

# AGD situation in south-western part of Norway

*Gill health initiative in Oslo, 21-23.05.2014*

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Veterinarian

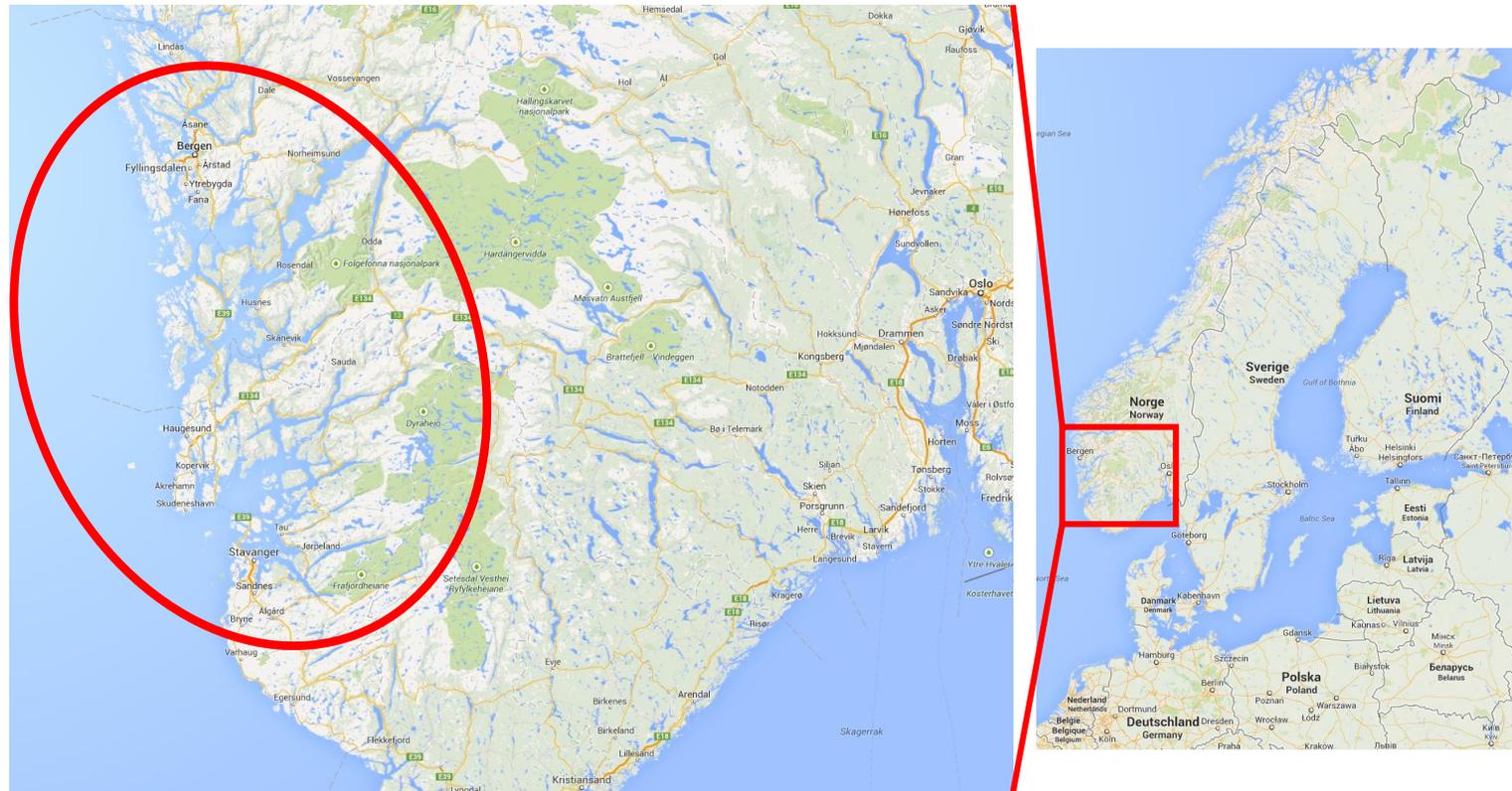
FoMAS – Fiskehelse og Miljø AS



# FoMAS

- *Provides fish health services and consulting for companies within the aquaculture industry*

- 4 offices in the region
- Head Office in Haugesund
- 10 employees with 8 veterinarians and fish health biologists



# AGD-history in Norway

2006 – First case of AGD in Norway.  
Published in Journal of Fish Diseases in 2008, T. Steinum et al.

