



One Health Fish Monitoring
– Microplastics in Fish Stomachs –

Introduction: Microplastics are fragments of any type of plastic less than 5 millimeters in length. They come from a variety of sources including microfibers from clothing, microbeads from cosmetics and personal care products, and breakdown of larger plastic products. Microplastics pollution is extensive and is now present in every part of the environment.

About the data: ORCA Citizen Scientists catch fish and donate them to the One Health Fish Monitoring project. The fish are dissected by other citizen scientists who collect the stomachs and put them into labeled glass vials. These samples are frozen until they are analyzed. ORCA scientists or citizen scientists perform an extraction protocol of the stomachs that ends with any microplastics being captured on a filter paper within a petri dish. They then use a microscope to perform a visual inspection of the filter paper and document any microplastics found.

Variables:

- Species of fish
- County where fish was caught
- Length of fish
- Number of microplastics
- Types of microplastic

References:

[Microplastics. National Geographic website.](#)

[Microplastics in our oceans and marine health. Field Actions Science Reports.](#)

[Hundreds of fish species, including many that humans eat, are consuming plastic. The Conversation website.](#)

Examples of questions you could answer creatively with this data set:

Level 1: In which county do fish have the greatest number of microplastics?

Which type of microplastic is more dominant?

Level 2: Is there a difference in the type of microplastics found in the stomachs of fish based upon in which county they were caught?

Level 3: What is the relationship between number of microplastics in a fish's stomach and concentration of mercury in the fillet of fish?

*These data are from 2019 – 2023. For updated information regarding this project, please feel free to reach out to mweiss@teamorca.org