



Leptoxis carinata (Brug. 1792)
crested mudalia

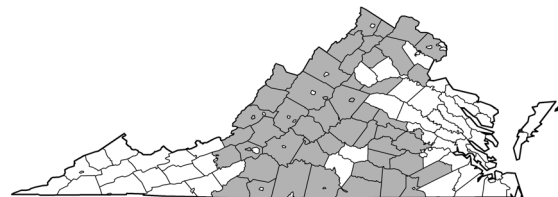
Taxonomy & Systematics. *Leptoxis* is a genus in the (primarily North American) family Pleuroceridae - prosobranch gastropods of moderate body size, generally inhabiting shallow waters, males aphyllid. Females can be distinguished by an egg laying groove on the right side of their foot. Most populations are perennial and iteroparous, typically requiring more than a year to mature and living several years. Eggs are affixed to hard substrates singly or in small clusters from spring to midsummer. Pleurocerids are generalized grazers, and where present in high density can have significant effects on energy flow in streams.

Leptoxis carinata populations display striking variation in shell ridging, ranging from entirely smooth to strongly marked with spiral chords. A great variety of generic nomina have been suggested for *L. carinata* over the years, including *Anculosa*, *Spirodon*, *Nitocris*, and *Mudalia*. A partial list of specific synonyms would include *corpulenta*, *dissimilis*, *nickliniana*, and *variabilis*. Dillon & Robinson nominated *L. carinata* as one of the "snails the dinosaurs saw," suggesting on the basis of DNA sequence data that populations of these snails may date to the Appalachian orogeny.

Habitat & Distribution. *Leptoxis carinata* ranges through Atlantic coastal drainages from New York to North Carolina. In Virginia, *L. carinata* is a common inhabitant of lotic environments in the Ridge and Valley, Piedmont, and upper Coastal Plain provinces. Populations reach maximum density in streams and rivers with moderate to strong current and abundant rocky substratum.

Ecology & Life History. Stewart & Garcia reported that topographic complexity of substratum was the primary cause of local variation in *Leptoxis carinata* densities and total biomass in a Virginia Piedmont stream. Density and biomass were greatest in plots with boulders and cobble that provide ideal foraging habitat for these periphyton scrapers, as well as refuge from high-flow events. In such environments, *L. carinata* densities can exceed 500 individuals per square meter, and this species can constitute more than 80% of total macroinvertebrate biomass. In addition to grazing on rock-inhabiting diatoms and other algae, *L. carinata* can obtain energy and nutrients through shredding leaves.

Aldridge and Jokinen independently reported semelparous reproduction in northern populations, adults maturing in two years, although iteroparity is almost certainly the rule for southern populations. Eggs are deposited on hard substrates in the spring or summer, singly or in masses up to an average of 170-400 eggs per female.



Conservation Status. NatureServe G5/S5 - Secure.