2012 - To farms with gill problems at the end of November.

## Farm 1

- S1 (2012)
- 1,2 kg and seatemperature of 9° C
- Loss of appetite in 2 of 6 cages
- Clinical findings: Healthy fish with gill irritation with visible amoebas in microscope.
- Gill score: 1,9 in «non-diseased» cages  
2,6 in diseased cages
- Histology: Gill inflammation caused by amoebas
- PCR: Neoparamoeba perurans detected (Ct: 14,4-27,3)

## Farm 2

- S0 (2011)
- 3,5 kg and seatemperature of 9° C
- Increased mortality during licetreatment (pyrethroids)
- Clinical findings: Healthy fish with gill irritation with visible amoebas in microscope.
- Histology: Proliferation of epithelium with amoebic structures.
- PCR: Neoparamoeba perurans detected (Ct: 21,8-27,1)

# AGD-history in Norway

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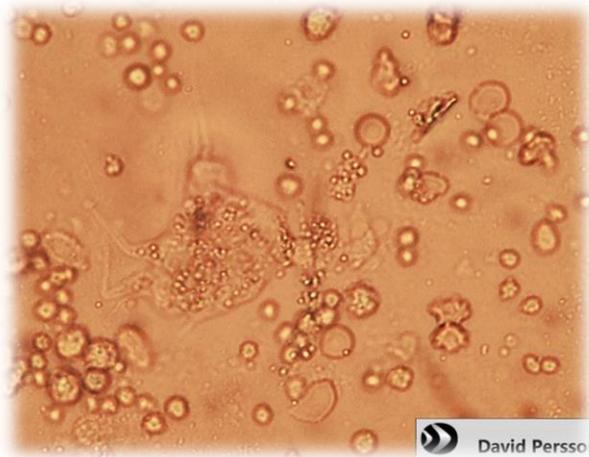
## Farm 1

- S1 (2012)
- 1,2 kg and seatemperature of 9° C
- Loss of appetite in 2 of 6 cages
- Clinical findings: Healthy fish, no visible amoebas in microscope
- Gill score: 1,9 in «non-diseased» cages, 2,6 in diseased cages
- Histology: Gill inflammation caused by amoebas
- PCR: Neoparamoeba perurans detected (Ct: 14,4-27,3)

## Farm 2

- S0 (2011)
- 3,5 kg and seatemperature of 9° C
- Increased mortality during licetreatment (pyrethroids)
- Clinical findings: Healthy fish with gill irritation with visible amoebas in microscope. Hyperplasia and proliferation of epithelium with amoebic structures.
- PCR: Neoparamoeba perurans detected (Ct: 21,8-27,1)

**No treatment!**



# 2013



# Data collected from 16 salmon farms

This project consists of available registrations from 2013 and winter 2014 on the participating salmon farms.

