

Reproductive schedule of *Campostoma oligolepis* (Teleostei: Leuciscidae) in North Alabama, USA

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Collections of *Campostoma oligolepis* were made monthly from the Flint River in Madison County in northern Alabama, USA, from March, 2014, to September, 2015. A total of 768 specimens were collected over the collection period including 492 adults, 268 females and 224 males. We found strong evidence that the peak spawning time for *C. oligolepis* in the Flint River is March and April. Ovarian maturation, gonadosomatic index for both sexes, and monthly clutch size all support this conclusion. Two unexpected features were found. The first is how few females of mature size were found to carry either maturing oocytes or a clutch except in the peak observed reproductive month of April, 2014. The second unusual feature is the prevalence of asymmetric ovaries, with the left the larger if a difference exists. *Campostoma oligolepis* may have unusually strong inter-annual responses to abiotic factors such as water temperature and river discharge.

Introduction

Understanding the reproductive patterns and strategies of a species is an important step in establishing the species' life history. *Campostoma oligolepis*, the Largescale Stoneroller, is a species that has received little attention in the 90 years since it was first identified, and the work that has been done has been localized in the American Midwest. Very little is known about this species' reproductive season or strategies, and what information that can be found on the topic is conflicting and often inferred from what is known about other species within the genus *Campostoma*. This research closely examines *C. oligolepis* in the southeastern United States to establish a clear understanding of its reproductive timing.

Campostoma oligolepis inhabits clear running rivers and streams with substrates of cobble and gravel. Adults prefer fast riffles or moderately deep riffle runs and have a very low silt tolerance, while juveniles frequently favor slower currents over sand and silt (Burr & Smith, 1976). *Campostoma* itself is Latin for "curved mouth" stemming from their prominently curved jaws that allow them to more easily scrape algae and detritus material off the benthic substrate with their cartilaginous lower jaws (Etnier & Starnes, 1993).

There is little if any consensus on the reproductive schedule of *Campostoma oligolepis*. They are reported to spawn from early April to June by some (Burr & Smith, 1976; Etnier & Starnes, 1993), and March through April by others (Mettee et al.,

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Received 14 June 2019
 Revised 26 September 2019
 Accepted 7 November 2019

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