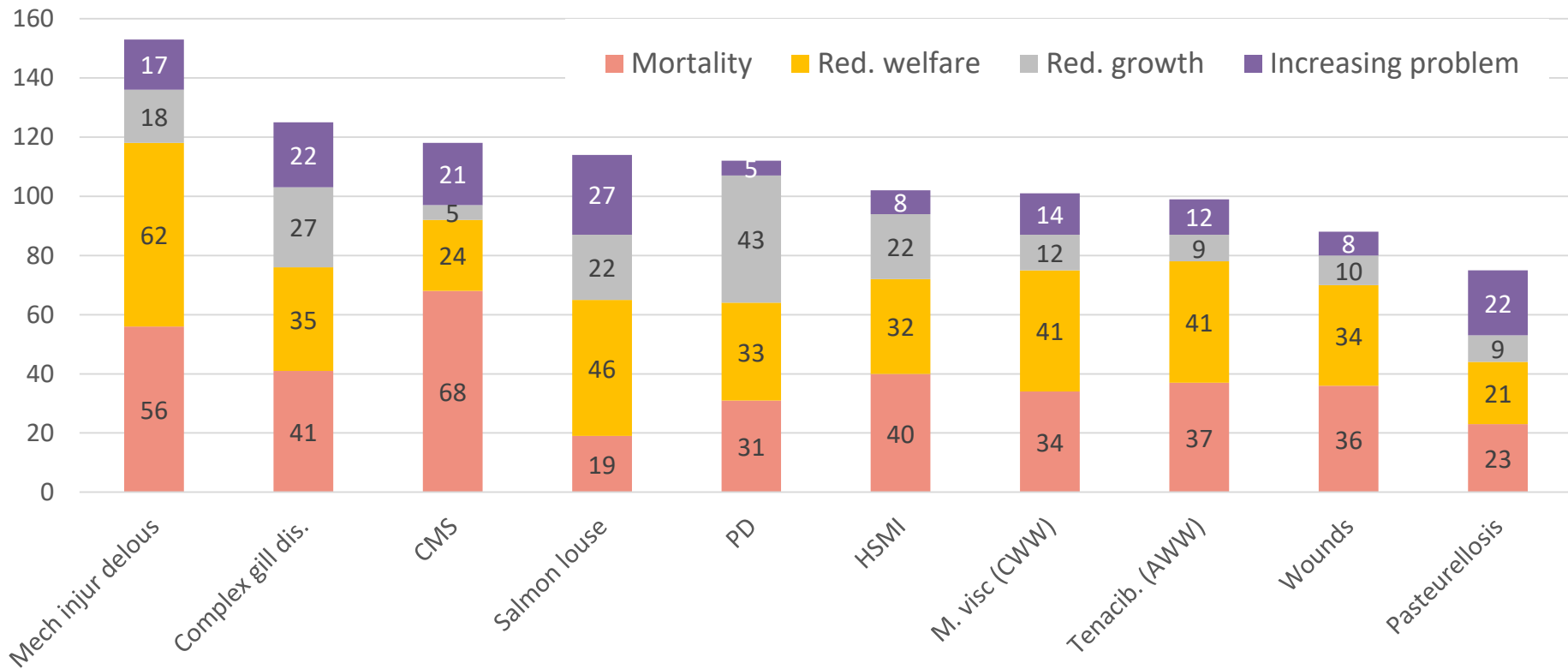
Top 10 – causes of mortality salmon sea sites



