

Memo

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To: Dick Neves, NBS
Dick Biggins, Asheville Field Office
Andy Moser, Chesapeake Bay Field Office
Susi von Oettengin, New England Field Office
Roberta Hylton, Southwestern Virginia Field Office
Leroy Koch, Southwestern Virginia Field Office
Barry Wicklow, St. Anselm College
Bill Tolin, West Virginia Field Office
Mike Pinder, VDGIF
Monte McGregor, VDGIF
Leigh Ann McDougal, USFS

From: Cindy Schulz *CS*

Subject: Freshwater Mussel Fish Hosts

Attached is a table of selected rare freshwater mussels that occur or did occur in Virginia and their known or possible fish hosts. If you have any comments, corrections, or additions please let me know. I hope you find this useful.



HOST SPECIES FOR RARE FRESHWATER MUSSELS IN VIRGINIA
 PREPARED BY U.S. FISH AND WILDLIFE SERVICE, VIRGINIA FIELD OFFICE
 Last Revised: 10/22/97

Freshwater Mussel	Host Fishes	References
Dwarf wedge mussel (<i>Alasmidonta heterodon</i>)	¹ johnny darter (<i>Etheostoma nigrum</i>) ¹ mottled sculpin (<i>Cottus bairdi</i>) ² slimy sculpin (<i>Cottus cognatus</i>) ¹ tessellated darter (<i>Etheostoma olmstedii</i>)	¹ Michaelson, D.L. and R.J. Neves. 1995. Life history and habitat of the endangered dwarf wedgemussel <i>Alasmidonta heterodon</i> (Bivalvia: Unioniidae). <i>J. N. Am. Benthol. Soc.</i> 14(2):324-340. ² Dr. Barry Wicklow, St. Anselm College, NH
Elktoe (<i>Alasmidonta marginata</i>)	^{1,2} northern hogsucker (<i>Hypentelium nigricans</i>) ^{1,2} shorthead redhorse (<i>Moxostoma macrolepidotum</i>) ^{1,2} rock bass (<i>Ambloplites rupestris</i>) ^{1,2} warmouth (<i>Lepomis gulosus</i>) ^{1,2} white sucker (<i>Catostomus commersoni</i>)	¹ Fuller, S.L.H. 1974. Clams and mussels (Mollusca:Bivalvia). In: C.W. Hart, Jr. and S.L.H. Fuller (eds.): <i>Pollution Ecology of Freshwater Invertebrates</i> . New York: Academic Press, pp. 215-273. ² Howard A.D. and B.J. Anson 1922. Phases in the parasitism of the Unioniidae. <i>J. Parasitology</i> 9:68-82.
Brook floater (<i>Alasmidonta varicosa</i>)	¹ blacknose dace (<i>Rhinichthys atratulus</i>) ¹ golden shiner (<i>Notemigonus crysoleucas</i>) ¹ longnose dace (<i>Rhinichthys cataractae</i>) ¹ marginated madtom (<i>Noturus insignis</i>) ¹ pumpkinseed (<i>Lepomis gibbosus</i>) ¹ slimy sculpin (<i>Cottus cognatus</i>) ¹ yellow perch (<i>Perca flavescens</i>)	¹ Dr. Barry Wicklow, St. Anselm College, NH.
Birdwing pearlymussel (<i>Conradilla cuelata</i>)	^{1,2} banded darter (<i>Etheostoma zonale</i>) ² bluntnose darter (<i>Etheostoma simetervum</i>) Possible hosts: ¹ greenside darter (<i>Etheostoma blennioides</i>) ² mirror shiner (<i>Notropis spectrunculus</i>) ² spotfin shiner (<i>Cyprinella spilopterus</i>) ² whitetail shiner (<i>Cyprinella galactura</i>)	¹ Hill, D.M. 1986. Cumberlandian Mollusk Conservation Program Activity 3: Identification of fish hosts. Tennessee Valley Authority Office of Natural Resources and Economic Development. ² U.S. Fish and Wildlife Service. 1983. Birdwing pearly mussel recovery plan. Atlanta, GA.
Spectaclecase (<i>Cumberlandia monodonta</i>)	unknown	
Fanshell (<i>Cyprogenia stegaria</i>)	unknown	

