

# Solving The Salmon Lice Epidemic?

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## The Aim OfThe Study.

The aim of our study is to investigate at what stage a salmon lice falls off a salmon after being treated with RNA interference and the down regulation of a protein called LGP3. The targeted protein is involved in suppressing the immune response from the salmon and it will cause an increased chance of falling off before it develops into the later stages of its life cycle. Understanding the timing of this process will provide valuable information for developing new treatments for salmon lice infestations and improving the welfare of farmed salmon.

## Why Is It a Problem?

In 2020, the Norwegian Seafood Council estimated the cost of addressing sea lice infestations in the country's salmon farming industry to be approximately 7.5 billion NOK (about 880 million USD) per year. And there are several other issues with welfare and sustainability.

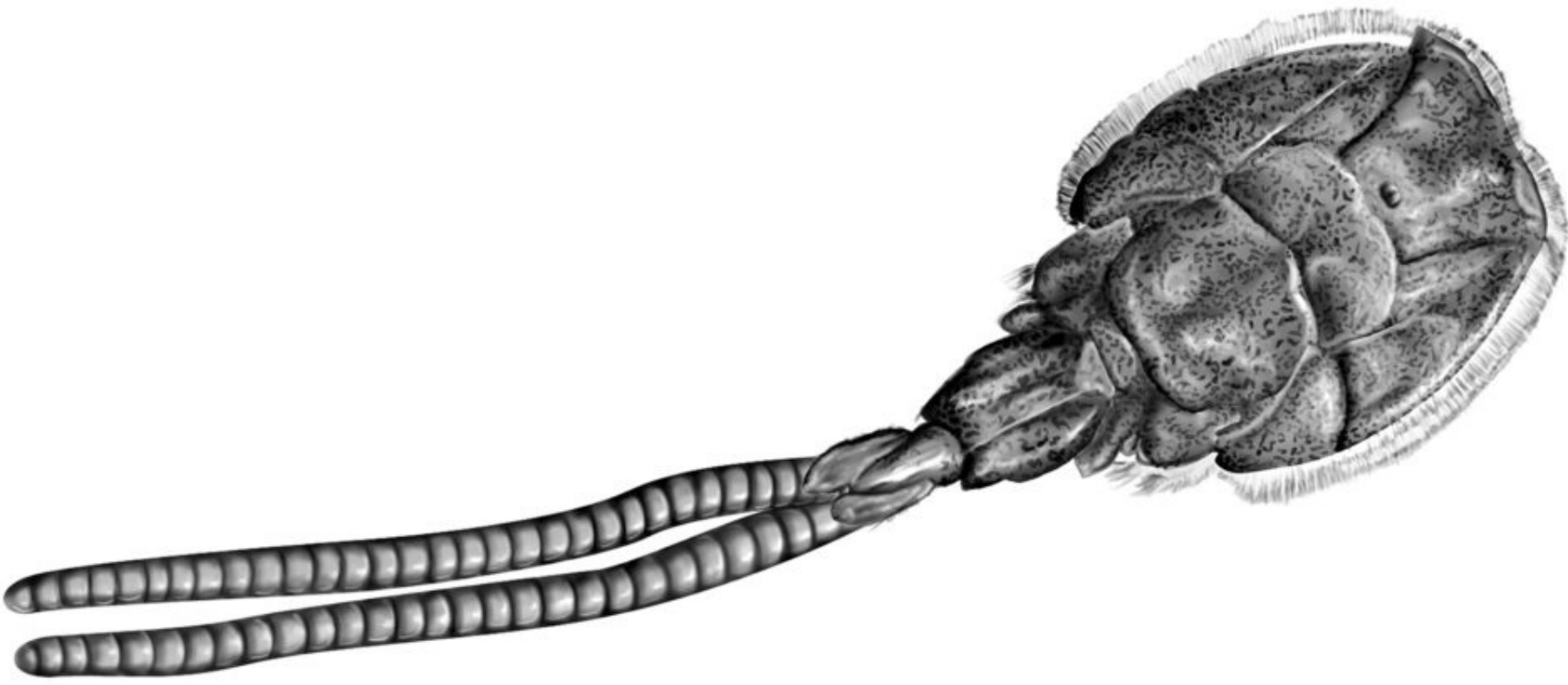


Figure 1: This image shown a drawing of a salmon lice (Lepeophtheirus salmonis) in its adult stage.

