

**Written Statement of Testimony Related to the Proposed Critical
Habitat Designation for Rabbitsfoot Mussel (*Quadrula cylindrical
cylindrica*) and Neosho Mucket (*Lampsilis rafinesqueana*)**

Prepared for:

**Oversight Field Hearing on: “Protecting the rights of Property Owners: Proposed
Federal Critical Habitat Designations Gone Wild. May 14, 2014**

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1.0 INTRODUCTION

My name is Roland E. McDaniel. I am a Partner and Senior Scientist with GBM^C and Associates, an environmental consulting firm located in Bryant, Ar. I have over 34 years of experience as an aquatic biologist in the state of Arkansas, first as a regulator with the state agency (Arkansas Department of Environmental Quality) and the last 22 years as a private consultant. I have a B.S degree in Wildlife and Fisheries management and a M.S degree in biology with a focus on Aquatic Ecology. My masters thesis was a comprehensive life history assessment of the Yellowcheek Darter (*Etheostoma moorei*), which is now an endangered species in Arkansas. So in some way I have been dealing with threatened and endangered species for over 38 years.

The Arkansas Association of Counties contracted with GBMc and associates to review the scientific basis and justification for the proposed critical habitat (CH) designation. The following testimony is a result of that effort and will focus on:

- Background for the proposed CH designations,
- A consideration of the service definition of Occupied Habitat,
- Physical and biological features required by the Rabbitsfoot mussel,
- Summaries the CHU proposed for the Rabbits foot mussel in Arkansas,
- Streams considered but not yet proposed as critical habitat, and
- Potential ramifications of the proposed action.

Additional details, maps and tables supporting this testimony can be found in the document at the end of this written testimony. (GBMc, 2013, Review of Proposed Critical Habitat Designation for Rabbitsfoot Mussel (*Quadrula cylindrical cylindrical*) and Neosho Mucket (*Lampsilis rafinesqueana*)

2.0 BACKGROUND

The US Fish and Wildlife Service (Service) proposed critical habitat for the Rabbitsfoot Mussel (*Quadrula cylindrical cylindrical*) and the Neosho Mucket (*Lampsilis rafinesqueana*) on October 16, 2012. The comment period for the proposed action was extended and reopened for an additional 60 day comment period to end October 28, 2013. The proposed critical habitat for the Rabbitsfoot Mussel included 1,654 river miles across 15 states. The proposed action designating critical habitat for these two mussel species proposed 13 habitat units across Arkansas covering approximately 800 river miles (approximately 48% of the total proposed).

The streams included in the critical habitat units directly impacts 30 counties (28 Rabbitsfoot Mussel and 2 Neosho Mucket). Should all the proposed critical habitat units be adopted as proposed, the targeted watersheds cover approximately 42% of the geographical area of Arkansas.

The Service Species Assessment and Listing Priority Assignment Form are used by the Service to evaluate the species being proposed for action under the Endangered Species Act (ESA). The form for the Rabbitsfoot Mussel was approved on June 4, 2008 by the Regional Director and concurred by the Acting Director on October 29, 2009. This document provides a summary

of information related to the distribution, biology, threats to the species, rational for proposed listing and a ultimately a “listing priority” number.

The Rabbitsfoot Mussel was first identified as candidate in November 15, 1994 (59 FR58982). At which time the species was assigned a category 2 until 1996 (61 FR7596) when the listing was discontinued due to lack of information. The Rabbitsfoot Mussel was added to the candidate list again in the November 9, 2009 (74FR57804) with a Listing Priority Number (LPN) of 9 (out of 12), indicating threats determined to be moderate magnitude but imminent overall. The notice dated November 10, 2010 (75FR69222) again listed the Rabbitsfoot Mussel as candidate species and again with a LPN of 9. Even with the additional information developed after Butler (2006) from 2006 -2010, there was no change in the priority ranking of 9 out of 12, with a LPN of 1 being the most urgent listing priority.

According to the Service Assignment form an LPN of 9 indicates threats of a moderate magnitude; some of the threats are non-imminent, most are ongoing, and the threats are imminent overall. An LPN of 9 is the lowest in the imminent category. A LPN of 10 would indicate non-imminent condition. This listing is rather subjective and has resulted due to the “reduction in range and most of its extant populations are declining and /or isolated” (77 FR63476). This assessment was based largely on Butler (2005), the status report for the Rabbitsfoot Mussel. This status report ultimately categorized the condition of populations throughout the multistate range of the Rabbitsfoot Mussel often as an opinion comparing limited qualitative data to determine population status. Butler (2005) categorized extant populations based on “qualitative information” comparing recent survey data, post 2000, to largely qualitative descriptors provided in the historical documentation.

As provided later in this testimony, several stream segments in Arkansas that were once thought to no longer support viable populations of the Rabbitsfoot mussel, have recently (2012-2013) been determined to harbor populations. This information is currently in press (personnel communication with Bill Posey, Arkansas Game and Fish Commission state Malacologist, 2031). This new information begs the question. “Was the Service justified in its designation of the Rabbitsfoot mussel as a threatened species, especially if there are other populations one or more of the other 14 states not yet accounted for?”

