

MILNER RESERVOIR SMALLMOUTH BASS STOCKPILE STUDY AND RESULTS

IDAHO DEPARTMENT OF FISH AND GAME, MAGIC VALLEY REGION

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Introduction

In 2009, Idaho Department of Fish & Game's (IDFG) regional fisheries staff was approached by local bass clubs concerned that current post-tournament bass release practices could be having a negative impact on the Milner Reservoir smallmouth bass fishery. Tournament anglers bring captured smallmouth bass to a weigh-in site. All fish are then placed in a livewell and transported by boat to one release location.

Over the course of 4 (2009) tournaments, IDFG staff and bass club members tagged tournament captured bass with a colored jaw tag prior to release. Jaw tags were a dif-

ferent color for each tournament (May 16-blue, May 30-red, Aug 1-gold, Sept 12-green). Each tag included a specific identification number and the IDFG hotline telephone number.

The purpose of this study has been to answer the question: Are smallmouth bass being stockpiled at post-tournament release locations in Milner Reservoir? And consequently, are they immediately being targeted by non-tournament anglers for harvest? We wanted to identify whether there could be movement away from release locations or if there was a need for overland transport to avoid

stockpiling problems.

The results of this study are based on analysis of post-tournament release locations and 2009-2011 angler reports through the IDFG hotline. Anglers reported the tag identification number and location at which bass were caught and released or caught and harvested. Follow-up calls from IDFG were used to obtain specific capture location when it was not provided in the initial report.

IDFG has concluded: Smallmouth bass are not being stockpiled in Milner Reservoir at post-tournament release locations.



Jaw tags.



A smallmouth bass with a blue jaw tag.



Bass were transported by boat to a release location.

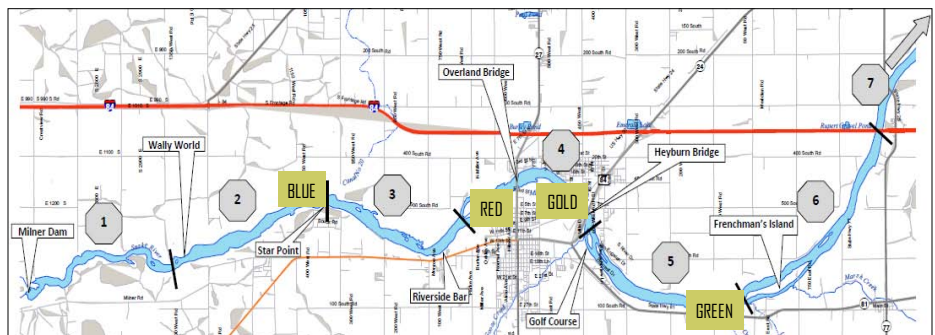
2009 Tagging

On May 16, 203 smallmouth bass were tagged with a blue jaw tag. They were released in Section 2, rivermile 646.8.

On May 30, 162 smallmouth bass were tagged with a red jaw tag and released in Section 4, rivermile 650.5.

On August 1, 154 smallmouth bass were tagged with a gold jaw tag. They were released in Section 4, rivermile 653.2.

On September 12, 192 smallmouth bass were tagged with a green jaw tag and released in Section 5, rivermile 657.3.



Milner Reservoir was divided into 7 sections as a simple but effective way to determine if smallmouth bass were moving away from post-tournament release locations. The colors indicated on the map correspond to approximate release locations of jaw tagged bass. The tournament weigh-in and bass tagging occurred in Section 3, rivermile 649.5 at the site labeled Riverside Bar and in Section 5, rivermile 654.5 at the site labeled Golf Course.

The average length of tagged bass was 14.7 inches, with the minimum length being 11.7 inches. The maximum tagged length was 18.5 inches.

Tag Return Results

A total of 711 bass were tagged at 4 separate tournaments in 2009. One hundred ninety three jaw tagged smallmouth bass were reported caught by tournament and non-tournament anglers between May 16, 2009 and November 30, 2011. Two bass were caught and reported twice for a total of 195 reports. This indicates a 27% return on tagged and released bass.

Of the 203 smallmouth bass released with blue jaw tags, 76 (37%) were caught and reported. Fifty three or 33% of the 162 red jaw tagged bass were reported captured and 29 (19%) of the 154 gold tagged bass were reported caught. Of the 192 bass tagged with green jaw tags, 37 (19%) were caught and reported. See Figure 1.

