5-YEAR REVIEW
Virginia fringed mountain snail (*Polygyriscus virginianus*)

GENERAL INFORMATION:

Species: Virginia fringed mountain snail (*Polygyriscus virginianus*)
Date listed: July 3, 1978
FR citation(s): 43 FR 28932-28935
Classification: Endangered

BACKGROUND:

Most recent status review: U.S. Fish and Wildlife Service. 2007. Virginia fringed mountain snail (*Polygyriscus virginianus*) 5-year review. Gloucester, VA.

FR Notice citation announcing this status review: 85 FR 64527-64529, Initiation of 5-Year Reviews of 10 Northeastern Species, October 13, 2020.

ASSESSMENT:

Information acquired since the last status review: This 5-year review was conducted by the U.S. Fish and Wildlife Service's (Service) Virginia Field Office. Data for this review were solicited from interested parties through a Federal Register notice announcing this review on October 13, 2020. We also contacted State agencies, species experts, nongovernment organizations, stakeholders, and other individuals known to have interest in or prior involvement with the species to request any data or information we should consider in our review. Additionally, we conducted a literature search and a review of information in our files.

Several surveys funded by the Virginia Department of Wildlife Resources (formerly Virginia Department of Game and Inland Fisheries) and the Service were led by Kenneth Hotopp to inventory land snails in the New River valley of western Virginia from 2008 to 2010 (Hotopp 2009, 2010, 2011). A major focus of inventory efforts was to determine whether the Virginia Fringed Mountain Snail (VFMS) still persists, given speculations that the species may be extinct due to lack of observed live specimens since 1986 (Batie 1987a, Service 2007). Over 300 VFMS specimens were collected as part of this effort, including 4 fresh shells (i.e., intact periostracum with mostly unworn fringes and a yellow or light brown color) and a single live immature specimen (Hotopp 2011, Pearce and Hotopp 2011). The live specimen found in 2010 (figure 1) is the only VFMS seen alive in 35 years (Batie 1987a). This find along with fresh shells encountered, suggests that the species is extant. The amount of VFMS specimens (dead shells) recovered in this study increased the total number of curated specimens from approximately 200 (Batie 1987b, Hotopp 2009) to over 500 (Hotopp 2011). Additionally, results from this study added a new upstream limit for the species' range, increasing the range from a 10 kilometer (km) section (Service 2007) to approximately 15 km along the New River in Pulaski County, VA (Hotopp 2011). Finding additional specimens and expanding the species' range, does not alter our understanding of the species' associated habitat type as described in the previous status review (Service 2007).

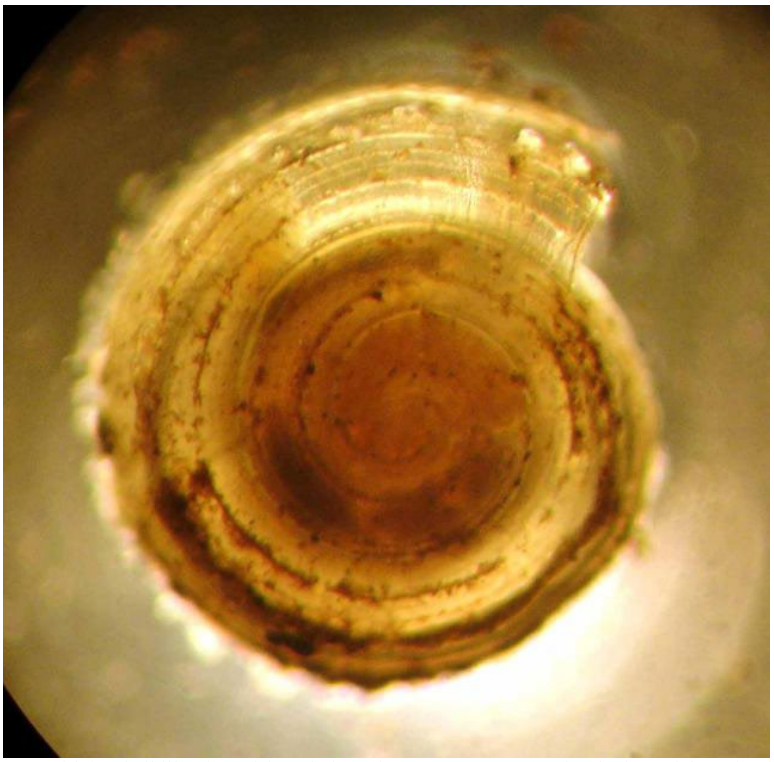

Figure 1. Live, immature VFMS with its shell illuminated from below (from Hotopp 2011). The shadow of the animal's body can be seen within, excepting the last quarter-turn of the shell which is more transparent. The small bead-like features are processes on the shell "fringe." This live specimen, found in 2010, became the 19th documented live VFMS individual and the first one observed since 1986 (Service 2007).