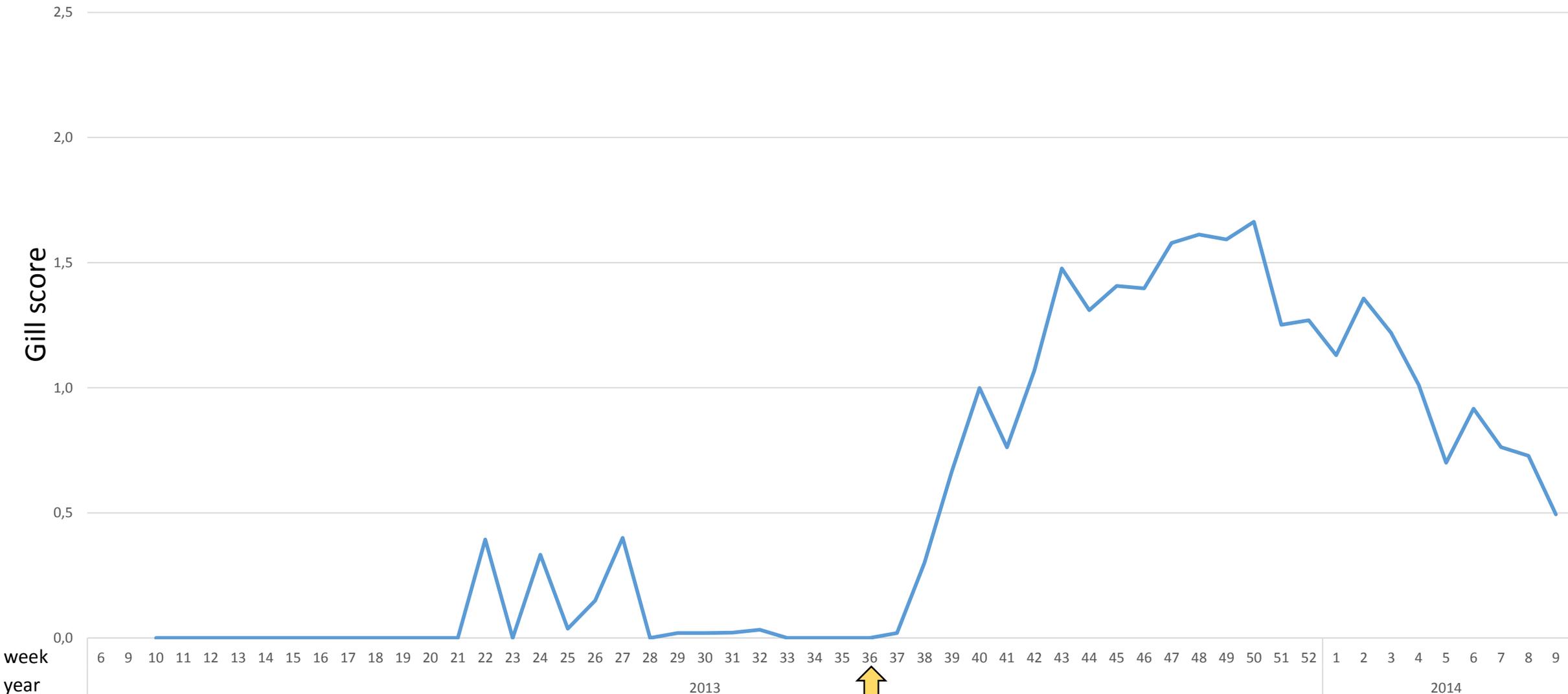
- Gill score
- Results from PCR and histology analyses
- Production parameters (from summer 2013)
- Environmental parameters (from summer 2013)

## ***Our objective:***

To use the observations from the data collected to improve AGD-strategic work and to pinpoint areas for further research.

