

# Does degree of seasonality impact seasonal sea temperature's occurrence of adult female sea lice on farmed salmon?

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## Introduction

Salmon lice are a threat to the Norwegian farming industry financially and from a fish health perspective.

High temperature makes the development of salmon lice go faster than in lower temperatures (Oppedal, 2019).

Finnmark in northern Norway features a polar climate and low sea temperatures, while Rogaland in the south has a maritime climate and generally higher sea temperatures.

## Methods

The data used in this study was found through Lusedata.no. The data is based on the number of sea lice and sea temperature that each salmon facility in Norway reported to the Norwegian Food Safety Authority each week in 2022. The data were filtered using RStudio.

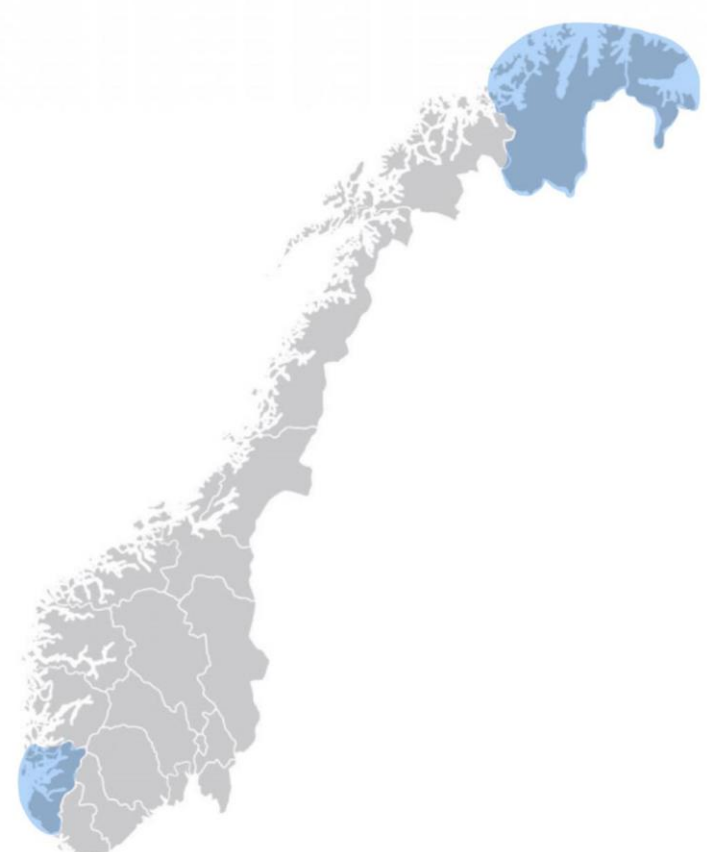


Figure 1: The studied regions, Rogaland and Finnmark.

## Results

The sea temperature throughout the year is in general lower in Finnmark than in Rogaland.

The number of adult female lice is higher in Rogaland than in Finnmark between week 0 to approximately week 40.

After week 40 there are more lice in Finnmark than in Rogaland.

