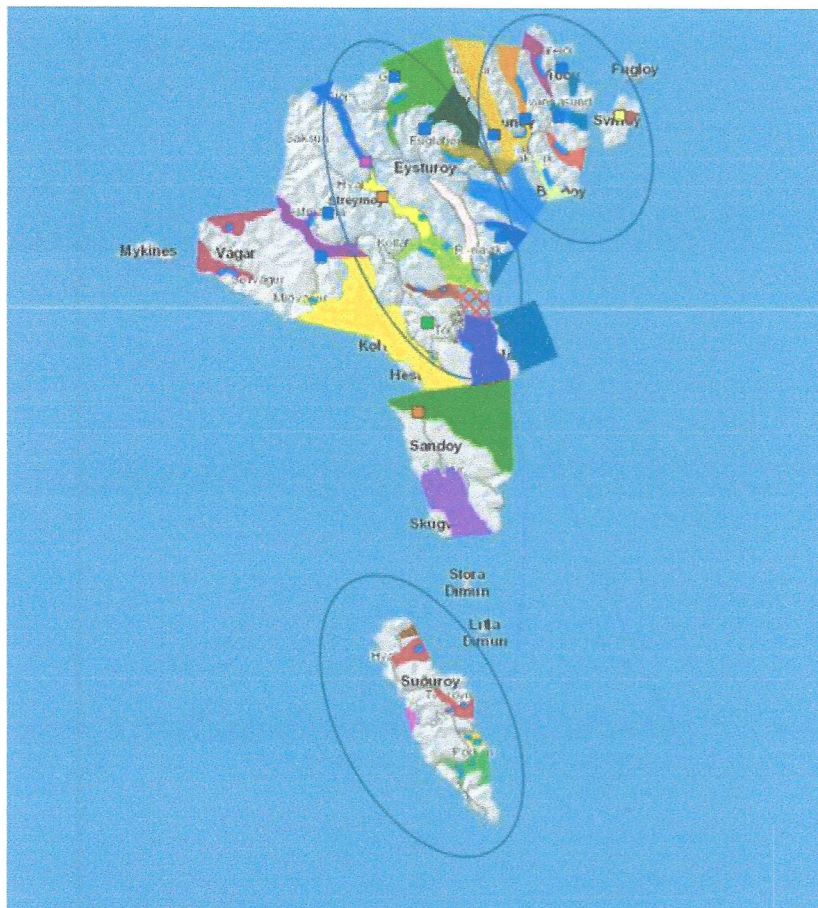


Integrated pest management for the control of sea lice.

Sea lice are horizontally transmitted between hosts and an area management program is central in preventing the potential spread of lice from farm to farm. A good preventive plan requires an understanding of life cycle of the parasite and a thorough knowledge of farming areas.

The companies farming areas are divided into regions and farming fjords. Coordination of area management strategy is divided between two farming managers, coordinating respectively the north region and the west/southern regions. Each region has over the years developed best practice with regards to stocking strategy, preventive measures and treatment strategy to consistently reduce internal and external lice infestations pressure, and thereby ensuring low overall lice numbers.



The treatment and preventive strategy in order to control sea lice at our farming sites has its foundation in area management of the regions. As a means to avoid and reduced treatments to the lowest possible number, stocking of sites is carefully considered. As far as possible, farming sites know to transmit lice between areas are stocked at the same time, thereby coordinating the production cycle. Faroese farming legislations also appoints that farming sites in the same farmingfjord, must conduct a strict area management of the sites, with coordinating stocking and farming operations.

An important tool in coordinating and optimizing the companies treatment strategy, is statistical modelling of lice development in the different regions, through forecasting data models specially designed for local conditions in the Faroe Islands. These models can accurately predict lice developments in a fjordsystem and is crucial in organising preventive measures in time, and refining optimal treatment efforts in these systems.

Shortening of the production time at sea is the most important measure to reduce lice numbers. Producing larger smolts has been a major aiming point in the company's investment programme. In the coming years the smolt size will increase gradually, resulting in shortening of the production time at sea. This will result in a more frequent breakage in the sealice lifecycle, which is dependent on live hosts to reproduce. Treatment and preventive strategy should be easier under these conditions and this will also give some possibilities to reconstruct the area management strategy.

Treatments against salmon lice consist mainly of non-medical treatments methods, using thermal treatments and using the FLS flushing system. These systems are installed onboard the companies farming supply vessels for mechanical delousing, with specialized crew who are focused on refining their skills in mechanical treatments. Although good results are seen with these methods, welfare challenges associated with these methods are a concern, and it is therefore important to carefully address these handling and welfare challenges. Skilled staff and reducing treatments are most important actions to alleviate negative impact of treatments.

Medical treatments against salmon lice have been reduced gradually over the past years, and is now at a very low level. Medical treatments are reserved to difficult cases, and is used when this is the best option with regards to animal welfare or when indicated in an overall treatment strategy. When used, medical treatments are always used in rotation with other treatment options or preventive measures, to reduce the risk of sealice developing resistance towards active ingredients.

Lice numbers are consistently being monitored on all farming sites. Every 14th day an independent third-party institution (Fiskaaling – Aquaculture Research Station) are counting lice on all farming sites. Lice counting results are publicly available. Constant monitoring and obtaining a reliable overview of the lice situation on our farming sites is a basic necessity to manage a good treatment strategy.

Cleaner fish is used as a preventive measure to control salmon lice. Cleaner fish have a continuous preventive effect, delaying increase in lice numbers, and reducing number of treatments. Some sites have used cleanerfish exclusively, where no other treatments methods have been necessary through the whole production cycle. Lumpfish is the only species used as cleaner fish in the Faroe Islands. The biology of the lumpfish is quite different from the salmon, and it can be challenging to adapt the cage environment to optimize thrive of this species. There is a continuous progress in learning which feed and environment is the best for the lumpfish, to secure the welfare of this species in the salmon cage environment. The cleaner fish strategy is continuously reviewed, to optimize the efficacy of their lice reducing effect, and to increase survival and welfare of this species.



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