The Claytor Hydroelectric project on the New River in Pulaski County, VA is the only significant development project involving VFMS. Under the project relicensing process, the project proponent, Appalachian Power Company (APC), conducted VFMS surveys and a habitat assessment in 2007. No VFMS specimens were found during survey efforts, though six sites that contain suitable habitat for VFMS were identified during the habitat assessment (Devine Tarbell and Associates 2007). APC developed a VFMS management plan identifying measures to protect suitable habitat sites from disturbance and monitor suitable habitat areas annually for changes (APC 2009). APC also implemented a Shoreline Management Plan, in which the six sites are designated as "Impact Minimization Zones" (APC 2017a). This designation prohibits construction of structures or shoreline stabilization projects by ACP without prior consultation with appropriate Federal and state agencies (APC 2017a). All six sites are located on private property. Annual habitat monitoring reports indicate no change in VFMS habitat (APC 2017b, 2018, 2019, 2020). Beyond the six sites mentioned above, no additional locations are systematically or periodically monitored for VFMS or VFMS habitat.

The Virginia Natural Heritage Program (VNHP) developed a Predicted Suitable Habitat (PSH) layer for VFMS in 2019, using known occurrence data supplemented by a species distribution model (VNHP 2019). Experts' review determined the species distribution model to be useful in delineating suitable habitat outside of known occurrence locations (VNHP 2019). The PSH layer, which has been reviewed by VNHP and the Service, is currently being updated to encompass all known areas of VFMS suitable habitat, including those identified by the Claytor Hydroelectric project (J. Weber, VNHP, email to R. Case, Service, December 10, 2020).

Uncertainties surrounding the species' current population status and distribution continue to pose a threat to the species due to the potential for inadvertent loss of individuals or populations through human activities and/or natural events, as well as the potential for detrimental small-population effects (Service 2007). The new information since the 2007 review does not alter our understanding of the species' biological status or its status relative to threats. However, finding a live specimen and fresh shells in 2010 indicates that the species is extant; therefore, further conservation and research efforts are required to help recover the species.

Conclusion:

After reviewing the best available scientific information, we conclude that VFMS remains an endangered species. The evaluation of threats affecting the species under the factors in 4(a)(1) of the Act and analysis of the status of the species in our 2007 status review remain an accurate reflection of the species' current status.

RECOMMENDATIONS FOR FUTURE ACTIONS:

We continue to endorse recommendations 1 and 2 from our 2007 5-year review, and we add the following recommendations:

1) Conduct comprehensive species and habitat surveys in areas of potential suitable habitat, including those modeled in the PSH layer (VNHP 2019) to identify any undocumented occurrences. Hotopp (2011) and species' experts identified the area near Radford along the New River as suspected habitat, and therefore this area should be a primary focus for surveys.

2) Develop and implement a long-term plan to periodically monitor sites with documented occurrences. Search areas in which live specimen and fresh shells were found in 2010 as well as areas of similar habitat type. Expanding knowledge of the species' status is required to further identify and develop management strategies essential to the species' recovery.

U.S. FISH AND WILDLIFE SERVICE
5-YEAR REVIEW of Virginia fringed mountain snail (*Polygyriscus virginianus*)

Current Classification: Endangered

Recommendation resulting from the 5-Year Review:

____ Downlist to Threatened
____ Uplist to Endangered
____ Delist
_X__ No change needed

Appropriate Listing/Reclassification Priority Number, if applicable: Not applicable

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REGIONAL OFFICE APPROVAL:

Approve SHARON MARINO Digitally signed by SHARON MARINO Date: 2021.03.16 14:30:23 -04'00' Date _____

Assistant Regional Director, Ecological Services, North Atlantic-Appalachian Region

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