

Taxonomic Structures and Glossary of Terms Referenced in Georgia's Protected Mussel and Snail Accounts

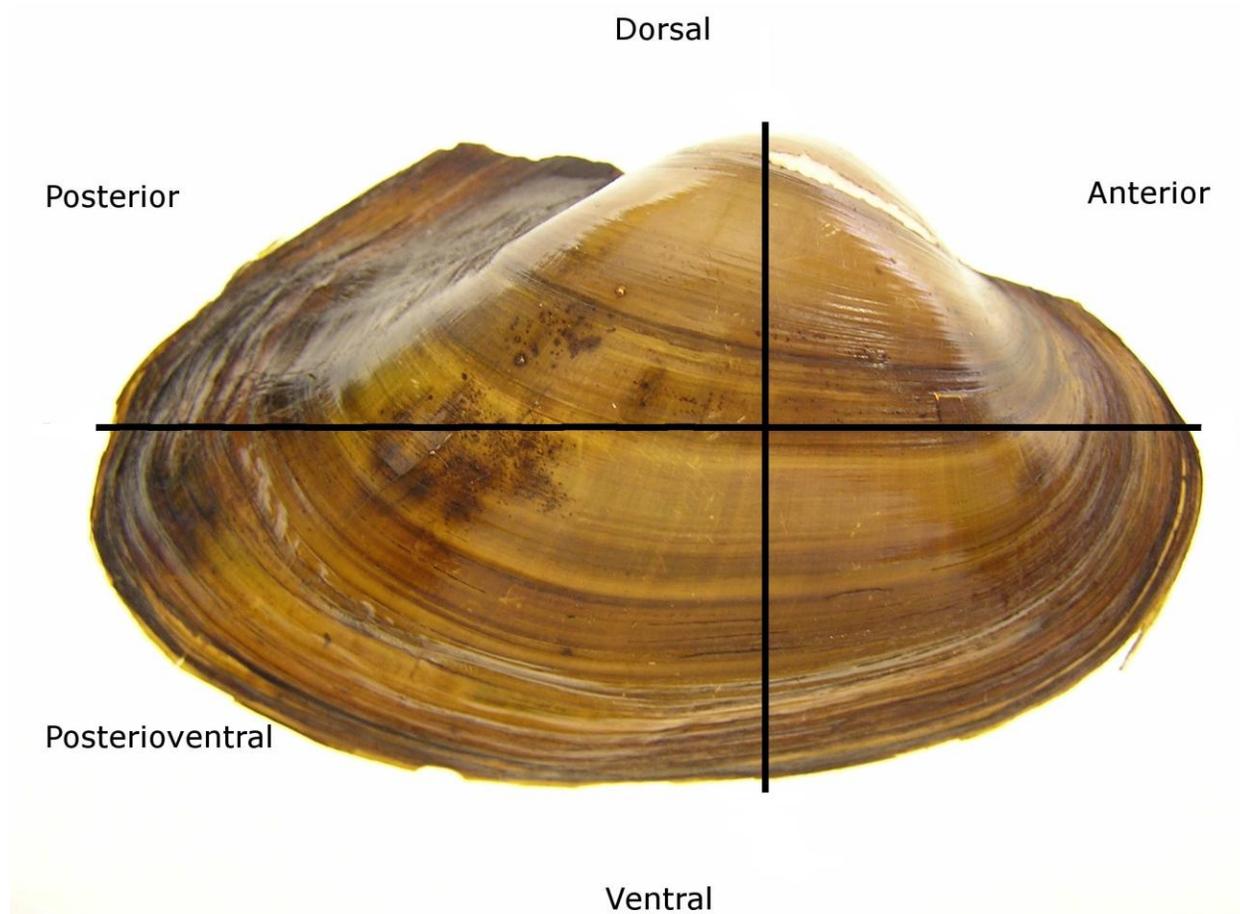


Figure 1. Cardinal directions of a freshwater mussel. Pictured is the right valve of the Inflated floater (*Pyganodon gibbosa*).

