



Viviparus georgianus (Lea 1834) banded mysterysnail

Taxonomy & Systematics. *Viviparus* is a holarctic genus in the worldwide family Viviparidae, a strictly freshwater family of relatively large-bodied prosobranch gastropods, bearing concentric opercula. Viviparids have evolved specializations of the gill and mantle cavity allowing them to filter feed as well as graze. They are also distinguished by their ovoviviparity. Females brood eggs after fertilization in a "uterus," releasing young as crawling juveniles. The penis arises as a modified right tentacle.

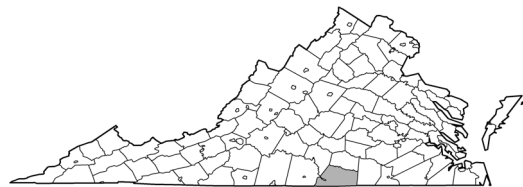
The taxonomy of American *Viviparus* has been stable since the brief monograph of Clench & Fuller. Synonyms include *contectoides*, *fasciata*, and *walkeri*. Clarke noted the striking similarity between *V. georgianus* and the European *Viviparus viviparus*, speculating that *Viviparus* populations in Canada might represent a cryptic invasion from Europe. Might the same be true for populations in the south?

Habitat & Distribution. Although originally described from the Altamaha River, *Viviparus georgianus* is not common in Georgia, or indeed anywhere in the southern Atlantic drainages. We have spotty records from the Ocmulgee/Altamaha river system, plus recent introductions in South Carolina and in Buggs Island Lake at Oconeechee State Park in southern Virginia. Clench reported records from the Potomac River near Washington that we have been unable to confirm.

Elsewhere in North America, *V. georgianus* is quite invasive. Clench gave the natural range of *V. georgianus* as "north central Florida, Georgia, Alabama and north, mainly in the Mississippi River system, to Illinois and northwest Indiana," suggesting that the occurrence of the species throughout the northeast and into Canada might be a recent (and often human-mediated) invasion.

Ecology & Life History. Cook documented filter feeding (or perhaps "ciliary feeding" is more descriptive) in the European *V. viviparus*. But standard grazing also seems to be an option. The experiments of Duch demonstrated both a preference for silt-mud substrate over rock bottom in *V. georgianus*, and a strong orientation toward silt containing diatoms.

Northern *V. georgianus* populations show a broad range of life cycle pattern, maturing in a single year and reproducing iteroparously, maturing in two years and reproducing iteroparously, and maturing in three years followed by semelparous reproduction. The mortality that may follow reproduction (perhaps natural in some populations) can yield spectacular accumulations of dead shell.



Minnesota populations of *V. georgianus* have been implicated as the primary intermediate host for digenean trematodes causing massive waterfowl mortalities.

Conservation Status. NatureServe G5/S4 - Secure/Apparently Secure.