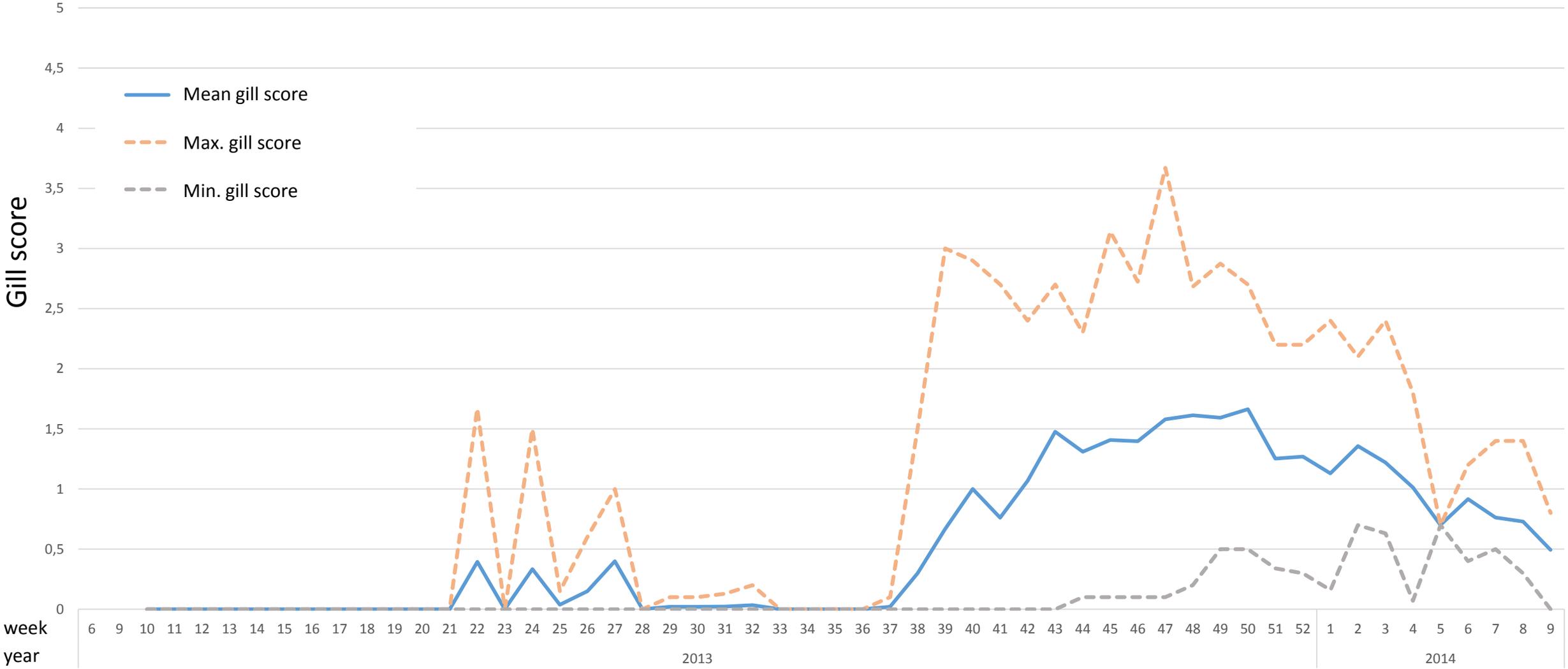


# Gill score

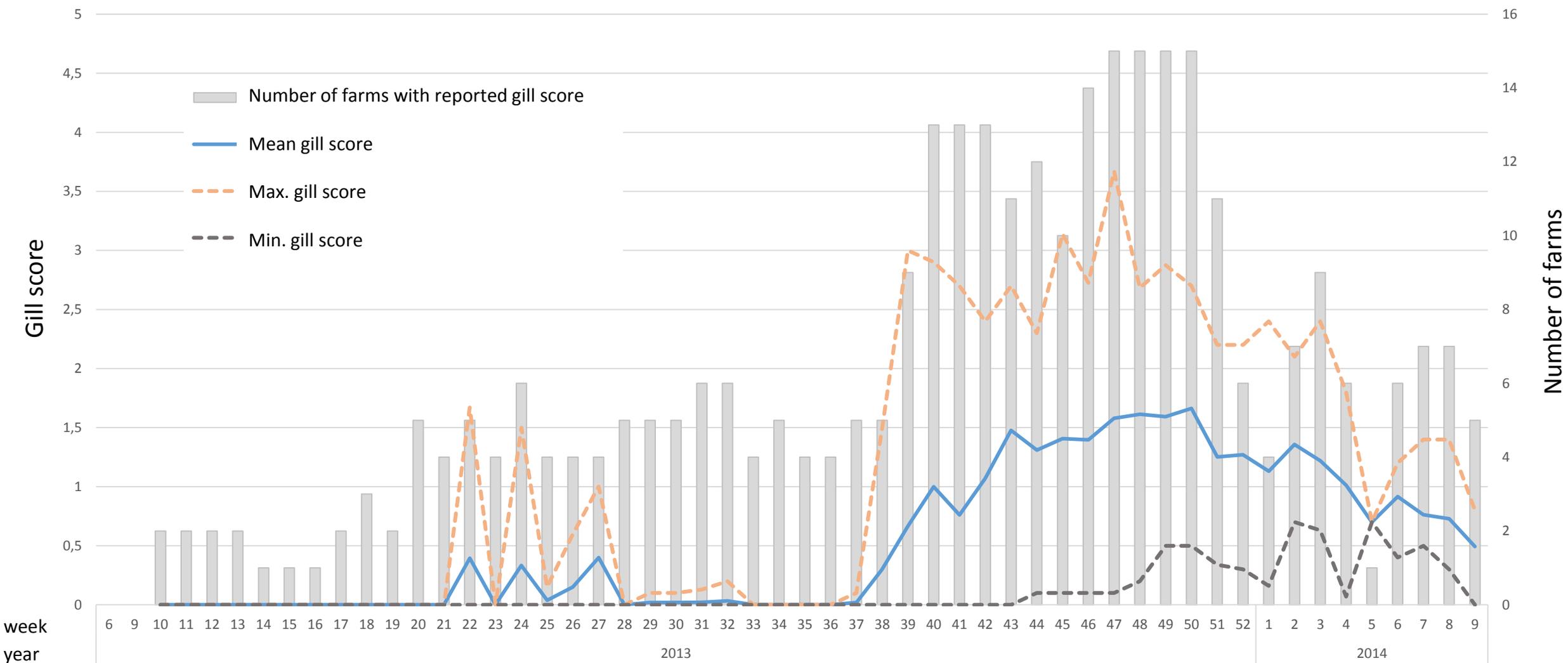


First PCR-detection

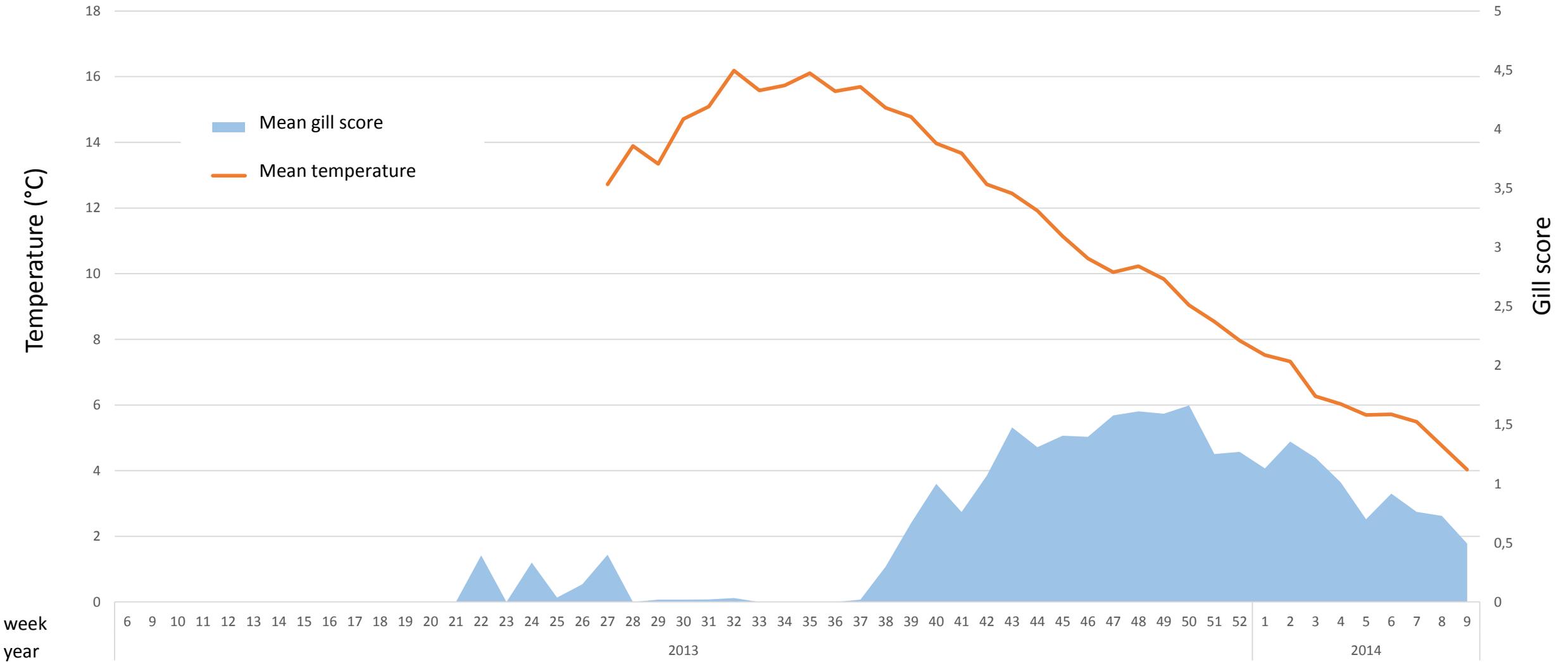
# Gill score



# Gill score



# Gill score



# 2013 Week 34

- = Positive PCR
- = First gillscore >0



# 2013 Week 35

- = Positive PCR
- = First gillscore >0



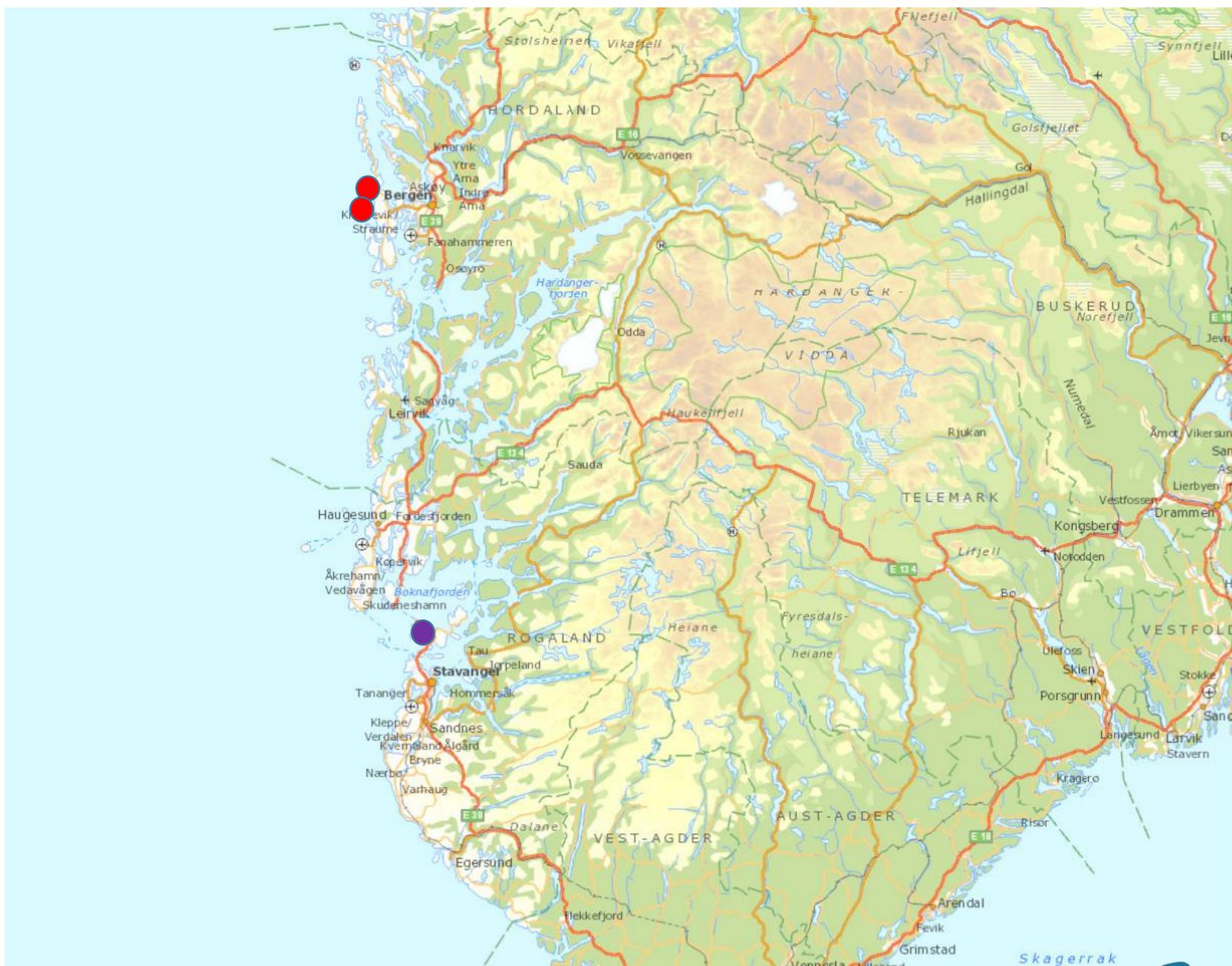
# 2013 Week 36

- = Positive PCR
- = First gillscore >0