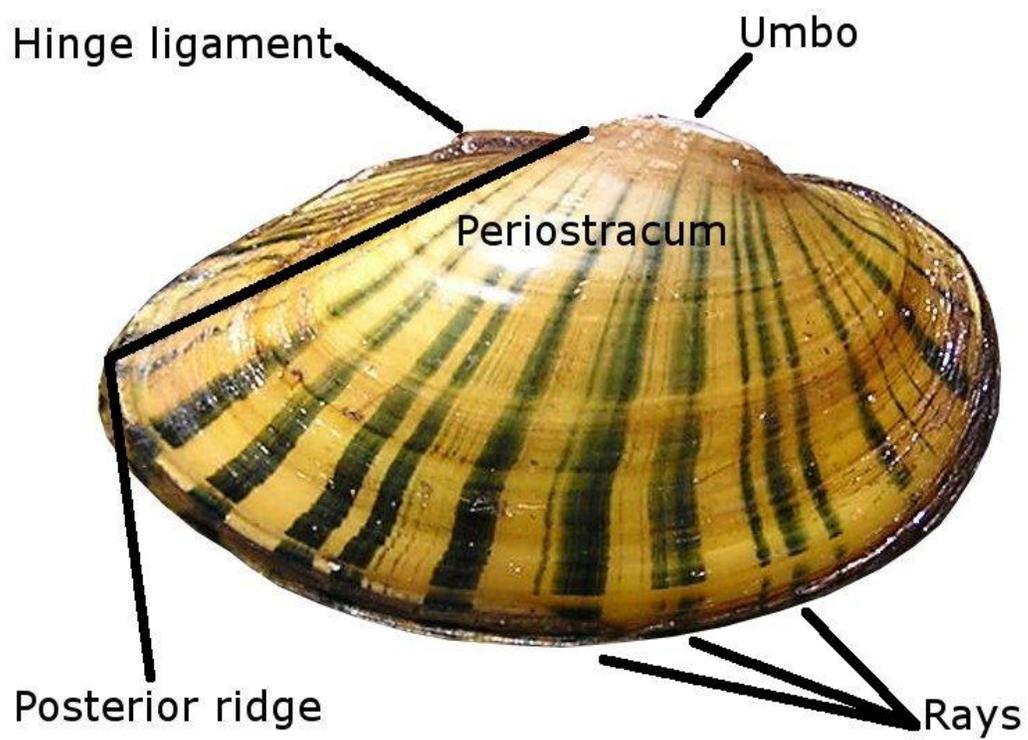


Figure 2. External characteristics of a freshwater mussel. Pictured is the right valve of a Shinyrayed pocketbook (*Hamiota subangulata*).

