

Comparison of macroinvertebrate community traits of riffle and pool habitats from wadeable streams in the Allegheny forest

Aquatic invertebrates are one of the prime groups of organisms used to indicate ecosystem health. This stems from a vast diversity of functions and morphologies present in invertebrate communities; as they are specialized for a variety of microhabitats. Such diversity leads to a wide variation in tolerance to pollutants exhibited by different taxa. Before using these organisms as indicators of aquatic habitat quality, it is important to have a clear understanding of typical community structures present in these ecosystems. This project focuses on contrasts between riffle and pool macroinvertebrate communities from three tributaries in the Allegheny Forest region. Target counts of 300 specimens were randomly subsampled from associated organic material and identified to the genus level. Identified taxa were subsequently enumerated and assigned a functional feeding group trait. Percentage of each functional group was used to compare macroinvertebrate communities between pools and riffles. Ash free dry weight of each sample's organic material was used as a measure of carbon content. Higher percentages of shredders and collector-gatherers are expected to be found in the pools as the deeper, slow-moving water results in a buildup of organic matter in the substrate which can be easily accessed. Contrastingly, riffles are predicted to have a higher percentage of predators and collector-filterers. Invertebrates in these areas are thus more likely to depend on available biota and suspended particulate matter for sustenance. Importance of these functional traits can be taken into account when outlining the ecological parameters of a system as a future goal for this project.