

Smallmouth Bass Management

Missouri Department of Conservation – 2011 Executive Summary

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Introduction/Background

In 2009, the Missouri Department of Conservation (MDC) released two, key smallmouth bass reports, compiling the detailed history of regulations, evaluations and management of this keystone aquatic species in Missouri. To date, there is a total of 358 miles of water on 12 streams with Stream Black Bass Special Managements Areas (SBBSMA) that differ from the statewide regulations. In an effort to expand on information supplied in these reports and the decades of smallmouth bass management in Missouri, in 2010, smallmouth bass managers and researchers were assigned to five committees to further refine future management direction. The following are the brief results, updated progress and planned work by the Smallmouth Bass Work Group and these five committees.

1) Smallmouth Bass Angler Survey Committee

Obtaining information from anglers was a consensus top priority and, although many methods of retrieving this data were discussed, an angler mail survey was chosen. To maximize value, the survey targeted smallmouth bass and rock bass (goggle-eye) anglers to gain valuable information regarding future management of both species. In October of 2010, 100,000 Missouri resident fishing license holders received a screener card, simply asking if they were a smallmouth bass or rock bass angler. If an angler responded yes about fishing for either species, they were mailed the full survey. The survey mailings were stratified toward anglers in southern Missouri while also surveying a representative group of statewide anglers.

Status - In March of 2011, 7,742 full surveys were mailed, and this committee will analyze survey results and complete a final report in 2012.

2) Smallmouth Bass Stream Evaluation Criteria Committee

This committee was primarily assigned to evaluate and update the criteria used when the 12 SBBSMA areas were created. The following are four key areas of biological evaluation that would need to be addressed, along with social factors before any additional management areas would be considered and/or proposed:

- Are there electrofishing mortality concerns for Species of Conservation Concern or other species evaluation conflicts?
- Are the stream gradient, maximum summer temperature, dissolved oxygen levels, riparian corridor width and watershed health appropriate?
- Are the field habitat observations and fish population indices appropriate?
- Does the outcome of fish population modeling indicate a positive outcome?

Status - This committee's tasks are complete.

3) Smallmouth Bass Research Needs Committee

Two management/evaluation projects have been initiated from recommendations presented by this committee.

- a) Identification of smallmouth bass exploitation rates in selected streams – Knowing angler harvest rate is an important part of evaluating the status of smallmouth bass populations, we tagged 1,420 legal sized (12-inch minimum) smallmouth bass in five rivers (Black, Castor, Courtois, Current and North Fork of the White) with angler reward tags in 2011 and plan to repeat in 2012, pending data review and budget approval. Selection of river reach was diversified to include sections considered to be accessible by wade, float or boat fishing. Also, rivers selected are being managed with statewide regulations with no increase in minimum length limits or reduced daily limits.
- b) Seasonal movement of smallmouth bass in relation to spring influences in Missouri Ozark streams - MDC is partnering with the National Park Service in 2011 to track smallmouth bass movements within the Current River while concurrently monitoring water temperatures within and adjacent to spring habitats. This information will provide baseline data on water temperatures in and adjacent to springs and provide information on fish movements within the river and spring systems that can be used in the future to evaluate the effects of climate change on the park's aquatic resources.

Status - Staff will continue to track smallmouth bass and collect water temperatures through 2011. This committee will continue its work until project implementation and reports are completed.

4) Smallmouth Bass Sampling Protocol Committee

This committee revised the smallmouth bass sampling guidelines and developed project proposals to aid in the electrofishing efficiency of these guidelines. The updated guidelines are also intended do the following: 1) give MDC the ability to more effectively summarize black bass and goggle-eye data collected by different biologists on different streams at different times; 2) make it easier to detect significant changes in a fish population over time; and 3) help MDC evaluate future management decisions. These guidelines should be used regardless of whether or not the site is within a SBBSMA or part of a special regulation proposal. Detail and updates on these efforts should be completed in 2012.

Status - Sampling guidelines are complete, and this committee will continue to refine project proposals regarding sampling efficiency.

5) Smallmouth Bass Stream Habitat Committee

The goal of this committee is to use previously collected smallmouth bass sample data and GIS watershed characteristics to define watershed conditions that are associated with various degrees of a stream's potential to support smallmouth bass. The assumption here is that different watershed characteristics (e.g., geology, land use, riparian, springs, etc.) will be associated with a stream's potential to support smallmouth bass. Modeling the five valuable criteria of a smallmouth bass habitat model (stream gradient, maximum water temperature, dissolved oxygen, riparian corridor width and watershed impervious surface), should produce an effective and informative tool for biologists. Modeling will be done one watershed at a time, starting with selected pilot watersheds.

Status - This committee will continue to develop the habitat model for review in 2012.