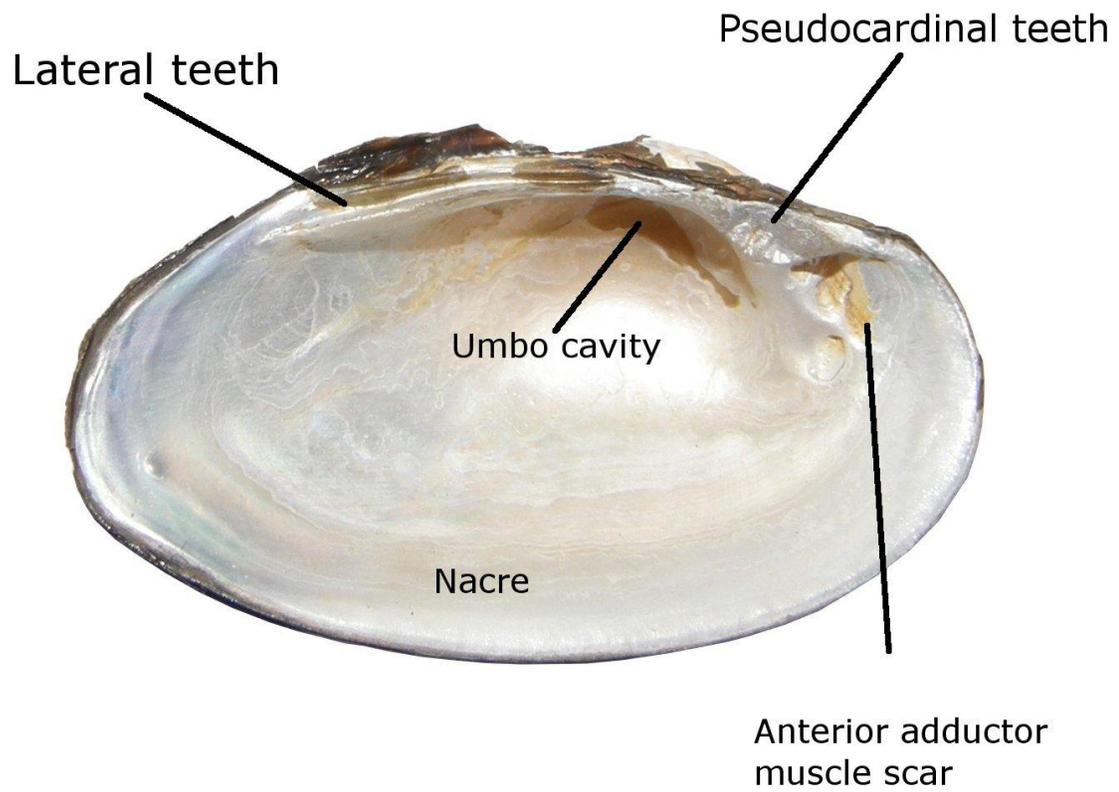


Figure 3. Internal shell characteristics of a freshwater mussel. Pictured is the left valve of the Savannah lilliput (*Toxolasma pullus*).

