

WIU CENTENNIAL HONORS COLLEGE
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Abstract

Poster

Major: Biology

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Health Benefits of Having a Larger Mouth in Bowfin in the Upper Mississippi River

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This study will assess the effects of gape size of fish on the health of bowfin (*Amia ocellicauda*) in the Mississippi River. Unregulated bowfin harvest has led to increasing pressure for their caviar and bowfishing in recent years. It is necessary to manage bowfin populations. Successful management of this species is hindered by lack of information on their population and health status. Better health can lead to higher growth, reproduction and survival rates. Gape size (size of the mouth opening) limits the size of prey that a predator can swallow whole. Larger prey generally provide more energy than smaller prey. Therefore, the hypothesis is that individuals with larger gape should get more energy to maintain a healthier body condition. Bowfin will be collected from pools 19 and 20 in the Mississippi River by electrofishing. Multiple indices for assessing body condition will be used, as some tend to be better indicators than others. From each fish, data will be collected on gape size, length and weight of the fish. The fish will then be dissected to determine sex and to extract organs for eviscerated weight. The hepatosomatic and the mesenteric indices will be calculated to determine the amount of lipids present. Liver and muscle tissue samples will be used to determine dry weight and ash-free dry weight of these tissues. The gape size will be compared with the body condition indices.