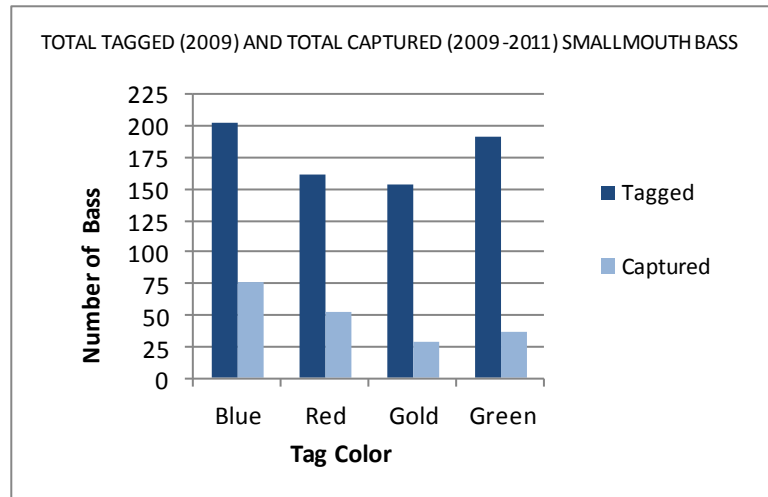


Figure 1. Total bass tagged vs. total bass captured per color jaw tag.

Harvested or Released?

Fish and Game received 195 reports of tagged smallmouth bass caught in Milner Reservoir by tournament and non-tournament anglers between May 16, 2009 and November 30, 2011. Of the 195 (27%) captured and reported bass over the 3 year period, a total of 75 (39%) were harvested, while 106 (54%) were released (with or without the tag). It is unknown whether fourteen bass (7%) were harvested or released. See Table 1.

Yearly capture reports decreased from 118 bass in 2009 to 64 in 2010, to 13 in 2011. In 2009 and 2010, more bass were reported as "released" upon capture. For yearly summaries of harvest and release information see Figure 2.

Tag Color	# Harvested	% Harvested	# Released	% Released	# Unknown Harvested or Released	% Unknown Harvested or Released
Blue	23	30%	49	65%	4	5%
Red	29	55%	22	41%	2	4%
Gold	15	52%	14	48%	0	0%
Green	8	21.5%	21	57%	8	21.5%
TOTAL	75	39%	106	54%	14	7%

Table 1. Fate of captured and reported smallmouth bass from 2009-2011.

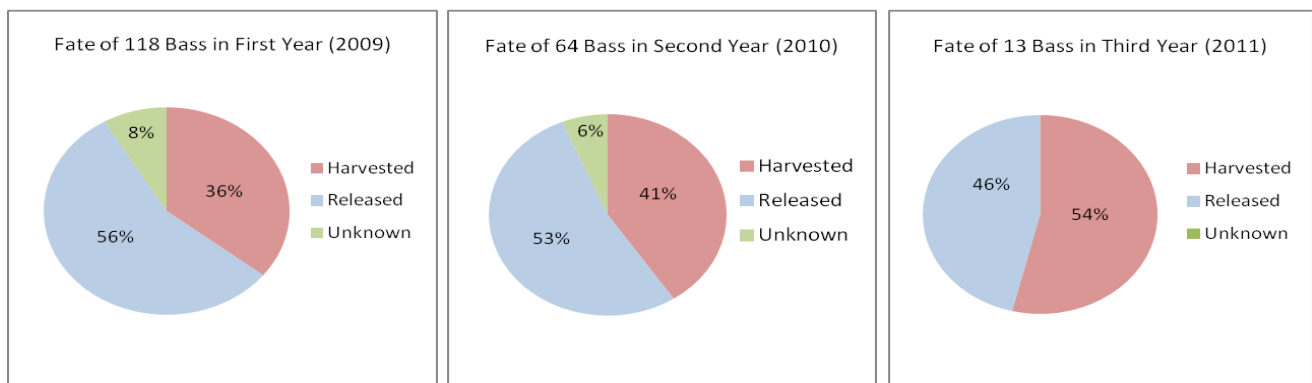


Figure 2. Fate of captured and reported smallmouth bass per year.

Capture Timing

The vast majority of bass were reported caught after the first week following tournament release. See Table 2.

Tag Color	Captured within 1st week	Captured after 1st week	Unknown capture time	Total Captured Bass
Blue	2	73	1	76
Red	3	50	0	53
Gold	3	26	0	29
Green	1	27	9	37
Total	9	176	10	195

Table 2. Capture timing of reported smallmouth bass.

Movement Results

Movement analysis was broken down into 3 different categories based on the level of detail from angler reports.

The first category answered the question: Did smallmouth bass move away from the release location (section)? Of the total 195 returns, 61% were recovered outside the section in which they were released, while 22% were captured inside their release section. An additional 17% are unknown (reported without detailed capture location). Figure 3 shows specific numbers of bass captured per section description.

In the second category, it was determined whether bass moved upstream or downstream. Upstream travel accounted for 46% of movement, while 29% moved

downstream from their release location. Of all captured bass, 8% were caught in the same section as released. The rest (17%) were captured in an unknown section. See Figure 4.

In the third category of movement analysis, travel distance was examined. Those that travelled <5 miles accounted for 24% and of those, 5% of them travelled less than a half mile. While 15% travelled 5-10 miles, a little over 27% percent travelled >10 miles. Travel distance for 33% of the reported bass was indeterminable.

The greatest distance travelled upstream was approximately 28 miles, while the greatest distance travelled downstream was approximately 18 miles. Of the bass that travelled >10 miles, 60% travelled

upstream and 40% travelled downstream.