Top 10 – causes of reduced welfare salmon sea sites



Topp 10 problems – salmon sea sites





Juvenile (fresh water)
stage of salmon
farming

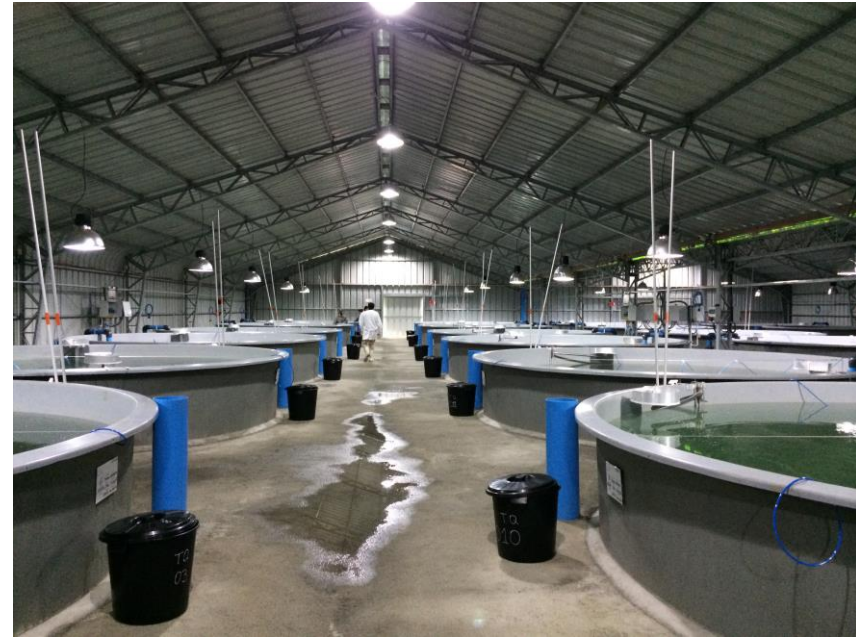
Foto: Johan Wildhagen

«Top 3»: Mortality:

- Haemorrhagic Smolt Syndrome (HSS)
- Nephrocalcinosis
- Ulcers

«Top 3»: Reduced welfare

- Nephrocalcinosis
- Shortened operculum
- Fin damage



Only *one* infectious disease among «Top 10»:
Infectious pancreatic necrosis (IPN)

