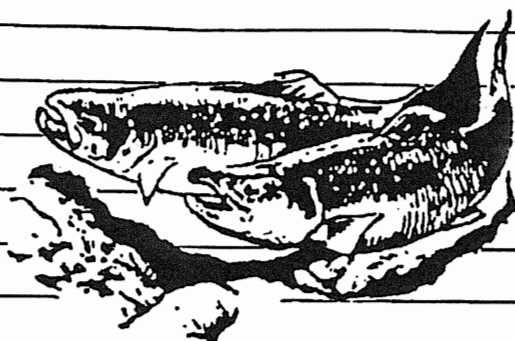


Research

Information bulletin

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Displaced Largemouth Bass Exhibit Less Homing in Large Lakes and at Nonspawning Times of the Year

It is a common practice in bass tournaments for anglers to catch largemouth bass (*Micropterus salmoides*) from various locations, contain the fish in livewells for several hours, and ultimately (following weigh-in) release the fish at one location. That location could be many kilometers from the original point of capture. This situation suggests four questions: If bass are able to return to their original point of capture, how long does it take? How strong is this homing instinct? Is there a difference in homing success related to size of the lake? and Is there a difference in homing success between fish in spawning condition and those displaced at other times of the year?

A study was designed to address these questions for largemouth bass displaced in two lakes in Maine. This study is particularly relevant for this region of the country because boreal waters may influence different movement behavior than that exhibited by largemouth bass in other regions.

Study Utilized Radiotelemetry and a Unique Experimental Design

In 1992, 60 largemouth bass from Cobbosseecontee Lake and Webber Pond were equipped with external radio tags. Cobbosseecontee Lake is larger and longer (2,003 ha, 14.4 km long) than Webber Pond (507 ha, 4 km long); both are located near Augusta, Maine.

Bass were tagged during two separate periods. Fish captured during spawning in late May were tracked until late June. A second group of fish was captured in mid-August and tracked until mid-September. During each tracking period, 15 bass were tagged and separated into three groups of five fish each on each lake. One group was immediately returned to the capture location after tagging. Another group was tagged, transported by boat to another location in the lake, and released. The third group was held in a boat

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livewell for at least 2 h after capture, then tagged, displaced, and released.

Size of Lake and Reproductive Condition Influenced Homing Success

Fish tagged and tracked during the spawning season had a greater tendency to home back to the spawning beds (59% returned) compared with those tagged later in summer (only 27% returned). The probability of a fish returning was negatively influenced by increased holding time and increased displacement distance and positively influenced by fish size.

There was a similar difference in the return timing of the homing fish. It took much longer for fish to return late in summer in Cobbosseecontee Lake than during the spawning time. Those fish that returned during spawning made the trip in less than 4 days (range 3–4.5 days); it took an average of 7 days for fish to return later in summer (range 5.5–8.5 days). Bass that were displaced the farthest tended to return much faster during spawning time than did fish displaced only limited distances.

This is significant with regard to protection by the male of eggs and black fry: 41% of spawning fish did not return to the nest site after displacement and an additional 18% exhibited return times that probably exceeded the time offspring would be viable in the absence of the guardian male.

Changes in Tournament Procedures Are Proposed

Although largemouth bass do exhibit homing behavior, particularly during spawning time, displacement of bass during tournaments in boreal climates can potentially redistribute fish within a lake. If this displacement occurs during spawning season, males are not likely to return to nests in time to prevent predation of eggs.

Recommendations to fish managers include prohibition of tournaments during spawning times and prohibition of the catch, measurement, and release of bass during that time. Other measures could include multiple weigh-in sites, midday weigh-ins, and the redistribution of fish following tournaments.

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