

(*Ammocrypta beani*), southern sand darter (*A. meridianus*), johnny darter (*E. nigrum*), speckled darter (*E. stigmaeum*), saddleback darter (*Percina vigil*), and logperch (*P. caprodes*) have been identified as suitable host fish (Haag and Warren 1997, 2001).

The Alabama moccasinshell was historically known from the Alabama, Tombigbee, Black Warrior, Cahaba, and Coosa Rivers and their tributaries in Alabama, Mississippi, Georgia, and Tennessee. The species has disappeared from the mainstems of all of these rivers, but continues to survive in Tombigbee River tributaries, including Bull Mountain Creek (Itawamba County, Mississippi), Luxapalila Creek (Lowndes County, Mississippi) and tributary Yellow Creek (Lowndes County, Mississippi; Lamar County, Alabama), Buttahatchee River (Lowndes/Monroe County, Mississippi, Lamar County, Alabama), and tributary Sipsey Creek (Monroe County, Mississippi), Lubbub Creek (Pickens County, Alabama), and Sipsey River (Greene/Pickens County, Alabama); Black Warrior River tributaries, including the Sipsey Fork and tributaries (Winston/Lawrence County, Alabama); and Holly Creek (Murray County, Georgia) in the Coosa River drainage (Dodd *et al.* 1986; Evans 2001; Hartfield and Bowker 1992; Hartfield and Jones 1989, 1990; Johnson and Evans 2000; Jones 1991; Jones and Majure 1999; McGregor 1992; McGregor *et al.* 1996; McGregor 2000; McGregor *et al.* 2000; MS Museum of Natural Science collection record 1984–2001; Pierson 1991a, b; Warren and Haag 1994; Yokley 2001). Except for the Sipsey Fork, populations are small and localized. Highest densities observed during field surveys have been from the Sipsey Fork and its headwater tributaries in Bankhead National Forest, where quantitative samples from selected sites estimated Alabama moccasinshells densities from 0 to 2.8/10 m² (Warren and Haag 1994).

Coosa Moccasinshell (*Medionidus parvulus* (Lea 1860))

The Coosa moccasinshell is a small species occasionally exceeding 40 mm (1.6 in) in length. The shell is thin and fragile, elongate and elliptical to rhomboidal in outline. The posterior ridge is inflated and smoothly rounded, terminating in a broadly rounded point; the posterior slope is finely corrugated. The periostracum is yellow-brown to dark brown and has fine green rays. The nacre is blue, occasionally with salmon-colored spots.

Coosa moccasinshells are usually completely buried in the stream bottom.

Because this species is apparently closely related to the Alabama moccasinshell, gravid females of this species likely migrate to the surface of the stream bottom during spring glochidial release periods, as do gravid Alabama moccasinshell females. Coosa moccasinshell glochidia are known to use blackbanded darters as hosts; however, other species of darters are also likely to be used (P. Johnson, Tennessee Aquarium Research Institute, pers. comm. 2002).

The Coosa moccasinshell has been historically reported from the Cahaba River, the Sipsey Fork of the Black Warrior River, and the Coosa River, and their tributaries, in Alabama, Georgia, and Tennessee. Since the species was listed, its presence has been confirmed only in the Conasauga River (Murray/Whitfield County, Georgia; Bradley County, Tennessee), and its tributary, Holly Creek (Murray County, Georgia) (Johnson and Evans, 2000, Williams and Hughes 1998). It has apparently been eliminated from the Cahaba and Black Warrior River drainages, as well as from the Coosa River and many of its tributaries.

Ovate Clubshell (*Pleurobema perovatum* (Conrad 1834))

The ovate clubshell is a small to medium-sized mussel that rarely exceeds 50 mm (2.0 in) in length. The shell is oval to elliptical in shape, and has nearly terminal, inflated umbos. The posterior ridge is well-developed, broadly rounded, and often concave. The posterior slope is produced well beyond the posterior ridge. Periostracum color varies from yellow to dark brown, and occasionally has broad green rays that may cover most of the umbo and posterior ridge. The nacre is white. Gravid females of this species have been observed in June and July. Glochidia are released in well formed, white conglutinates (W.R. Haag unpublished data). Host fishes for this species are unknown.

The ovate clubshell was historically distributed in the Tombigbee, Black Warrior, Alabama, Cahaba, and Coosa Rivers and their tributaries in Mississippi, Alabama, Georgia, and Tennessee; and in Chewacla, Uphapee and Opintlocco Creeks in the Tallapoosa River drainage, Alabama. It has disappeared from the Black Warrior, Cahaba, and Alabama River drainages, as well as the mainstem Tombigbee River and Uphapee and Opintlocco Creeks. Currently, the species is known to survive in several Tombigbee River tributaries, including Buttahatchee River (Lowndes/Monroe County, Mississippi), Luxapalila Creek and its

tributary Yellow Creek (Lowndes County, Mississippi), Sipsey River (Greene/Pickens/Tuscaloosa County, Alabama), Sucarnoochee River (Sumter County, Alabama), and Coalfire Creek (Pickens County, Alabama); and Chewacla Creek (Macon County, Alabama) in the Tallapoosa River drainage; and a short reach of the Coosa River below the mouth of Terrapin Creek (Cherokee County, Alabama) (Dodd *et al.* 1986, Feminella and Gangloff 2000, Hartfield and Bowker 1992, Hartfield and Jones 1990, Jones 1991, McGregor 1992, McGregor 1993, McGregor *et al.* 1996, McGregor 2000, McGregor and Haag *in prep.*, Miller 2000, Pierson, 1991a, b; Yokley 2001). Populations are small and localized.

Southern Clubshell (*Pleurobema decisum* (Lea 1831))

The southern clubshell is a medium sized mussel about 70 mm (2.8 in) long, with a thick shell, and heavy hinge plate and teeth. The shell outline is roughly rectangular, produced posteriorly with the umbos terminal with the anterior margin, or nearly so. The posterior ridge is moderately inflated and ends abruptly with little development of the posterior slope at the dorsum of the shell. The periostracum is yellow to yellow-brown with occasional green rays or spots on the umbo in young specimens.

Gravid southern clubshell females with mature glochidia have been collected in June and July. Glochidia are released in well formed conglutinates orange or white in coloration (Haag and Warren 2001). Blacktail shiner (*Cyprinella venusta*), Alabama shiner (*C. callistia*), and tricolor shiner (*C. trichroistia*) have been identified as fish host (Haag and Warren 2001, P. Johnson pers. comm. 2002).

With the exception of the Tensas/Mobile River, the southern clubshell was formerly known from every major river system in the Mobile River Basin, including the Alabama, Tombigbee, Black Warrior, Cahaba, Tallapoosa, and Coosa Rivers and many of their tributaries in Mississippi, Alabama, Georgia, and Tennessee. This species has disappeared from the Cahaba River drainage, the main channels of the Tombigbee and Black Warrior Rivers, and from a number of tributaries in all of the drainages. Southern clubshell continues to inhabit the East Fork Tombigbee River (Itawamba/Monroe County, Mississippi), Bull Mountain Creek (Itawamba County, Mississippi), Buttahatchee River (Monroe/Lowndes County, Mississippi), Luxapalila and Yellow Creeks (Lowndes County, Mississippi), Lubbub Creek (Pickens County, Alabama), and Sipsey River