RESPONSE OF FRESHWATER FISH COMMUNITY COMPOSITION TO HABITAT DEGRADATION

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Abstract. Streams in Georgia have been transformed by pollutants and land use changes since the 1830s, often to the detriment of the streams and their aquatic fauna. Consequently, the Georgia Environmental Protection Division (EPD) sets a Total Maximum Daily Load (TMDL) of pollutants for streams that fail to meet Clean Water Act standards. Georgia DNR's Wildlife Resources Division Stream Survey Team (SST) is charged with providing input to the TMDL process by assessing the biotic integrity of streams using fish communities as indicators. According to SST Standard Operating Procedures, each stream is sampled using backpack electrofishers. Abundance, diversity, and physical condition of fishes are calculated, and habitat is visually evaluated based on physical characteristics of instream substrate and cover, channel morphology, and the riparian zone. Since inception, SST has provided nearly 1500 stream assessments at approximately 1300 unique stream segments. This effort has generated an extensive data set that, in addition to providing vital water quality information to EPD, holds great potential for illuminating Georgia's fish communities. One such use relates fish communities to the quality of their habitat. In the ensuing poster, we explore the correlation of fish community composition to various habitat metrics with emphasis on isolating disparity dynamics given various types of habitat degradation.