



United States Department of the Interior
U.S. Geological Survey
5522 Research Park Drive
Baltimore, MD 21228
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Maryland-Delaware-District of Columbia Water Science Center
Seminar Series

Tuesday, December 17, 2013 12:30-1:30

Urbanization impact mechanisms on River chub (*Nocomis micropogon*): The link between better understanding and stream restoration success



This talk will focus on defining nesting habitat requirements for River chub (*Nocomis micropogon*), a species which has largely disappeared from Baltimore's urbanized waterways. In addition to being sensitive to urbanization, the spawning habits of this species directly benefit a number of additional fish species. Males construct large pebble mound nests which are critically used by a number of other species (nest associates) as an ideal nesting habitat. Local streams which continue to harbor River chub populations (Little Gunpowder

Falls, Winters Run) as well as those which do not have River chub (Gwynns Falls, Jones Falls) were studied with a focus on suitability as reproductive habitat for River chub.

Streams with extant populations were surveyed for nesting activity during 2012- 2013. Nest dimensions, substrate availability, stream velocity and flow rate, water depth, and erosion rates were measured for natural nests. An experiment using artificial nests was conducted (2013) to compare nest survival rates between urbanized streams and areas with extant populations. Results indicate presence of suitable substrate and conditions in urbanized streams, but reduced nest survival due to flashy hydrology. Better understanding of habitat requirements coupled with mechanisms of impact from urbanization should result in a more accurate assessment of how restoration activities will benefit impacted ecosystem elements. Future research will focus on linking specific habitat requirements with population persistence and impacts of restoration efforts.

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