reference is B. Watson MS Thesis (in preparation) for all addresses

Freshwater Mussel	Host Fishes	References
Dromedary pearlymussel (<i>Dromus dromas</i>)	<p>Possible hosts: <i>Fantail darter (Etheostoma flabellare)</i> gilt darter (<i>Percina evides</i>) tangerine darter (<i>Percina aurantiaca</i>) logperch (<i>Percina caprodes</i>)</p> <p>unknown</p>	<p>¹Neves, R.J. 1991. Dromedary pearlymussel. Pages 292-294 in K. Terwilliger, ed. Virginia's Endangered Species, Proceedings of a Symposium. McDonald and Woodward Publishing Co., Blacksburg, VA.</p>
Yellow lance (<i>Elliptio lanceolata</i>)	unknown	
Cumberlandian combshell (<i>Epioblasma brevidens</i>)	<p>^{1,2}banded sculpin (<i>Cottus caroliniae</i>) ^{1,2}greenside darter (<i>Etheostoma blennioides</i>) ^{1,2}logperch (<i>Percina caprodes</i>) ^{1,2}redline darter (<i>Etheostoma rufilineatum</i>) ¹spotted darter (<i>Etheostoma maculatum</i>) ^{1,2}Tennessee snubnose darter (<i>Etheostoma simoternum</i>) ^{1,2}wounded darter (<i>Etheostoma vulneratum</i>)</p>	<p>¹Yeager, B.L. 1987. Fish hosts for glochidia of <i>Epioblasma brevidens</i>, <i>E. capsaeformis</i>, and <i>E. triquetra</i> (Pelecypoda: Unioniidae) from the upper Tennessee River drainage. Unpublished report on file with Office of Natural Resources and Economic Development, Tennessee Valley Authority, Norris, TN.</p> <p>²Yeager B.L. and C.F. Saylor. 1995. Fish Hosts for Four Species of Freshwater Mussels (Pelecypoda:Unioniidae) in the Upper Tennessee River Drainage. Amer. Midland Naturalist 133(1):1-6.</p>
Oyster mussel (<i>Epioblasma capsaeformis</i>)	<p>^{1,2}banded sculpin (<i>Cottus caroliniae</i>) ^{1,2}dusky darter (<i>Percina sciera</i>) ^{1,2}redline darter (<i>Etheostoma rufilineatum</i>) ^{1,3}spotted darter (<i>Etheostoma maculatum</i>) ²wounded darter (<i>Etheostoma vulneratum</i>)</p>	<p>¹Yeager, B.L. 1987. Fish hosts for glochidia of <i>Epioblasma brevidens</i>, <i>E. capsaeformis</i>, and <i>E. triquetra</i> (Pelecypoda: Unioniidae) from the upper Tennessee River drainage. Unpublished report on file with Office of Natural Resources and Economic Development, Tennessee Valley Authority, Norris, TN.</p> <p>²Yeager, B.L. and C.F. Saylor. 1995. Fish Hosts for Four Species of Freshwater Mussels (Pelecypoda:Unioniidae) in the Upper Tennessee River Drainage. Amer. Midland Naturalist 133(1):1-6.</p> <p>³Hill, D.M. 1986. Cumberlandian Mollusk Conservation Program Activity 3: Identification of fish hosts. Tennessee Valley Authority Office of Natural Resources and Economic Development.</p>
Green-blossom pearlymussel (<i>Epioblasma torulosa gubernaculum</i>)	unknown	

