FACTORS AFFECTING PADDLEFISH REPRODUCTIVE SUCCESS IN THE LOWER OSAGE RIVER

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ABSTRACT

Large rivers and their associated fish communities have undergone major alterations over the last century. Habitat fragmentation caused by both large and small dams, channelization to promote river transportation, and increased sedimentation from land use changes have all altered large river habitat and affected large-river fishes. Paddlefish are an archetypical large-river migrant that have experienced population declines as a result of overexploitation and large-river habitat alteration, so may serve as an indicator of habitat condition and connectivity. I developed a series of comprehensive research objectives to assess the critical components required for successful paddlefish reproduction in an altered river environment, the lower Osage River, and identify potential limiting factors. Despite the presence of gravid fish and access to upstream spawning habitat, we observed a strong weight of evidence that suggests paddlefish reproduction downstream of Bagnell Dam is most likely limited by altered discharges, resulting in disrupted spawning behavior or insufficient environmental conditions for spawning. Successful management of regulated river systems for societal and biological benefits requires a more comprehensive understanding of specific species life history traits that are vulnerable to alterations in natural flow regimes.