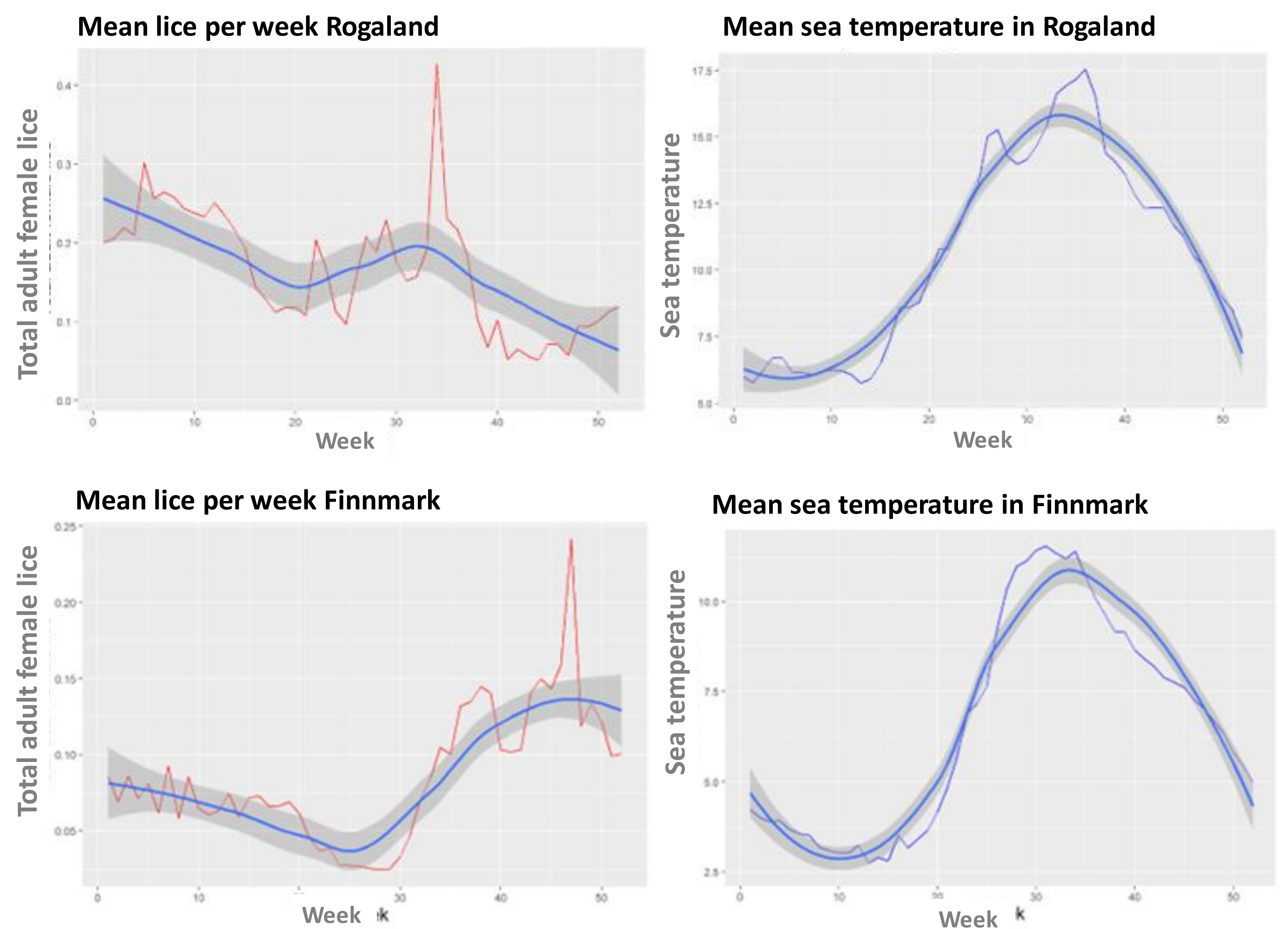


Figure 2: Comparison of the occurrence of adult female lice and sea temperature for the regions of Rogaland and Finnmark.

## Discussion & Conclusion

The sea temperature and sea lice numbers were in general found higher in Rogaland than in Finnmark throughout the year. Other factors that could affect the occurrence of sea lice are salmon density (the more salmon there are in the sea, the easier it is to find a host) and salinity (sea lice will avoid a salinity lower than 20‰).

*A higher sea temperature in Rogaland could be the main reason that the amount of sea lice was higher, but factors such as salinity and fish density should also be taken into consideration to get a more plausible answer.*

## References

- Lusedata.no (2022). Available at: <https://lusedata.hubocean.earth/> (Accessed: 10 November 2023).
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- Hurford, A., Wang, X., & Zhao, X.-Q. (2019). Regional climate affects salmon lice dynamics, stage structure and management. *Proceedings of the Royal Society B: Biological Sciences*, 286(1904), 20190428. <https://doi.org/10.1098/rspb.2019.0428>



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