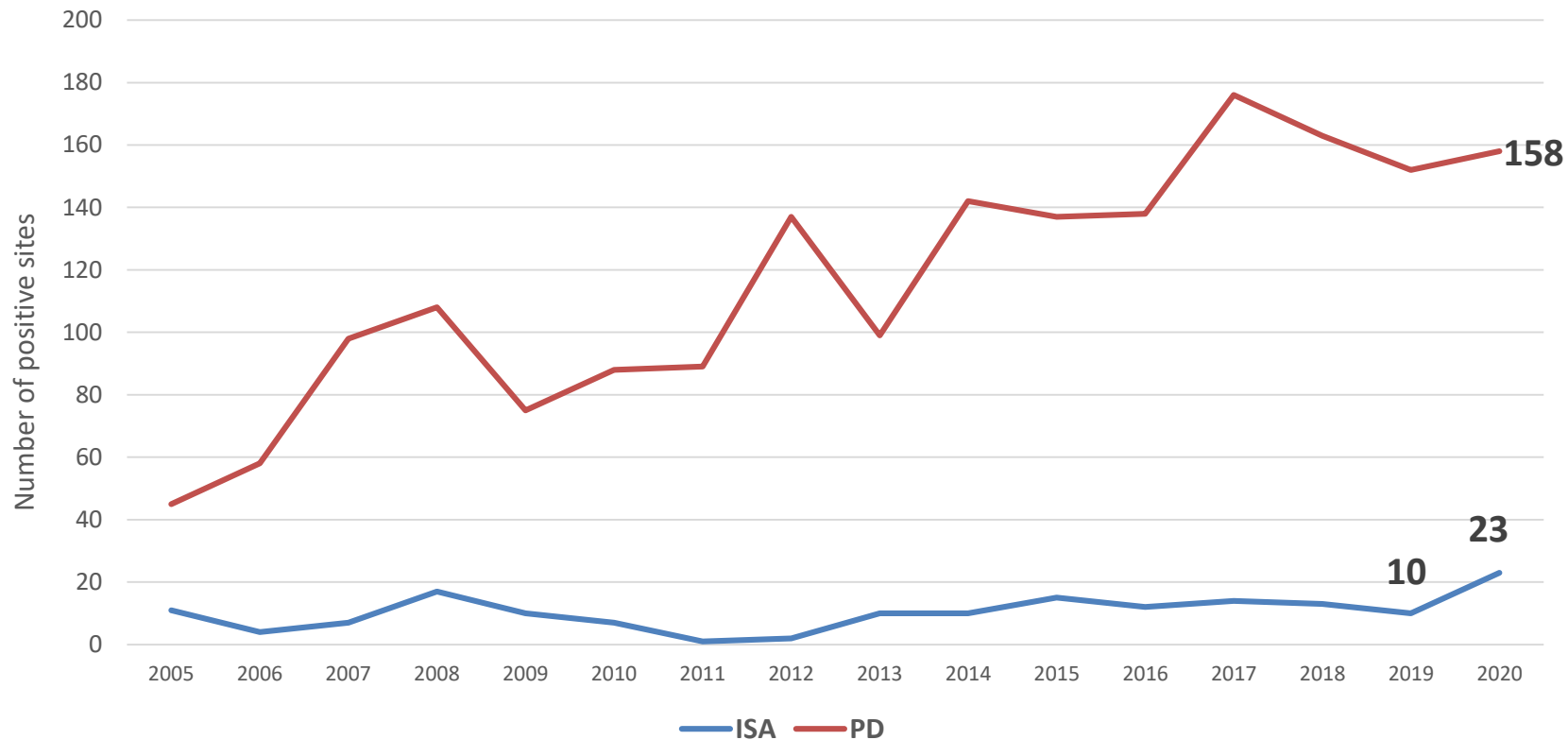
Foto: Ilaks.no

Data from diagnostic labs.