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Snuffbox mussel (<i>Epioblasma triquetra</i>)	^{1,2,3} banded sculpin (<i>Cottus caroliniae</i>) ^{1,2,3} logperch (<i>Percina caprodes</i>)	¹ Yeager, B.L. 1987. Fish hosts for glochidia of <i>Epioblasma brevidens</i> , <i>E. capsaeformis</i> , and <i>E. triquetra</i> (Pelecypoda: Unioniidae) from the upper Tennessee River drainage. Unpublished report on file with Office of Natural Resources and Economic Development, Tennessee Valley Authority, Norris, TN. ² Yeager, B.L. and C.F. Saylor. 1995. Fish Hosts for Four Species of Freshwater Mussels (Pelecypoda: Unioniidae) in the Upper Tennessee River Drainage. Amer. Midland Naturalist 133(1): 1-6. ³ Hill, D.M. 1986. Cumberlandian Mollusk Conservation Program Activity 3: Identification of fish hosts. Tennessee Valley Authority Office of Natural Resources and Economic Development.
Tan riffleshell (<i>Epioblasma walkeri</i>)	¹ banded sculpin (<i>Cottus caroliniae</i>) and/or mottled sculpin (<i>Cottus bairdi</i>) ¹ fantail darter (<i>Etheostoma flabellare</i>) ¹ greenside darter (<i>Etheostoma blennioides</i>) ¹ redline darter (<i>Etheostoma rufileineatum</i>) ¹ Tennessee snubnose darter (<i>Etheostoma simoterum</i>)	¹ Based on work conducted by Brian Watson, graduate student at VA Tech (Dr. Dick Neves, VA Coop. Fish and Wildl. Res. Unit, pers. comm. 7/23/96).
Shiny pigtoe (<i>Fusconaia cor</i>)	^{1,2} whitetail shiner (<i>Cyprinella galactura</i>) Possible hosts: ² common shiner (<i>Luxilus cornutus</i>) ² telescope shiner (<i>Notropis telescopus</i>) ² warpaint shiner (<i>Luxilus coccogenis</i>)	¹ Neves, R.J., F.X. O'Beirn, G.S. Schurig, and G.S. Libey. 1996. Fish host and propagation studies of freshwater mussels in the upper Tennessee River Drainage, Virginia and Tennessee. ² Neves, R.J. 1991. Shiny pigtoe. Pages 272-274 in K. Terwilliger, ed. Virginia's Endangered Species, Proceedings of a Symposium. McDonald and Woodward Publishing Co., Blacksburg, VA.
Fine-rayed pigtoe (<i>Fusconaia cuneolus</i>)	¹ central stoneroller (<i>Camptostoma anomalum</i>) ¹ fathead minnow (<i>Pimephales promelas</i>) ¹ mottled sculpin (<i>Cottus bairdi</i>) ¹ river chub (<i>Nocomis micropogon</i>) ¹ telescope shiner (<i>Notropis telescopus</i>) ¹ Tennessee shiner (<i>Notropis leuciodus</i>) ¹ white shiner (<i>Luxilus albeolus</i>) ¹ whitetail shiner (<i>Cyprinella galactura</i>)	¹ Bruenderman, S.A. 1989. Life history of the fine-rayed pigtoe pearly mussel, <i>Fusconaia cuneolus</i> (Lea 1840), in the upper Clinch River, Virginia. M.S. Thesis, Virginia Polytechnic Institute and State University, Blacksburg, VA.
Atlantic pigtoe (<i>Fusconaia masoni</i>)	unknown	

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Cracking pearlymussel (<i>Hemistena lata</i>)	unknown	
Pink mucket pearlymussel (<i>Lampsilis abrupta</i>)	'freshwater drum (<i>Aplodinotus grunniens</i>) 'sauger (<i>Stizostedion canadense</i>)	Virginia Department of Game and Inland Fisheries. 4/3/96. Fish and Wildlife Information System. Richmond, VA.
Yellow lampmussel (<i>Lampsilis cariosa</i>)		
Tennessee heelsplitter (<i>Lasmigona holstonia</i>)	unknown	
Green floater (<i>Lasmigona subviridis</i>)	unknown	
Slabside pearlymussel (<i>Lexingtonia dolabelloides</i>)	'smallmouth bass (<i>Micropterus dolomieu</i>) Possible hosts: 'popeye shiner (<i>Notropis arionnum</i>) 'rosyface shiner (<i>Notropis rubellus</i>) 'saffron shiner (<i>Notropis rubricroceus</i>) 'silver shiner (<i>Notropis photogenis</i>) 'telescope shiner (<i>Notropis telescopus</i>) 'Tennessee shiner (<i>Notropis leuciodus</i>)	'Kitchel, H.E. 1985. Life history of the endangered shiny pigtoe pearly mussel, <i>Fusconaia edgariana</i> , in the North Fork Holston River. M.S. Thesis, Virginia Polytechnic Institute and State University, Blacksburg, VA. 'Neves, R.J., F.X. O'Beim, G.S. Schurig, and G.S. Libey. 1996. Fish host and propagation studies of freshwater mussels in the Upper Tennessee River Drainage, Virginia and Tennessee.
Virginia pigtoe (<i>Lexingtonia subplana</i>)	unknown	
Little-wing pearlymussel (<i>Pegias fabula</i>)	Possible hosts: 'banded sculpin (<i>Cottus caroliniae</i>) 'redline darter (<i>Etheostoma rufilineatum</i>)	'Ahlstedt, S.A. 1986. A status survey of the little-wing pearly mussel <i>Pegias fabula</i> (Lea, 1838). Unpublished report on file with Endangered Species Field Office, United States Fish and Wildlife Service, Asheville, NC.

