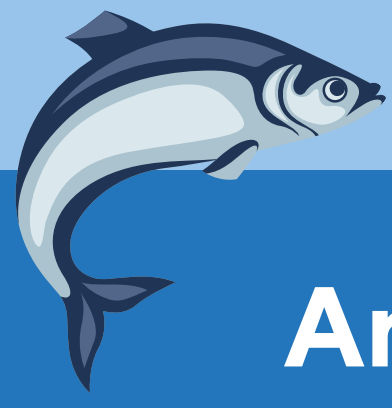


Assessing the effectiveness of PD regulations



An analysis of Pancreas Disease Control In Norwegian Salmon Farming

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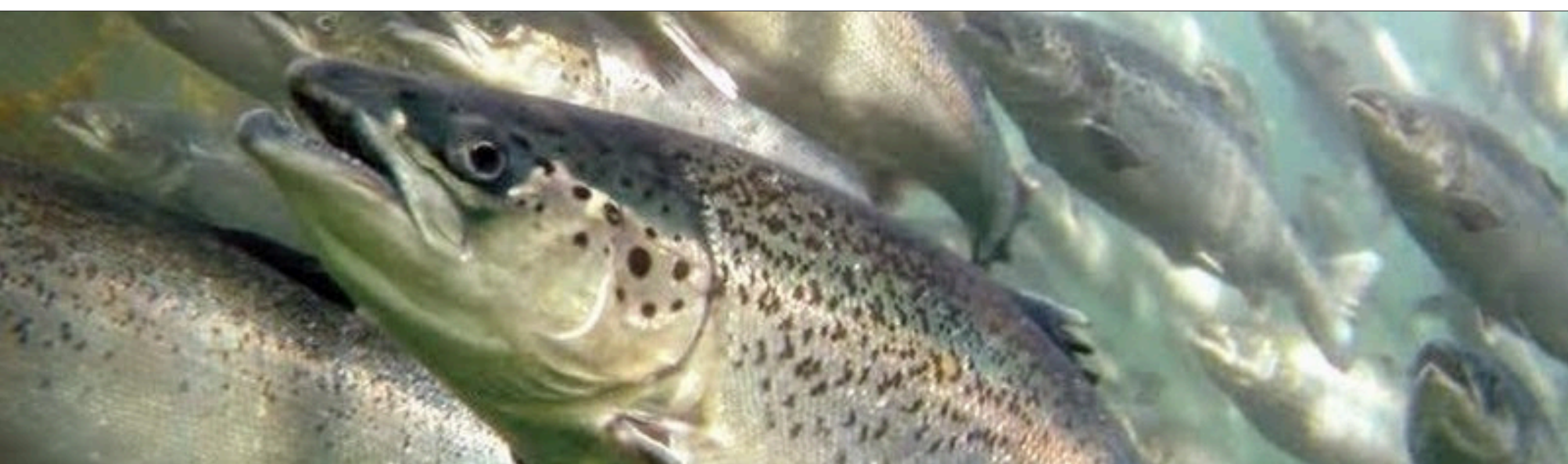


ABSTRACT

Pancreas Disease (PD) caused by Salmonid Alphavirus (SAV) is a persistent threat to salmonid aquaculture in Norway. In response to this issue, PD-forskriften was created to establish a defined endemic zone with strict biosecurity measures to help prevent the spread of PD. This study looks to evaluate the effectiveness of these measures by comparing infection trends before and after the implementation of the PD-forskrift across different aquaculture production areas using data from Barentswatch. Through statistical analysis and visualization in RStudio, the findings indicate a reduction in PD-infections within the endemic zone.

RESULTS/FINDINGS

- Area 2: Highest trend in 2018 (0.85), significant fluctuations with a notable drop in 2019 and a downward trend from 2022 onwards.
- Area 3: Highest trend in 2017 (above 0.75), with a decreasing trend from 2019 onwards.
- Area 4: Peak rate in 2021 (0.9) with a general increase until 2021 followed by a declining rate.
- Area 5: Highest rate in 2016 (0.9), observed a gradual decline after 2020, reaching a rate of 0.1 in 2023.
- Area 6: Peak rate in 2019 (0.8), observed a overall decline from 2019 onwards, lowest rate in 2024 (0.25-0.3)
- Area 3 and 7: Registered infection cases has decreased since establishment of PD-regulations in 2017.
- Overall Trend: Although certain areas has experienced individual rate increases, there is a general downward trend across areas from 2017 to 2024.