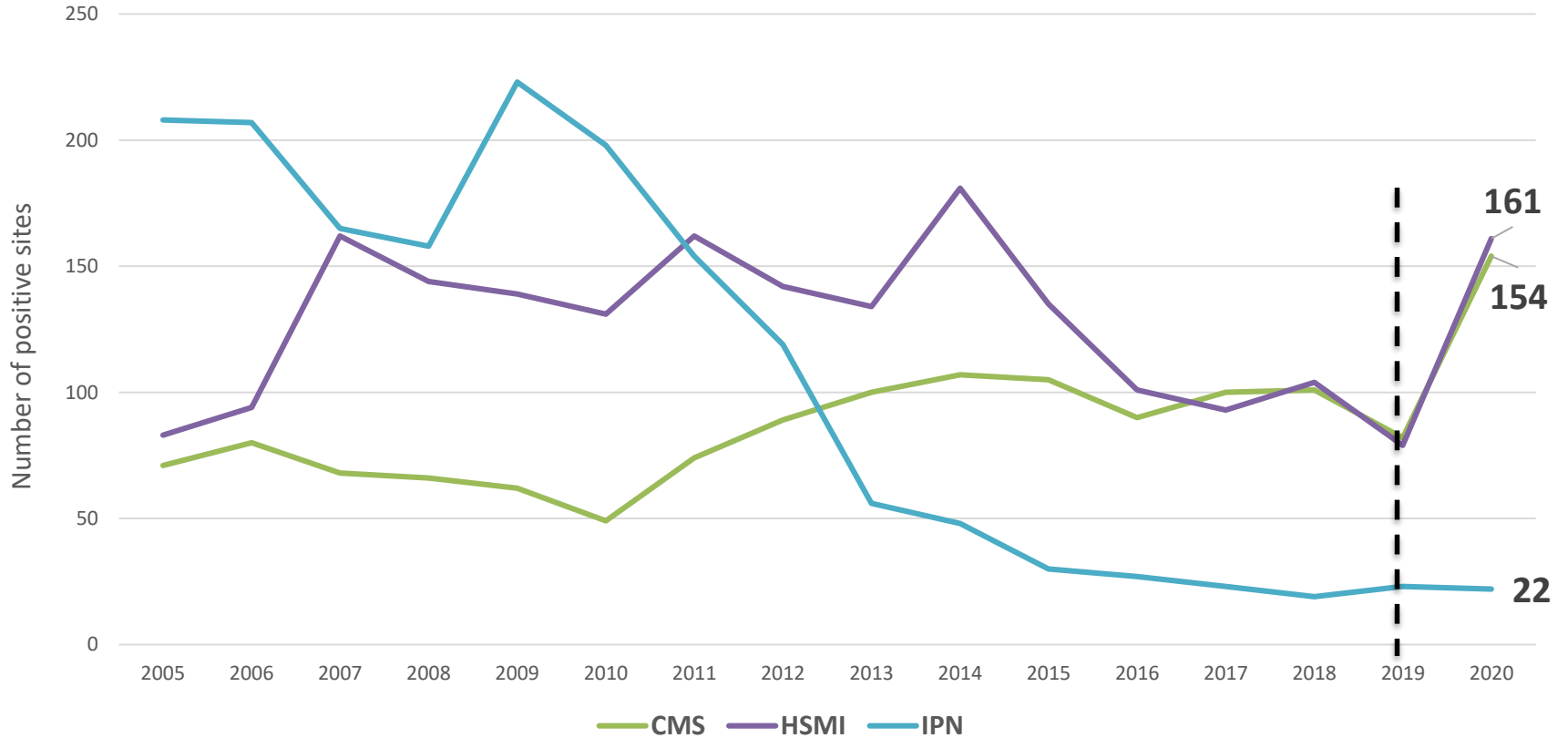
Photo: Eivind Senneset

Yearly detections of ISA- (list 2) and PD*- (list 3) positive farms in Norway

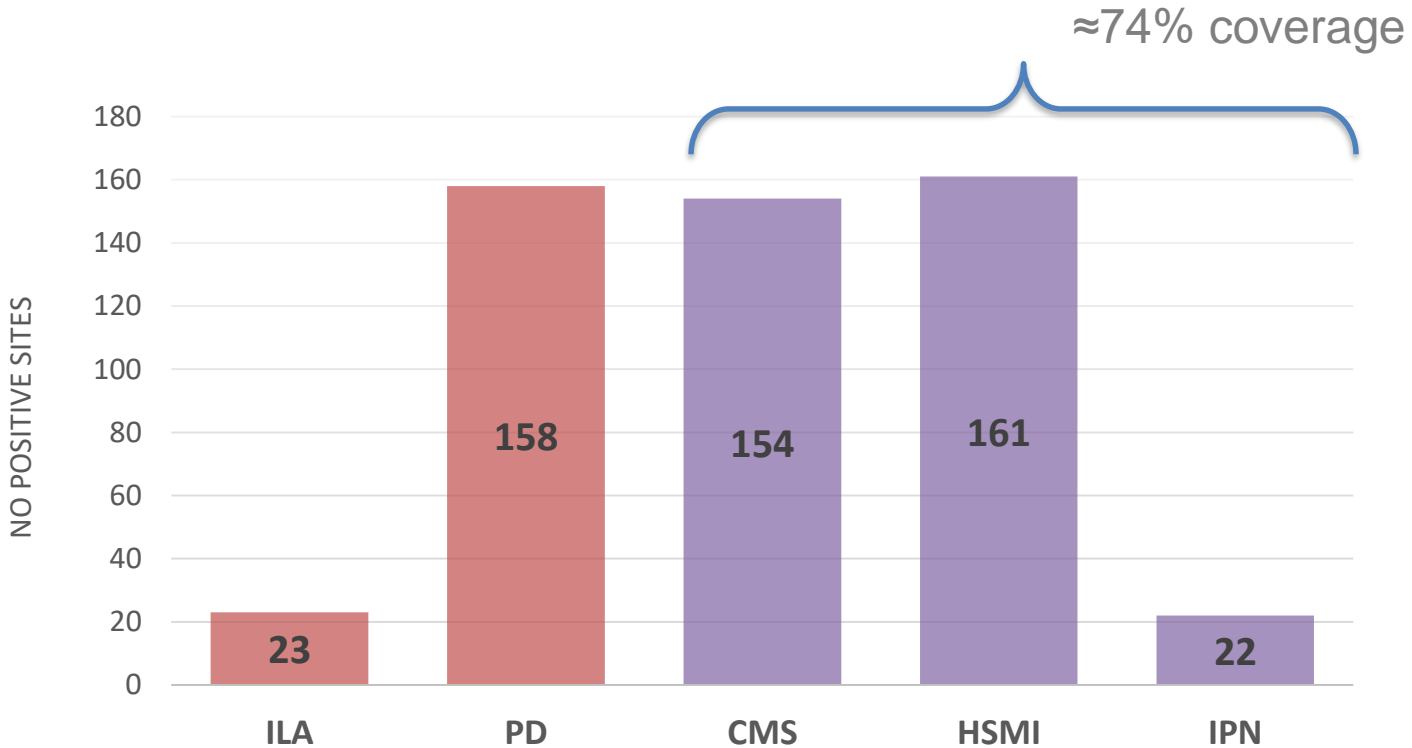


*confirmed + suspected

Yearly detections of important non-listed diseases 2005-19 NVI, 2020 NVI + private labs