Freshwater Mussel	Host Fishes	References
James River spiny mussel (<i>Pleurobema collina</i>)	'blacknose dace (<i>Rhinichthys atratulus</i>) 'bluehead chub (<i>Nocomis leptcephalus</i>) 'central stoneroller (<i>Campostoma anomatum</i>) 'rosefin shiner (<i>Lythrurus ardens</i>) 'rosyside dace (<i>Clinostomus funduloides</i>) 'satinfin shiner (<i>Cyprinella analostana</i>) 'swallowtail shiner (<i>Notropis procne</i>) 'mountain redbelly dace (<i>Phoxinus oreas</i>)	'Hove, M.C. and R.J. Neves. 1994. Life history of the endangered James spingymussel <i>Pleurobema collina</i> (Conrad, 1837)(Mollusca: Unionidae). Amer. Malacological Bulletin 11(1):29-40.
Tennessee clubshell (<i>Pleurobema oviforme</i>)	'central stoneroller (<i>Campostoma anomatum</i>) 'common shiner (<i>Luxilus cornutus</i>) 'fantail darter (<i>Etheostoma flabellare</i>) 'river chub (<i>Nocomis micropogon</i>) 'telescope shiner (<i>Notropis telescopus</i>) 'Tennessee shiner (<i>Notropis leuciodus</i>) 'whitetail shiner (<i>Cyprinella galactura</i>)	'Weaver, L.R., G.B. Pardue, and R.J. Neves. 1991. Reproductive biology and fish hosts of the Tennessee Clubshell <i>Pleurobema oviforme</i> (Mollusca: Unionidae) in Virginia. Amer. Midland Naturalist. 126:82-89.
Rough pigtoe (<i>Pleurobema plenum</i>)	Possible hosts: 'bluegill (<i>Lepomis macrochirus</i>) 'rosefin shiner (<i>Lythrurus ardens</i>)	'Neves, R.J. 1991. Rough pigtoe. Pages 284-285 in K. Terwilliger, ed. Virginia's Endangered Species, Proceedings of a Symposium. McDonald and Woodward Publishing Co., Blacksburg, VA.
Pink pigtoe (<i>Pleurobema pyramidatum</i>) = Pyramid pigote (<i>Pleurobema rubrum</i>)	Possible hosts: 'bluegill (<i>Lepomis macrochirus</i>) 'rosefin shiner (<i>Lythrurus ardens</i>)	'Neves, R.J. 1991. Pink pigtoe. Pages 285-286 in K. Terwilliger, ed. Virginia's Endangered Species, Proceedings of a Symposium. McDonald and Woodward Publishing Co., Blacksburg, VA.
Rough rabbitsfoot (<i>Quadrula cylindrica strigillata</i>)	'bigeye chub (<i>Hybopsis amblops</i>) 'spotfin shiner (<i>Cyprinella spiloptera</i>) 'whitetail shiner (<i>Cyprinella galactura</i>)	'Yeager, B.L. and R.J. Neves. 1986. Reproductive cycle and fish hosts of the Rabbit's foot mussel, <i>Quadrula cylindrica strigillata</i> (Mollusca: Unionidae) in the Upper Tennessee River Drainage. Amer. Midland Naturalist. 116(2):329-340.
Cumberland monkeyface pearlymussel (<i>Quadrula intermedia</i>)	^{1,2} blotched chub (<i>Erimystax insignis</i>) ^{1,2} streamline chub (<i>Erimystax dissimilis</i>)	'Hill, D.M. 1986. Cumberlandian Mollusk Conservation Program Activity 3: Identification of fish hosts. Tennessee Valley Authority Office of Natural Resources and Economic Development. ² Yeager, B.L. and C.F. Saylor. 1995. Fish hosts for Four Species of Freshwater Mussels (Pelecypoda: Unionidae) in the Upper Tennessee River Drainage. Amer. Midland Naturalist. 133(1):1-6.

Freshwater Mussel	Host Fishes	References
Appalachian monkeyface mussel (<i>Quadrula sparsa</i>)	unknown	
Purple lilliput (<i>Toxolasma lividus</i>)	^{1,2} green sunfish (<i>Lepomis cyanellus</i>) ^{1,2} longear sunfish (<i>Lepomis megalotis</i>)	¹ U.S. Fish and Wildlife Service. 1984. Pale lilliput pearly mussel recovery plan. Atlanta, GA. ² Hill, D.M. 1986. Cumberlandian Mollusk Conservation Program Activity 3: Identification of fish hosts. Tennessee Valley Authority Office of Natural Resources and Economic Development.
Rayed bean (<i>Villosa fabalis</i>)		
Purple bean (<i>Villosa perpurpurea</i>)	¹ banded sculpin (<i>Cottus caroliniae</i>) and/or mottled sculpin (<i>Cottus bairdi</i>) ¹ fantail darter (<i>Etheostoma flabellare</i>) ¹ greenside darter (<i>Etheostoma blennioides</i>)	¹ Based on work conducted by Brian Watson, graduate student at VA Tech (Dr. Dick Neves, VA Coop. Fish and Wildl. Res. Unit, pers. comm. 7/23/96).
Cumberland bean (<i>Villosa trabalis</i>)	unknown	