

# Importance of Backwater Habitats to Fish Assemblages in Northwest Mississippi Flood Control Reservoirs

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*Abstract:* Water level manipulation in flood control reservoirs can potentially produce a hydrologic regime similar to that of a natural river-floodplain system. When water levels are allowed to rise, terrestrial habitat is flooded and wetland habitats may become connected to the main reservoir. Wetlands are generally scarce along the body of a main reservoir but may abound in the upper reaches, where they are often referred to as backwaters. The flooding of backwaters creates spawning habitat for many fish species whose life histories have been shaped by the flood pulse of large rivers. The influence of backwater habitats is important to managing the fishery of the main reservoir. We compared fish assemblages between coves in the body of the main reservoir and backwater habitats in three large flood-control reservoirs in northwest Mississippi. Fish assemblage censuses were made in late-winter and spring with electrofishing and collections were described using various species richness and diversity indexes, guild classifications, and multivariate ordinations. Our results show that fish assemblages differ between the two major habitat types as many species utilize the backwater habitats for important life history stages. Thus, management of reservoirs to maintain diverse fish communities and enhance specific fisheries cannot ignore backwater habitats which are available in the upper reaches of the reservoir but often not included in reservoir management plans.

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