

**Nesting Silver Lampreys, *Ichthyomyzon unicuspis*, in the
Little Blue River (Southern Indiana, Crawford County, Ohio River Drainage)**

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ABSTRACT

On May 13, 1987, we located a nesting and spawning aggregation of silver lampreys, *Ichthyomyzon unicuspis*, on a gravel-bottomed riffle in the Little Blue River, a southern Indiana tributary of the Ohio River. The only other definite spawning locality for this species in the Ohio River drainage is Sunfish Creek in Pike County, Ohio. Few modern records are available for silver lampreys in the Indiana section of the Ohio River. In adjacent states, population declines have been reported in streams with habitat destruction and impoundments. In Indiana waters, additional research is needed to locate other nesting sites so that management procedures may be developed to protect existing spawning sites.

Introduction

The purpose of this paper is to report the first nesting and spawning aggregation of silver lampreys, *Ichthyomyzon unicuspis*, observed in Indiana waters tributary to the Ohio River. The only other definite spawning locality for this parasitic species in the entire Ohio River drainage is Sunfish Creek in Pike County, Ohio.⁶

Site Description

On May 13, 1987, some nine nesting adults in various color phases from a prespawning yellow-tan to a spawning blue-silver were found in the Little Blue River clinging to rocks in the first gravel-bottomed riffle complex south of the U.S. Highway 62 bridge in Crawford County about three miles east of Sulphur, Indiana. One spawning female in the blue-silver color phase was preserved as a voucher specimen.

Background Information

The widely distributed silver lamprey has a reported range from the Hudson and St. Lawrence drainages westward through the Great Lakes, southward into the Upper Mississippi and eastward into the Ohio River drainage.³ Historical information indicates that silver lampreys were extremely abundant, especially in Lake Erie, prior to 1875.⁶ Thereafter, significant population declines have been reported in adjacent Ohio and Indiana where habitat alterations have destroyed former nesting sites, impoundments have prevented upstream migrations, and increased turbidity and siltation have hindered the hatching of unprotected eggs and later impaired feeding and development of the ammocoetes larvae.^{5,6} In the Ohio drainage, knowledgeable individuals like commercial fishermen have noted significant decreases in abundances of all parasitic lampreys.⁶ In Indiana waters, so few modern records are available² that Nelson and Gerking in 1968 listed the presence of silver lampreys in the Ohio drainage as doubtful.⁴ In northern Indiana, the species evidently no longer occurs in Lake Michigan and its tributaries.⁵

Discussion

Water managers and individuals reviewing proposals for stream alteration projects should be cognizant of the silver lamprey's fragile life history. Such an increased awareness may help mitigate possible losses in the future. For example, when stream alterations are being considered, sampling of backwater bars and areas of suitable larval habitat should be undertaken to determine the presence or absence of ammocoetes larvae. The reason for collections in slack water is that following hatching and downstream drifting to backwater areas, the larvae develop U-shaped tubes where they feed upon microscopic organic debris for a period of four to seven years.^{1,3} Next, collections and observations of spawning adults should be timely and correlated with the short nesting phase of the life cycle. After a parasitic life of only 10 to 20 months³, sexually mature silver lampreys migrate upstream in early spring to riffle nesting sites where they spawn and die shortly thereafter. We recommend that additional research be undertaken during the month of May to locate other nesting sites, if any, in Indiana waters so that appropriate management procedures can be developed to protect existing spawning areas.

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