On average, blue tagged bass travelled 8.5 miles upstream. Red tagged bass travelled an average of 6.5 miles upstream. Gold tagged bass moved an average of 0.4 miles downstream and green tagged fish travelled an average of 2.9 miles downstream.

One particular red tagged bass was captured twice during the study period, once in June, 2010 and again in June, 2011. In 2010, it was captured in Section 6 near Frenchman's Island, showing a movement upstream of about 8.5 miles from its release location. In 2011, it was captured in Section 4 near Heyburn, showing additional movement of about 5 miles downstream.

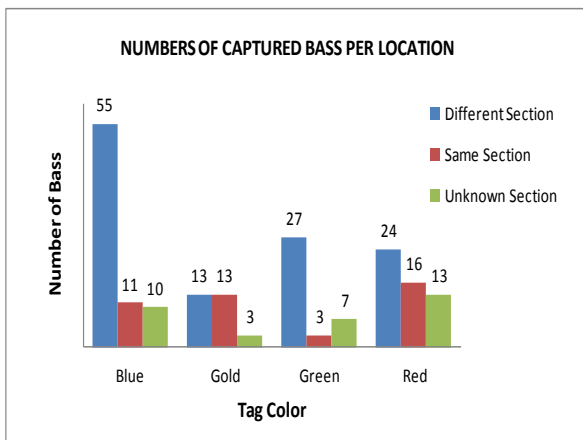


Figure 3. Number of captured bass per location description and jaw tag color.

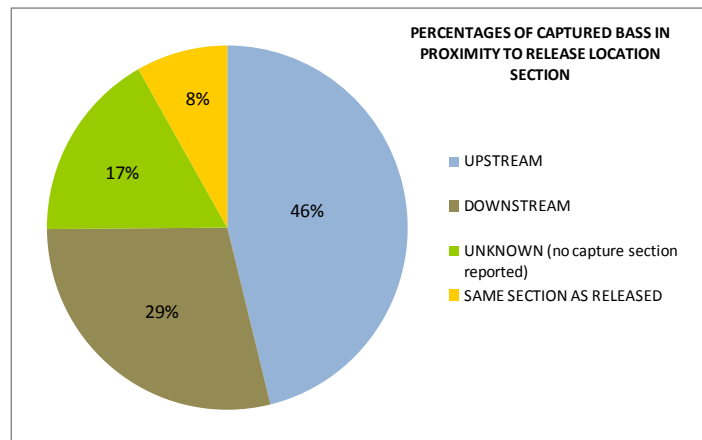


Figure 4. Percentages of bass captured and reported in proximity to release locations.

Conclusions and Discussion



The purpose of this study was to determine whether smallmouth bass were being stockpiled at a release location after tournament capture and weigh-in. In addition, the study enabled us to speculate whether post-tournament released bass are vulnerable to immediate harvest by non-tournament anglers. Of the 195 angler reports IDFG received, 162 reports included some form of capture location information that could be used to conclude whether a particular bass had moved away from its release location. All 162 reports indicated some movement, although distance varied greatly from <0.5 miles to >27 miles away from release locations, and leads IDFG to conclude that stockpiling bass at post-tournament release locations is not a serious concern to the Milner Reservoir smallmouth bass fishery at this time and does not warrant overland transport.

Several factors may influence bass to move varying distances from release locations. Factors may include competition and availability of resources such as food and habitat at a release location. Corresponding events of tournament and spawn and the availability of spawning habitat at a release location may also influence movement. Blue and red tagged fish were captured and released pre-spawn and on average, appeared to travel farther than gold and green tagged bass after release. Movement may also have been influenced by water temperatures. Blue and red tagged fish were released in the spring when Milner Reservoir water temps were recorded around 53°F.

Assuming that each released bass had an equal opportunity to be caught, gold and green tagged bass were reported at a much lower catch rate than blue or red tagged bass. It leads us to wonder whether survival rates were lower for gold and green tagged bass. Gold tagged bass were released at the beginning of August when water temps have been recorded around 72°F and green tagged bass were released several weeks later. Higher water temps may increase physiological stress (from capture, weigh-in, and tagging) and could result in less movement or mortality.

We would suspect that bass are more susceptible to capture when released in close proximity to popular or easy fishing access. Gold and red tagged bass were released in close proximity to the cities of Heyburn and Burley and had the highest capture rates within the first week after release. Overall, these two colors had the highest capture rates within the same section as released.

Based on these observations, IDFG could hypothesize that release (tournament) date and release location impact smallmouth bass survival and capture. Recommendations could include: 1. Select post-tournament release locations away from city shorelines or popular/easy fishing access. 2. When possible, avoid having late season tournaments when fish are prone to higher physiological stress and have a higher potential of non-tournament angler harvest.

Thank you to all who participated in cooperation of tagging efforts by Idaho Fish and Game and the Bass Clubs Collaboration. Thanks also to the many anglers who reported valuable information regarding jaw tagged bass.

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