

FINAL REPORT:

STATUS OF THE BLUEHEAD SHINER (PTERONOTROPIS HUBBSI): AN
ASSESSMENT OF REINTRODUCTION EFFORTS IN OTTER POND, UNION
CO., ILLINOIS

SUBMITTED TO:

ILLINOIS DEPARTMENT OF NATURAL RESOURCES
DIVISION OF NATURAL HERITAGE
524 S. SECOND ST.
SPRINGFIELD, ILLINOIS 62701-1787

BY:

KENNETH M. COOK AND BROOKS M. BURR
DEPARTMENT OF ZOOLOGY
SOUTHERN ILLINOIS UNIVERSITY AT CARBONDALE
CARBONDALE, ILLINOIS 62901-6501

14 AUGUST 1995

INTRODUCTION

This final report is submitted in fulfillment of a contract made and entered by and between the State of Illinois, Department of Conservation, Resource Management, (Illinois Department of Natural Resources) and Southern Illinois University at Carbondale. Described herein are the results of an assessment of the reintroduction of the Bluehead Shiner (Pteronotropis hubbsi) into Otter Pond, Union County, Illinois. This report follows three previous reports on the recovery of the Bluehead Shiner in Illinois (Burr and Heidinger 1987; Burr et al. 1990; Warren et al. 1991). The ultimate goal of the recovery plan is to establish a viable population (reproducing) within the known historic Illinois range of the Bluehead Shiner and protect the species and its habitat to such a degree that it no longer qualifies for protection under the Illinois Endangered Species Act. Background information and the plan of study pertaining to this species were presented in a proposal submitted to the Illinois Department of Conservation, Division of Natural Heritage, and the Wildlife Preservation Fund Advisory Committee for the Small Project Program in April 1994.

METHODS

Status of the Bluehead Shiner was assessed in Otter Pond in the La Rue Pine Hills Natural Area, Union County, Illinois, between 15 April and 12 July 1994. Approximately 70 person-hrs were spent on six surveys searching for the species.

Surveys were conducted by two persons using a 14 foot Jon boat with oars and were done only on clear, sunny days with minimal wind to insure

maximum visibility. Because of the tanin stained water and glare, polarized glasses were essential for observing fishes in the pond. We concentrated our boat searches on areas of the pond where previous collections of the Bluehead Shiner were known or thought to come from (Burr and Warren 1986) such as along the eastern bluffs where several springs enter the swamp, the vegetation-open-water edges and among the submerged coontail, (Ceratophyllum demersum), and sago pondweed, (Potamogeton pectinatus) (Burr et al. 1992). In addition, deeper, open water areas lacking vegetative growth were also searched but visibility was generally poor and few fish were seen. When possible, a dip net was used to capture fish from the boat for in-hand identification. On several visits a minnow seine (3 m x 2 m with 3.2 mm mesh) was used to supplement observations. Seining was done along the bluffs and along the edges of the dense growths of spatterdock, (Nuphar lutea), water lillies, (Nymphaea sp.), and water willow, (Decodon verticillatus), on the western side of the pond. Fishes collected from the pond were fixed in 10% formalin in the field then transferred to 70% ethanol in the laboratory after identification.

RESULTS AND DISCUSSION

Despite our sampling efforts we were unable to locate the Bluehead Shiner in Otter Pond during this survey. We feel confident that our survey was fairly extensive but recognize the weakness of relying solely on visual observations and minnow seines as sampling methods. As noted by Burr and Warren (1986), there appears to be no single best method for sampling the lowland swamp habitat of Otter Pond-Wolf Lake. We do know, however,

that location of the species is possible by simple visual searching because of our experience during 1992 when adult Bluehead Shiners were seen in Otter Pond during June and July 1992 after reintroducing them in April and May 1992 (Burr et al. 1992). Because of the extensive and intensive surveys that had previously taken place in this area (Burr and Warren 1986; Burr 1982) which failed to discover this species, we felt confident that the Bluehead Shiners we saw were from our reintroduction stock. It should be noted that the site of the 1992 reintroduction (at the northeast edge of Otter Pond) and the area of the pond where Bluehead Shiners were seen just one month later (see Burr et al. 1992), is a distance of roughly 1,000 ft. (305 m) showing that the species had dispersed in the pond, likely seeking preferred habitat.

Although no Bluehead shiners were seen or captured during this survey we are reluctant to conclude that the 1992 reintroduction project failed to establish a reproducing population in the Otter Pond-Wolf Lake area. Life history information and ecological requirements for this species in Illinois are generally lacking (Burr et al. 1992) and additional, more comprehensive survey's are warranted before any conclusions about the status of this species in Otter Pond can be confidently made. Adults of this species have never been collected in great numbers in Otter Pond or Wolf Lake (Burr and Warren 1986) suggesting that the species undergoes fluctuations in numbers over time (bottlenecks) or that it is unusually secretive. Alternatively, as recommended in the recovery plans (Burr and Heidinger 1987; Burr et al. 1990) additional stocking of Bluehead Shiners may be necessary to obtain a viable (reproducing) population of this species. It may be that small, remnant populations from the 1992 stocking are present in Otter Pond or Wolf Lake and additional stocking could increase their chances of becoming established. Burr and Warren (1986) noted that collection data suggested that Wolf Lake

appeared to harbor the population nucleus and served as the primary nursery area. If indeed this is the case, the 1992 stocked fish may have emigrated to Wolf Lake to spawn and did not return to Otter Pond.

We continue to support retention of the Bluehead Shiner on the Illinois endangered species priority list and recommend future surveys or stockings in Otter Pond and/or Wolf Lake. Over the last decade a tremendous amount of work has gone into the development and execution of the Bluehead Shiner recovery plans and we recommend that this survey be considered only a first step in the monitoring process and evaluation of the objectives of those plans.

ACKNOWLEDGMENTS

Thanks go to Kenneth J. Woodruff and Dr. Roy C. Heidinger for their assistance in the field. This study was funded by the Illinois Department of Conservation, Division of Natural Heritage, and the Wildlife Preservation Fund Advisory Committee for the Small Project Program 1994.

LITERATURE CITED

- Burr, B. M. 1982. Status of the bluehead shiner, Notropis hubbsi, and the banTam sunfish, Lepomis symmetricus, in Wolf Lake, Illinois. Final Report to Illinois Endangered Species Protection Board, Illinois Department of Conservation, Springfield. 22 pp.
- Burr, B. M. and R. C. Heidinger. 1987. Biology and preliminary recovery plan for the endangered bluehead shiner in Illinois. Final Report to Illinois Endangered Species Protection Board, Illinois Department of Conservation, Springfield. 19 pp. + 3 tables.
- Burr, B. M. and M. L. Warren, Jr. 1986. Status of the bluehead shiner (Notropis hubbsi) in Illinois. Trans. Ill. State Acad. Sci. 79:129-136.
- Burr, B. M., K. M. Cook, and R. C. Heidinger. 1992. Reestablishing bluehead shiner (Notropis hubbsi) populations in Illinois. Final Report to Division of Natural Heritage, Illinois Department of Conservation, Springfield, 21 pp.
- Burr, B. M., R. C. Heidinger, M. L. Warren, Jr. and L. W. Seeb. 1990. Recovery plan for the endangered bluehead shiner (Notropis hubbsi) in Illinois. Submitted to the Illinois Department of Conservation, Springfield.
- Warren, M. L., Jr., B. M. Burr, and R. C. Heidinger, 1991. Bluehead shiner recovery plan: genetic profiles of potential donor populations. Final Report to Division of Natural Heritage, Illinois Department of Conservation, Springfield, 27 pp.