

# What does public data say about plastics from aquaculture?

Can we prove a statistical correlation between increasing numbers of aquaculture sites and the yields of fish in affected rivers using only data available to the general public?

## Why are plastics from aquaculture a concern?

Aquaculture installations include many types of plastics which are known to have toxic effects as microplastics. Among them, PVC, the same polymer that is used in piping, is especially prevalent and toxic, and may pose a risk as a marine pollutant.

## The elephant in the room

A correlation itself says nothing about plastics. Many other negative externalities of aquaculture must also be considered.

## More questions than answers?

Analysis of watersheds in Troms and Finnmark county found that for the vast majority of watersheds, statistical analysis couldn't be performed simply because there were no aquaculture localities! Of the ones that could be analyzed, diverging results were observed, with certain watersheds correlating positively with aquaculture installations, while others correlating negatively.

It begs the question if a different area with a more pronounced degree of aquaculture activity might have yielded different results. Or are there simply just too many factors at play?

Figure 1: Assayed watersheds, that were a) discarded due to static number of aquaculture sites (12%), b) due to no or not enough fish (26%), c) due to no fish or aquaculture (21%), d) due to no aquaculture (27%), or e) were analyzed (13%)

## A nation of water and fish

Norway comprises 247 so-called "watershed areas" that describe the flow of rivers and water. These watersheds may be large or small, but all share in common that they ultimately drain into the ocean, allowing anadromous fish to swim against the current and spawn in upstream waters.

Some of these currents flow past the many hundred aquacultural sites dotted across the Norwegian coast, which together produces millions of tons of salmon every year.

## Conclusion

It is difficult to conclude anything about aquaculture's impact on fish only using public data, let alone tracing that impact to plastic pollution from the facilities. Careful choice of study areas and good data is critical for determining impacts. It is likely that other methods of study must be employed in finding out the connections between this vital environmental indicator and this ever-growing industry.