

Comparison of Fish Assemblages in the Upper Reaches of a Dammed River (Upper Conecuh River) versus a Free Flowing River (Upper Choctawhatchee River) in the Coastal Plains

Dams destroy rivers by reducing their biodiversity. In the United States, dam building dates back to the Native Americans, who used dams for agricultural purposes. Over 1,000 dams were built between 1930 and 1975. Recently, dam removal has been initiated in the United States, and 654 dams have already been removed. Since most rivers in the United States have some type of impoundment, it is important to examine their effects on the environment and biological integrity. Dams reduce the connectivity between the upper reaches of a watershed and its lower reaches. The result of this loss of connectivity is the restriction of fish passages, reducing access to spawning areas, and removal of access to refugia during disturbances. This study compared two rivers located adjacent to each other in the coastal plains: the Conecuh River, which is impounded, and the Choctawhatchee River, which is free flowing. The objective of this study was to observe the effects that dams have on fish assemblages in the upper reaches of a watershed above an impoundment. Samples were taken place in Alabama above the Gannt dam on the Conecuh River and in the upper portion of the Choctawhatchee River. Fish were collected by electroshocking and seine nets. This study compared the structure and function of fish assemblages, and water quality in both rivers. Using these techniques, we observed how the dams have impacted fish assemblages in the Conecuh River above Gannt reservoir. Game fish were more prevalent in the upper Conecuh (n=1,556) versus the upper Choctawhatchee (n=816). The upper Choctawhatchee River also had more intolerant species of fish (n=17) compared to the upper Conecuh River (n=13). In the Conecuh River, the three most common species collected were *Lepomis megalotis*, *Cyprinella venusta*, and *Lepomis macrochirus*, of which one is a tolerant species. The three most common species in the Choctawhatchee River were *Ericymba amplamala*, *Notropis texanus*, and *Percina nigrofasciata*, two of which are intolerant.

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