Abstract

Knowing the biodiversity of zooplankton in local waterways is very important to knowing how healthy an ecosystem is. There is a large gap in knowledge concerning zooplankton biodiversity all over the world and this knowledge is pertinent to knowing how the local wildlife species are being affected by invasive species and climate change.

This study investigated the biodiversity of plankton on the coast of San Juan Island near Friday Harbor by completing a plankton tow during the day and night.

Part of this plankton sample was then sent to the Smithsonian for metabarcoding while the other half of these samples were directly sequenced. Once all of the data was finalized, Geneious Prime was used to complete the bioinformatics associated with comparing all of the data.

The bioinformatics showed that the plankton has much more diversity during the day compared to the night and the metabarcoding produced extensive data. However, it should also be noted that the direct sequencing of the plankton came up with more rare plankton compared to the data from the metabarcoding sample. This result shows that both metabarcoding and direct sequencing are needed to completely and accurately record the biodiversity in local waterways.