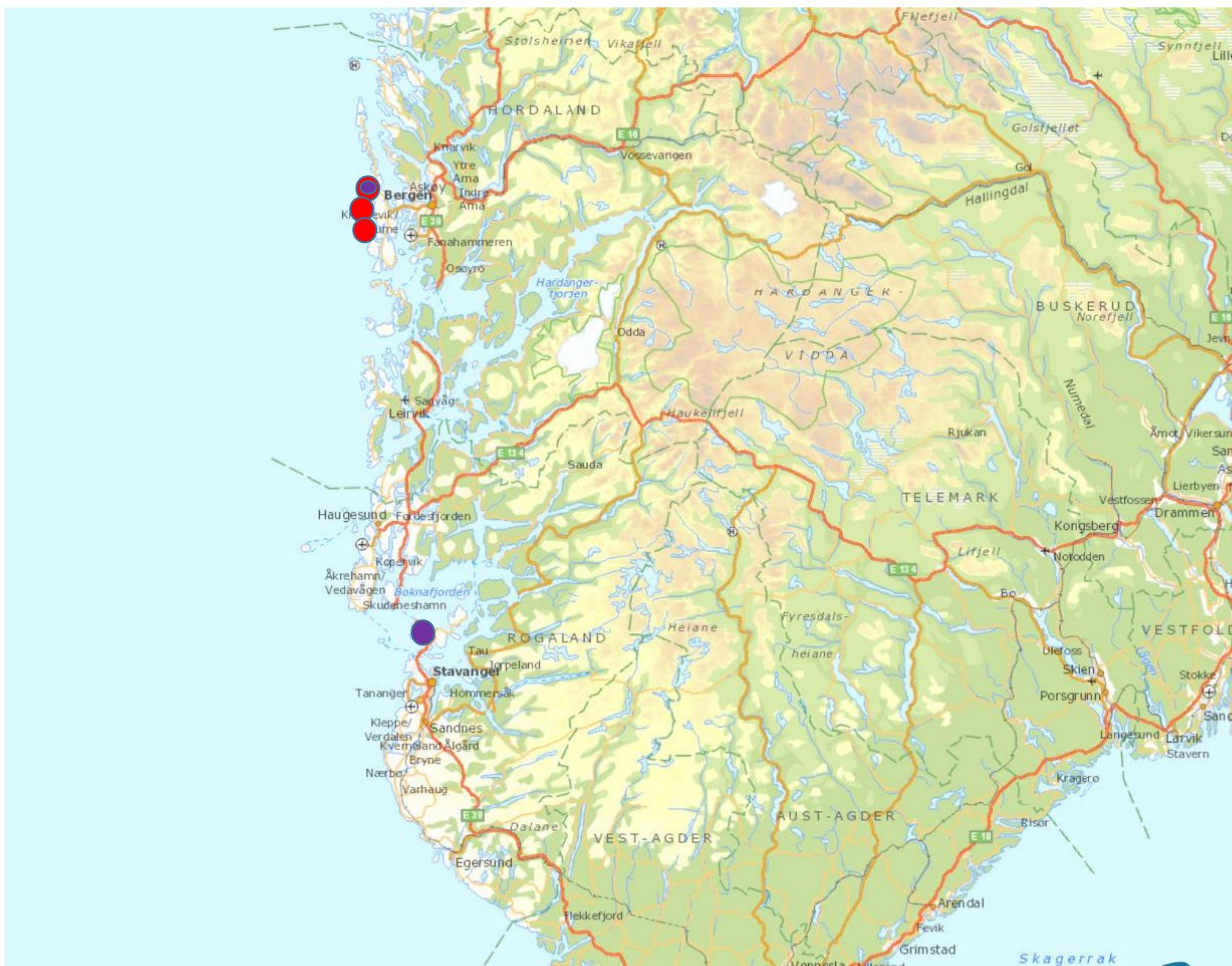
# 2013 Week 37

- = Positive PCR
- = First gillscore >0



# 2013 Week 38

- = Positive PCR
- = First gillscore >0



# 2013 Week 39

- = Positive PCR
- = First gillscore >0



# 2013 Week 40

- = Positive PCR
- = First gillscore >0



# 2013 Week 41

- = Positive PCR
- = First gillscore >0



# 2013 Week 42

- = Positive PCR
- = First gillscore >0



# 2013 Week 43

- = Positive PCR
- = First gillscore >0



# 2013 Week 44

- = Positive PCR
- = First gillscore >0



# 2013 Week 45

- = Positive PCR
- = First gillscore >0



# 2013 Week 46

- = Positive PCR
- = First gillscore >0



# AGD-situation in south-western Norway 2013

## Summary

- Gill score observations in May-June, but PCR and histology were negative for AGD
- Problems with «mechanical» gill damages during the summer and early autumn
- First PCR-positive farm for amoebas in week 36 (September)
- First farm with clinical signs (gill score) in week 37
- First treatment (H<sub>2</sub>O<sub>2</sub>) in week 40
- Within 5 weeks, most farms near the coast was infected
- Around Christmas the gill score started to decline
  
- Assessed by clinical signs (and histology) the problem seems to be multifactorial
- S1 during its first autumn in the sea is overrepresented

2014

???