

Valvata tricarinata (Say 1817)

three-ridge valvata



Taxonomy & Systematics. Valvatids comprise their own unique Superfamily Valvatacea, a strictly freshwater group whose marine ancestor is difficult to identify. Their hermaphroditic mode of reproduction is unique among freshwater prosobranchs. Their ciliated bodies and the extension of their mantle into a pallial tentacle have been interpreted as adaptations for filter feeding, although this is by no means certain.

The nomen *Valvata tricarinata* has been taxonomically stable since the early 20th century. *Valvata* populations are notoriously polymorphic with respect to shell morphology, however, and the distinction between *V. tricarinata* and *V. bicarinata* (bearing two spiral carinae or angulations on the shell) seems tenuous at best.

Habitat & Distribution. We have confirmed only a single population of *V. tricarinata* in the Atlantic drainages of Virginia, inhabiting a ditched and weedy section of Horsepen Run near Dulles International Airport. There are also published reports of the species from Virginia interior drainages. Elsewhere, populations of *V. tricarinata* range across the northern United States and Canada from New York through Iowa to the Rockies, typically in aquatic vegetation in rich, perennial lakes, ponds and rivers above the glacial maximum.

Ecology & Life History. Populations of *V. tricarinata* typically display an annual, semelparous life cycle, gelatinous masses of 10 - 30 eggs being laid on solid substrates during the spring and summer. Within lakes the distribution of *Valvata* is contagious, and may reach maximum density in deeper waters. Jokinen's analysis of the distribution of *V. tricarinata* across Connecticut led her to classify it as a "High-S" species, found only in richer, more stable environments. Connecticut populations appear to be undifferentiated with regard to their life history adaptation.

Valvata tricarinata has been listed among the prey of pumpkinseed sunfish in Michigan.

Conservation Status. NatureServe G5/SU - Secure/Under Review.
Virginia Wildlife Action Plan Tier IV - Moderate Conservation Need