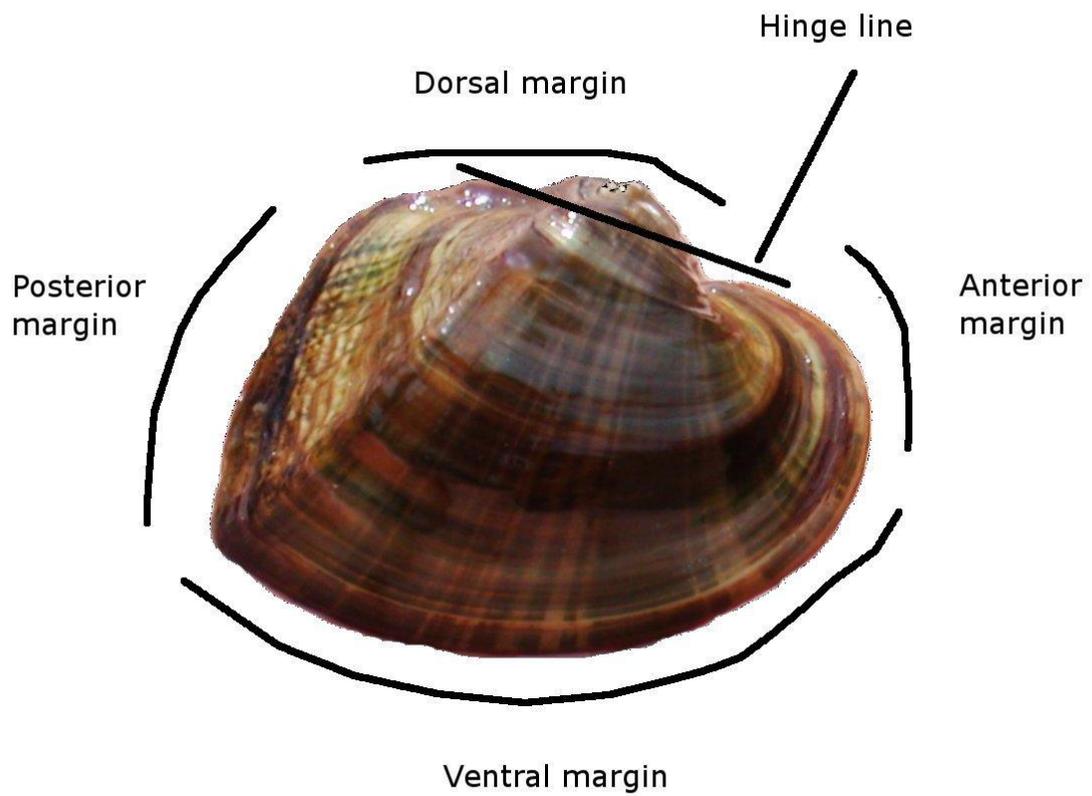


Figure 4. Locations of the margins and hingeline of a freshwater mussel. Pictured is the right valve of the Altamaha arc mussel (*Alasmidonta arcula*).

Plications



Corrugations



Spines



Figure 5. Examples of sculpturing and spines of adult mussels. The plications of the Fat threeridge (*Amblema neislerii*); Corrugations of the Gulf moccasinshell (*Medionidus penicillatus*); Spines of the Altamaha spinymussel (*Elliptio spinosa*).

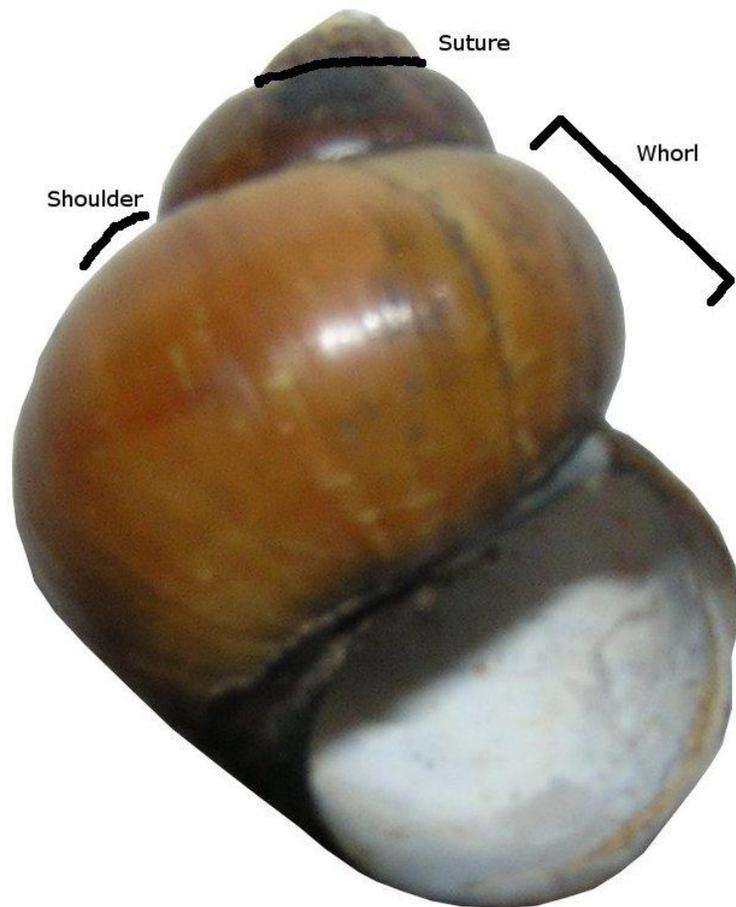


Figure 6. Characteristics of a gastropod shell.

Glossary of Terms

Anterior - directional term indicating front end of an organism; toward the front (Figure 1).

Anterior margin – the anterior edge of a valve (Figure 4).

Aquifer - underground layer of water contained in permeable rock or in gravel, silt, sand, or clay.

Arcuate – curved or bent.

Beak – see umbo.

Beak cavity – see umbo cavity.

Biangular – having two angles or corners.

Columella – the central axis of a coiled shell.

Conglutinate – a mass of glochidia bound together by mucous, often resembling food items of various fish species.

Corrugation – small, parallel ridges (Figure 5).

Dorsal - directional term indicating the "back" or "top" of an animal or object (Figure 1).

