

There is limited data on the effects of microplastics contamination on fathead minnows during the critical early-stages of development; this is a concern because microplastics are becoming an increasingly large threat to aquatic environments. Since the 1940s, mass production of plastics has steadily increased with roughly one third (on average) of the plastic in use being recycled. Studies have recorded an estimate of 5.25 trillion particles of plastic weighing 268.940 tons in total that have ended up in the water system, accumulating largely in closed bays, gulfs, and seas. Microplastic particles are polluting aquatic ecosystems around the world and when ingested by aquatic biota they are potential threats to their health by contamination and may lead to leaching of chemical pollutants in the organism's tissue. Recent research on microplastics have focused on marine ecosystems with a lack of research for freshwater ecosystems. Thus, the purpose of this study is to examine the potential effects of microplastics on the digestive tracts of juvenile fathead minnows. In this two-part study, two kinds of microbeads were integrated into the diets of juvenile fathead minnows after a one day and a 10-day exposure period, the juvenile fathead minnow's digestive tracts were dissected and the total number of microplastics remaining in their digestive tracts counted. The average number of plastics present in each exposure period were taken and were compared to one another for further analysis. Higher numbers of retained microplastics in the digestive tract may result in decreased growth rates, higher mortality rates among populations, or increased leaching of chemicals into the organism's tissues. This study provides insight on how microplastics may be affecting this indicator species through their early stages of development with the ambition to further understand their effects.