Viral diseases farmed salmon and RT 2020



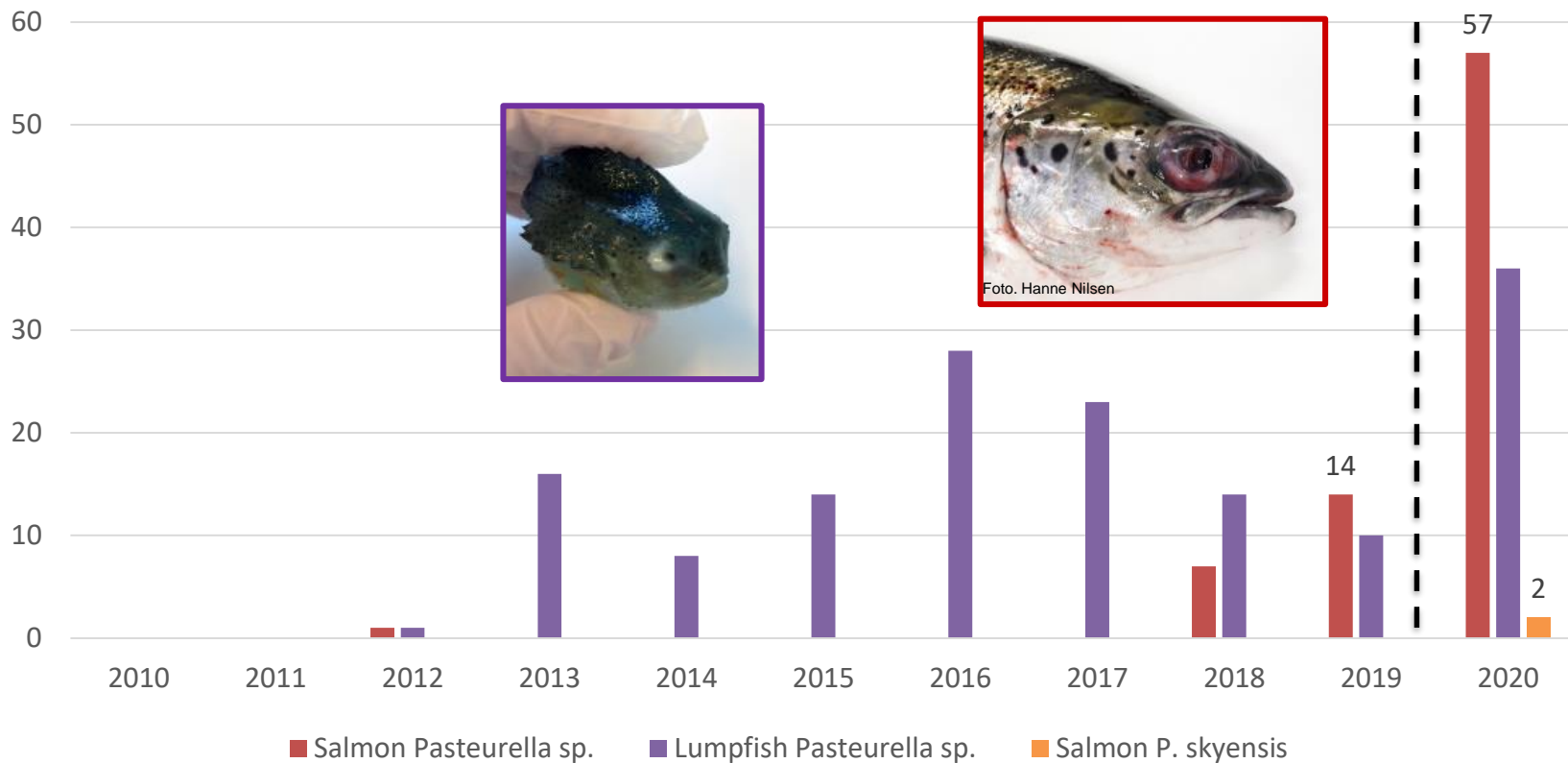
Bacterial diseases 2020:

- Few sites with listed diseases
 - BKD (1), systemic *F. phycophilum* in RT. (2)
 - Furunculosis in farmed salmon (5) !
 - Furunculosis in lumpfish (3)
- Non-listed diseases of concern
 - **Pasteurellosis**
 - **Winter wounds**
 - Classical, caused by *Moritella viscosa*
 - Atypical, caused by *Tenacibaculum sp.*