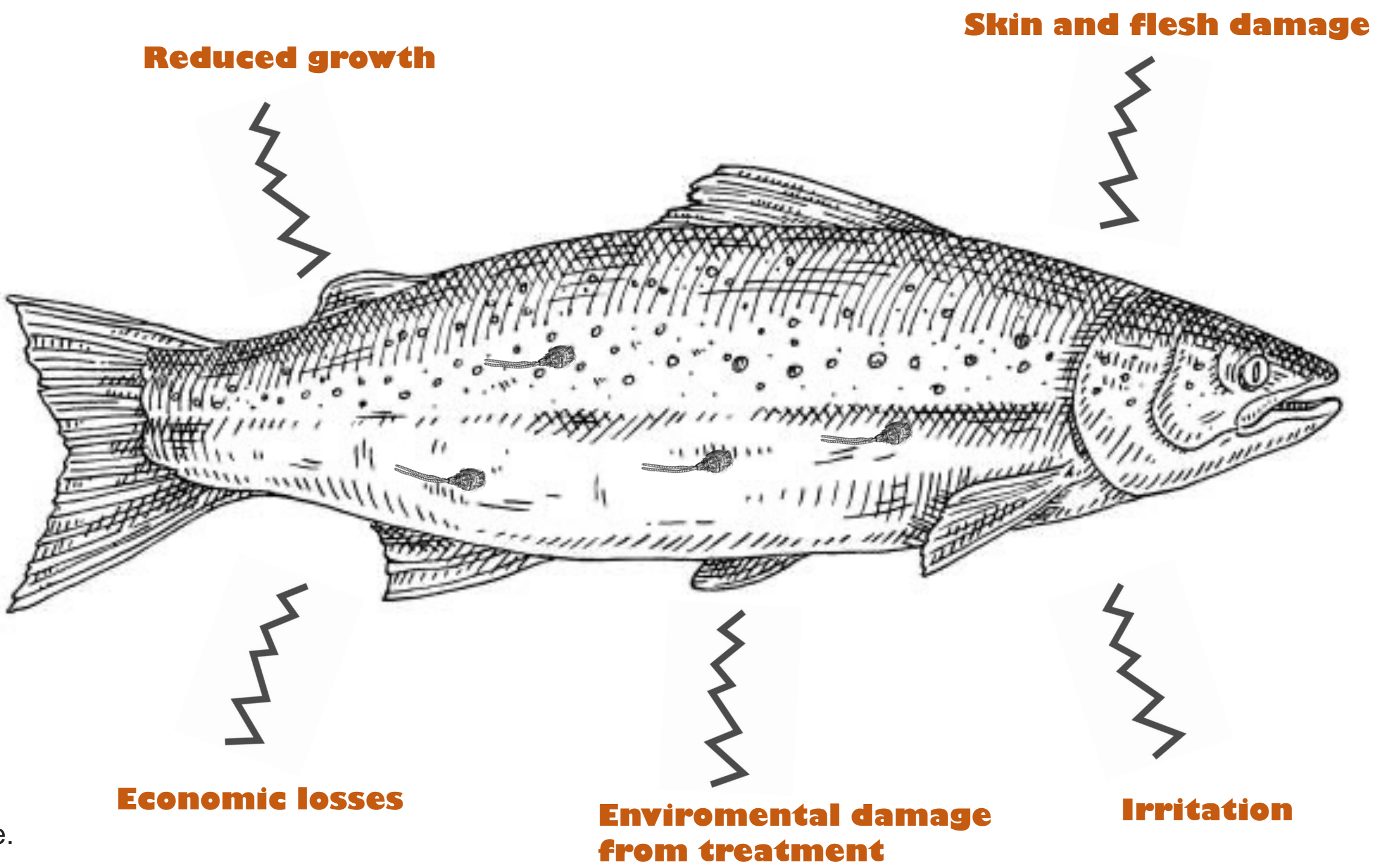


Figure 2. This image shows a salmon with lice on and it explains what issues face the fish and the industry because of the salmon lice.

## A Possible Solution.

While our study provides valuable insights into the mechanisms of salmon lice attachment and detachment, further investigations are necessary to fully understand the complexities of this process. By continuing to expand our knowledge, we can hopefully one day develop a vaccine for salmon lice and revolutionize the salmon farming industry, improving both the welfare of farmed fish and the sustainability of the industry as a whole.

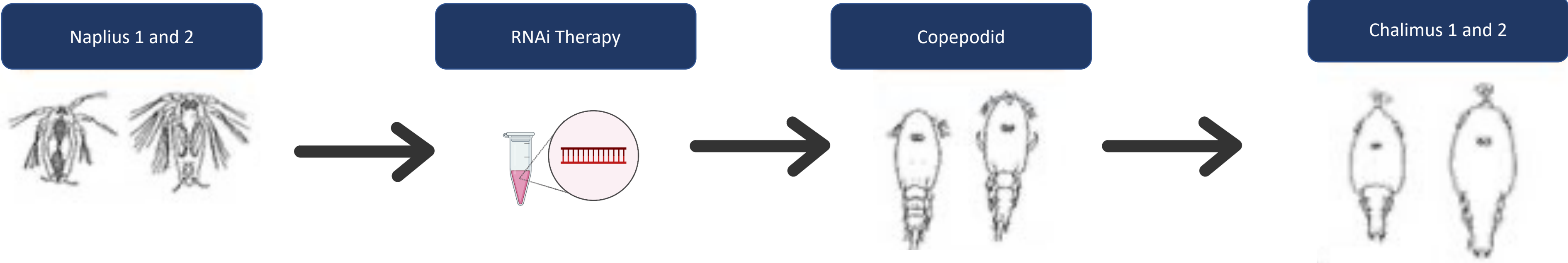


Figure 3. This chain shown the process of the knockdown effect on the protein. The Naplius 1 gets put in a solution with the double sided RNA and when it molts it will suck some water into its body and get the RNA inside. This will later caue the protein that is concentrated in the filament on the chalimus to be downregulated. This will in turn cause the lice to fall off.

### References:

Norwegian Seafood Council. (2020). Seafood Industry in Norway: Aquaculture. <https://en.seafood.no/industry/aquaculture/>.  
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