Status and Habitat Associations of Fish Species of Greatest Conservation Need in Wadeable Iowa Streams

Little is known about the habitat associations of Iowa's stream fish species of greatest conservation need (SGCN). In 2005, as part of the Iowa Aquatic Gap Analysis Project (IAGAP), large-scale habitat variables were used in species distribution models to predict the occurrence of Iowa's fish species and help inform fish conservation efforts. This research builds on and expands that project.
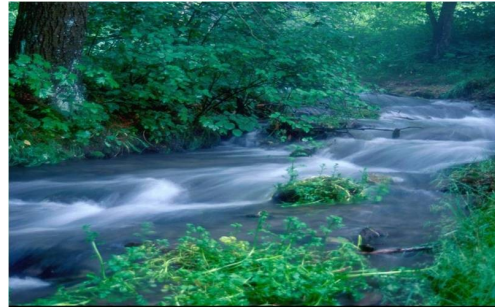
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Goals:

- Evaluate conservation status of fish SGCN
- Identify large-scale landscape features and small-scale stream characteristics that predict the presence of fish SGCN
- Evaluate the effectiveness of the IAGAP models to predict fish occurrence in wadeable streams

Project Details:

Dates: 2008-2011

Location: 86 wadeable streams in Iowa's Mississippi River drainage

Results:

- Half of the SGCN fish surveyed (redfin shiners, slender madtoms, tadpole madtoms, blackside darters, and slenderhead darters) were in fewer than 40% of streams where they were previously reported
- The redfin shiner was not found in any of the 13 stream segments where it was previously reported
- American brook lampreys, southern redbelly daces, and banded darters were found in more than 80% of the streams where they were previously reported
- Each species was associated with unique large and small-scale habitat characteristics
- IAGAP models were only statistically reliable for the banded darter, southern redbelly dace, and longnose dace

Conclusions:

- The status of Iowa's SGCN stream fish is highly variable
- Models with both large- and small-scale variables should be used to predict presence of fish SGCN
- Models should be verified to ensure accuracy of predictions and appropriateness of management
- Management approaches for Iowa's fish SGCN should be species specific and implemented based on individual locations, rather than at a regional or multi-species scale

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