Dorsal margin – the top edge of a valve (Figure 4).

Endemic - native to a particular place.

Extrapallial swelling – the posteroventral swelling exhibited by females of several genera of freshwater mussels.

Filter feeding – the process of gathering nutrients from the water column through the siphoning water through the incurrent aperture of a freshwater mussel.

Foot – a fleshy and movable portion of a mussel used for locomotion and feeding.

Gill – an organ functioning to extract dissolved oxygen from water.

Globose – globular or rounded.

Glochidia – the larvae of freshwater mussels in the order Unioniformes.

Gravid – carrying eggs or larvae.

Hinge ligament – the ligament located on the dorsal margin of a bivalve connecting the left and right valve (Figure 2).

Hingeline – a hypothetical line passing through the hinge ligament of a mollusk from anterior to posteriorly (Figure 4).

Karst - limestone area where erosion has created sinkholes, caves, and underground streams.

Lateral- directional term indicating “to the side.”

Lateral teeth – elongate calcified projections located parallel to the hinge ligament on the interior of a mollusk valve, serving to interlock opposing valves (Figure 3).

Lentic - areas with non-moving water such as ponds or swamps.

Mantle – the fleshy tissue surrounding the soft tissue of a mussel responsible for secreting the calcified shell.

Margin – the outermost edge of a valve (Figure 4).

Nacre – the lustrous, calcified interior of a valve (Figure 3).

Operculum – a protein plate attached to ventral portion of a gastropod that can be retracted to encapsulate the soft tissue of the gastropod.

Pedal feeding – a process using the foot of a bivalve to gather algae and bacteria from surrounding substrate.

Periostracum – thin, protein layer covering the outside of a bivalve and gastropod shell (Figure 2).

pH - measure of acidity or alkalinity of a solution. Low pH is acid; high pH is alkaline.

Plications – large, parallel ridges in a series (Figure 5).

Posterior - directional term indicating rear end of an organism; toward the rear (Figure 1)

Posteroventral – the rear bottom of a valve (Figure 1).

Posterior margin – the posterior edge of a valve (Figure 4).

Posterior ridge – the crest radiating from the umbo to the posteroventral margin of a valve (Figure 2).

Pseudocardinal teeth – Calcified projections located anterior to the hinge ligament on the interior of a mollusk valve, serving to interlock opposing valves (Figure 3).

Ray – a pigmented line located on the periostracum radiating from the umbo of a bivalve (Figure 2).

Riffle - areas of fast flow in a stream where surface of water is agitated.

Riparian - area along the margin of a stream.

Sculpturing – naturally occurring raised ridges or depressions on the exterior of a shell (Figure 5).

Shoulder – the rounded portion of a whorl (Figure 6).

Spines – calcified pointed structures projecting from the exterior of a valve (Figure 5).

Striations – a series of small, low parallel ridges on the exterior of a shell.

Substrate – the bottom layer of a waterbody.

Superconglutinate – a conglutinate attached to the excurrent aperture of a freshwater mussel by a transparent gelatinous tube.

Suture – the line joining two whorls together (Figure 6).

Truncate – terminating abruptly, often squared.

Umbo – An elevated and rounded projection on the dorsal margin located anterior to the hinge ligament. All shell growth originates from this location. Also referred to as the beak (Figure 2).

Umbo cavity – the pocket located inside a valve underneath the umbo. Often referred to as the umbo pocket or beak cavity (Figure 3).

Unionidae – The family in which all native freshwater mussels in Georgia belong. One of two families of Unioniformes occurring in North America.

Unioniformes – the order in which all native freshwater mussels in North America occur. Characterized by a life history having a parasitic larvae stage.

Valve – half of the calcified structure secreted from a bivalve in opposition to one another. Often referred to as one half of the shell.

Ventral - directional term indicating the "belly" or "bottom/underside" of an animal (Figure 1).

Ventral margin – the bottom edge of a valve (Figure 4).

Whorl – a single coil of a spiraled shell (Figure 6).

Document updated by Jason Wisniewski, April 2011.