Foto: Eivind Senneset

Number of farms diagnosed with *Pasteurella* sp. infection



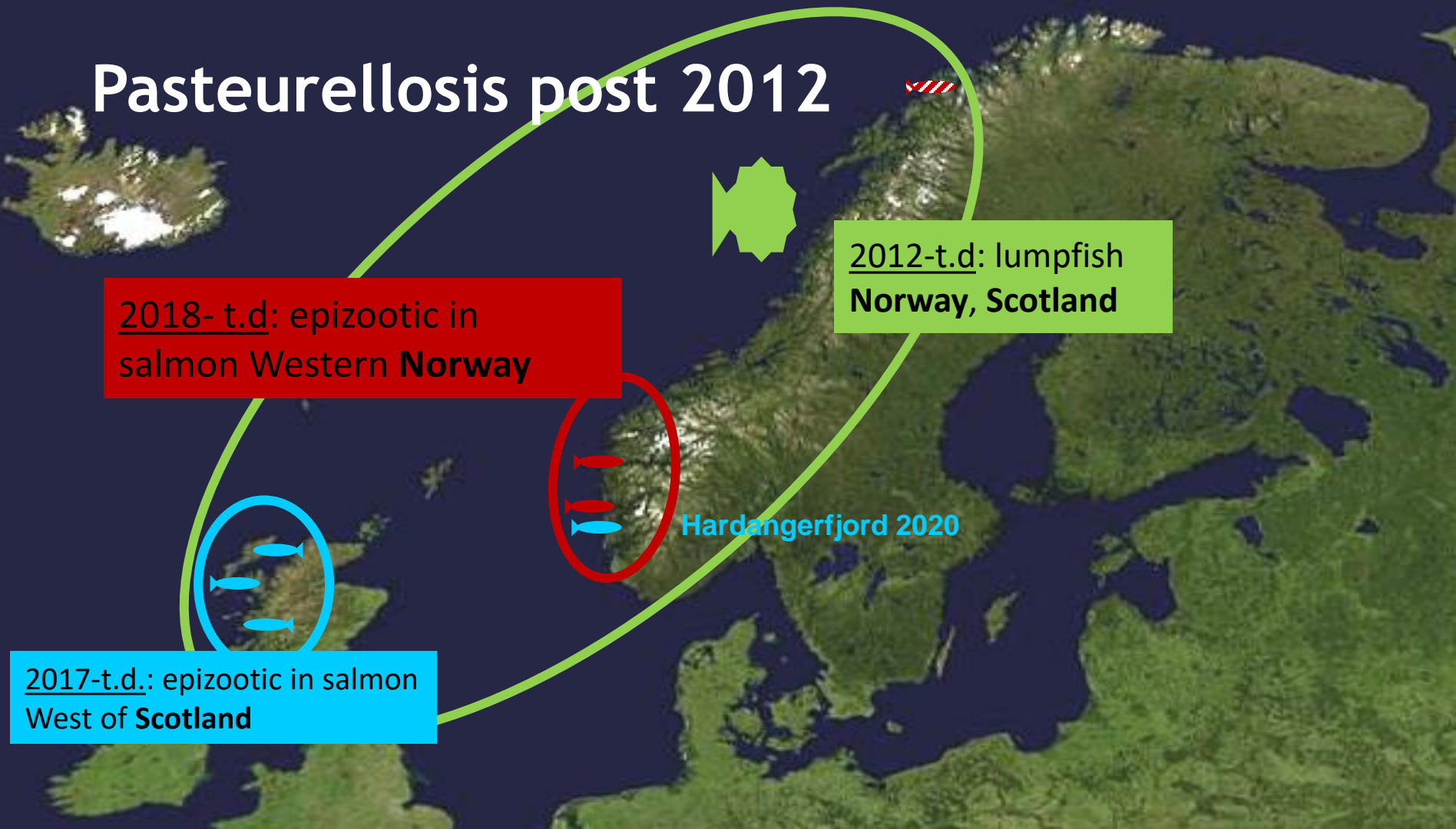
Pasteurellosis post 2012

2018- t.d.: epizootic in salmon Western **Norway**

2012-t.d.: lumpfish **Norway, Scotland**

2017-t.d.: epizootic in salmon West of **Scotland**

Hardangerfjord 2020



Summary - Norwegian fish health situation in 2020

- 52 million salmon died before harvest
- **Complex situation** - no particular event can be linked to the high mortality



Photo: P. A. Sæter

Summary - Norwegian fish health situation in 2020



Foto: Marianna Rouboti Viken

- Same- or higher prevalence of viral diseases
- Notable increase in salmon farms with **pasteurellosis**

Summary - Norwegian fish health situation in 2020

- **Mechanical injuries** connected to **non-medical delousing** rated on top as cause of reduced welfare for sea farmed salmon and rainbow trout
- Problems with **complex gill diseases** and **winter wounds**



Summary - Norwegian fish health situation in 2020 ... positive sides

- Northern Norway still «**PD-free**»
- **Low** consumption of **antibiotics**
- Few reported **toxic H₂S-episodes** in RAS-farms
- Increased focus on **data quality** and **collaboration** in order to improve fish health and reduce losses

Thanks for your attention!



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