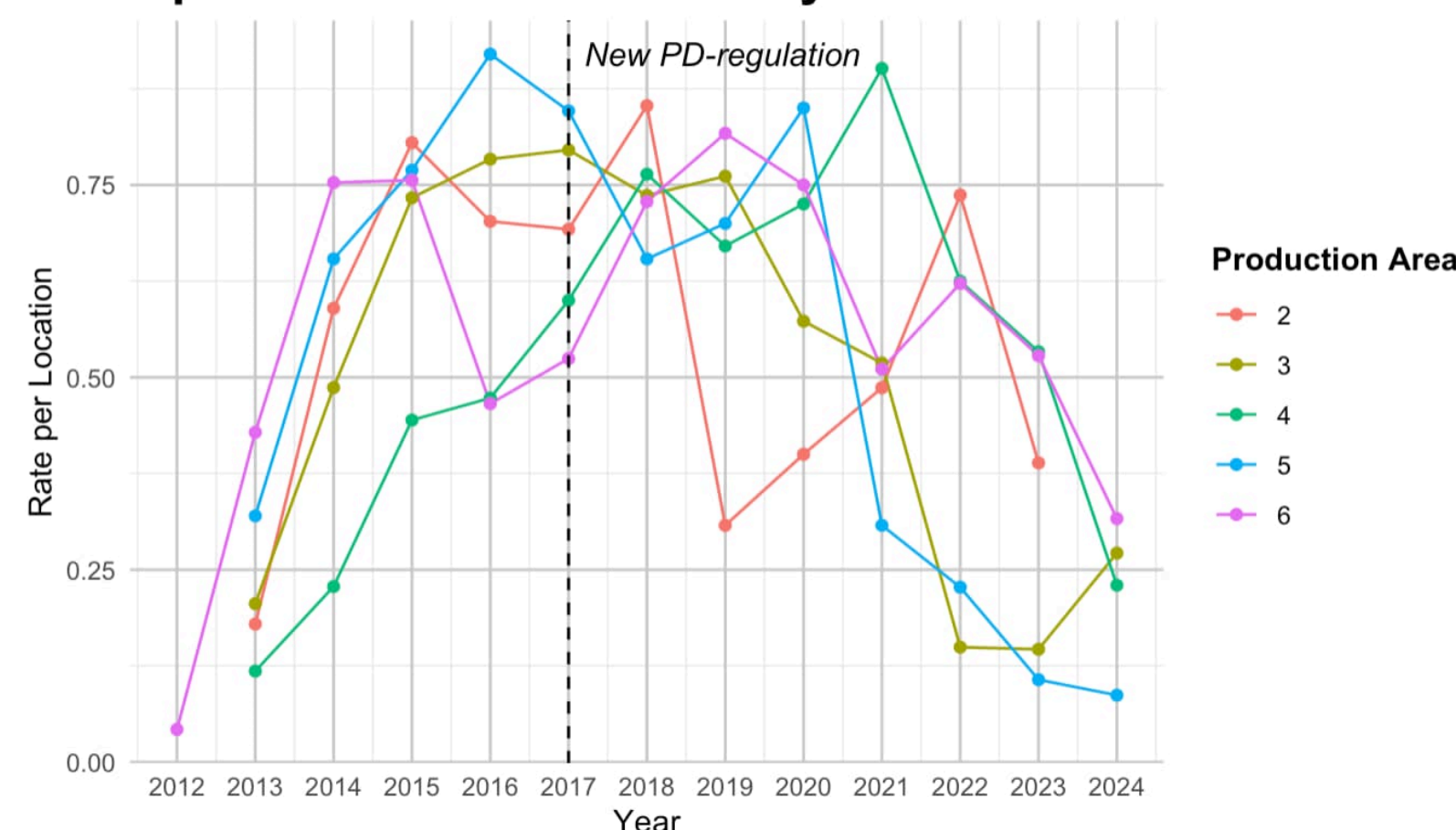


METHODOLOGY

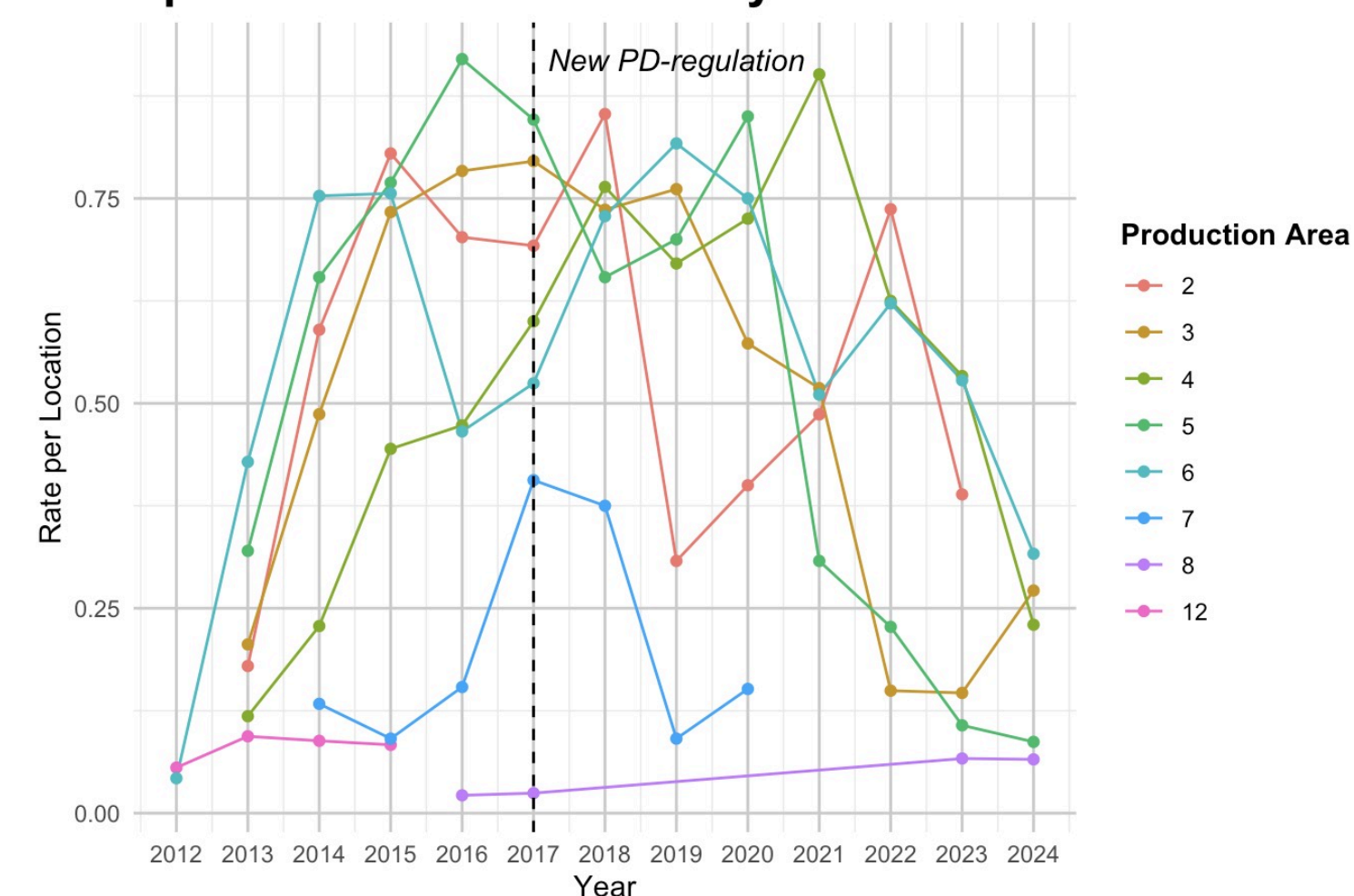
We created a trend chart for PD infection cases across production areas using data collected from Barentswatch (Sept 11, 2024, week 37) and processed in RStudio. The analysis includes only confirmed outbreak locations per year, excluding sites without assigned areas and duplicates. Average outbreaks per area were calculated based on active locations, focusing on sites with consistent salmon lice reports. Followed sites and unregistered locations were removed to enhance data accuracy, though some uncertainty remains due to following and registry gaps.

Trends in PD Outbreak Rates and Affected Locations Across Production Areas (2012-2024)

Rate per Location Over Time by Production Area



Rate per Location Over Time by Production Area



ANALYSIS

Figures 1 and 2 display PD prevalence across production areas from 2012 to week 37 in 2024. Figure 1 shows the number of locations with diagnosed PD outbreaks annually, while Figure 2 presents infection rates adjusted per location. Both figures highlight infection trends following the 2017 PD regulations, with a general decline in infection rates across production areas.

CONCLUSION

The results indicate a general decline in PD infections rates after the establishment of the PD-legislation and its restrictions in 2017. Despite some areas present fluctuations, the overall trend suggests that the regulations has contributed to reducing the impact Pancreas Disease has on Norwegian farmed salmonids.

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