The Neosho Mucket was first identified as candidate species on May 22, 1984 (49FR21664) status 2 category until 1996. The designation was discontinued due to lack of information. It was relisted as a candidate in October 30, 2001 (66FR54808). The 2001 listing priority assigned was 5 (out of 12). Listing priority was reassessed in 2010 and changed from 5 to 2, indicating threats to the conservation of the species were imminent and high in magnitude.

3.0 OCCUPIED HABITAT

In the determination of critical habitat units, the Service chose to **expand** the definition of critical habitat to include stream segments which had not been demonstrated to harbor populations of the target species (Rabbitsfoot Mussel and Neosho Mucket). As provided in the proposed listing (77 FR63475) the Service provides that:

“Therefore, where one occurrence record was known from a river reach, we considered the entire river reach between the uppermost and lowermost locations as occupied habitat except lakes and reservoirs.”

These definitions and their application in the determination of the proposed Critical Habitat Units (CHU) raised three primary considerations that are not supported including:

- The proposed CHU includes long distance stream segments, large portions of some of which have not been documented to harbor and/or support the target species,
- Portions of selected CHU demonstrate conditions (e.g. hypolimnetic releases and year round reduced water temperatures) that are not conducive to mussel population development and are not supportive of the target species considered in this proposal, and
- That the entire river reach provides critical habitat **ESSENTIAL** to the conservation of the individual species implies that critical habitat identified as necessary for Rabbitsfoot Mussel (both substrate and flow refugia) occurs in the entire proposed reach.

4.0 PHYSICAL OR BIOLOGICAL FEATURES OF CRITICAL HABITAT FOR THE RABBITSFOOT MUSSEL

In describing the required habitat types, the proposed critical habitat descriptions provide that:

“Although little is known of the specific habitat requirements for the Neosho Mucket and the Rabbitsfoot Mussel it can be determined that they require flowing water, geomorphically stable river channels and banks with suitable substrate, adequate food, the presence and abundance of fish hosts, adequate water and sediment quality, and few or no competitive or predaceous invasive (nonnative) species” (page 3 of Draft Environmental Assessment).

Comment: If little is known about the specific habitat requirements for these species, critical habitat designations may be too broad. There is simply not enough information to make an accurate critical habitat designation.

Preferred hosts of the Rabbitsfoot Mussel based on Yeager and Neves (1986) and Fobian (2007) are *Cyprinella galacturus*, *Cyprinella venustus*, *Cyprinella spilopterus*, and *Hybopsis amblops*.

Comment: As illustrated in the *Fishes of Arkansas* (Robinson and Buchanan, 1988) species distribution of these fish species is predominately relegated to the northern portion of the state. While populations of the Rabbitsfoot Mussel exist in the Saline, Ouachita, and Little Rivers, it seems most appropriate to designate critical habitat in areas where successful host species and the Rabbitsfoot Mussel coexist in the northern portions of Arkansas.

Several of the proposed critical habitats are located within the influence of hypolimnetic (cold water) discharges from reservoirs or spring dominated flows. Vaughn and Taylor (1999) reported extinction gradients downstream of impoundments, contributing this reduction of mussels to altered flow regimes and reduced water temperatures.

Comment: The critical habitats proposed in streams that are impacted/controlled by hypolinetic or other cold water releases are not preferred habitats for the Rabbitsfoot Mussel and should be removed for the proposed critical habitat units.

Additionally, Butler (2005) often used the condition of patchy distribution of individual populations as a reason to characterize the status as declining. This apparent patchy distribution does occur and is routinely reported in survey results, often demonstrated as collections of the Rabbitsfoot Mussel in clustered sites and excluded from long reaches within the proposed CHU. The “patchy distribution” reflects the natural selection by the Rabbitsfoot Mussel to selectively occupy habitats that allow “rabbitsfoot to remain in the same general location throughout their entire lives. These patches of stable habitat may be highly important for the rabbitsfoot since it is typically does not burrow, making it more susceptible to displacement into unsuitable habitat” (77FR63472). Therefore, the patchy distribution is not an indication of population status but actually a function of habitat selection by the Rabbitsfoot. The Rabbitsfoot mussel has been described by as a “habitat specialist”, roughly translated to mean that the Rabbitsfoot prefers a very special habitat type and is not generally distributed throughout the streams it inhabits.

Lastly, Butler (2005), and the public notice of proposed critical habitat relied extensively and quoted frequently **personal opinions** in the assessment of current population conditions which were not and cannot be substantiated.

5.0 CRITICAL HABITAT UNITS (CHU) PROPOSED FOR ARKANSAS (LISTED FROM LONGEST TO SHORTEST)

The Rabbitsfoot Mussel is fairly widespread in Arkansas streams. Several “robust” populations are found throughout Arkansas: the White River, Black River, Spring River, Ouachita River, Saline River, and Little River. According to Harris et al. (2009), there are large populations in the Spring and Black Rivers.

The proposed modifications seek to reduce the total critical habitat less to approximately 1/3 of the 800river miles that proposed. After review of the basis for the proposed designation of the 12 CHU, comments are provided to modify six of the 12 proposed CHU including:

- Saline River Proposed CHU RF5, from 179.2 river miles (RM)to approx.50 rm,
- Ouachita River Proposed CHU RF4b from 98.1 rm to approximately 15 rm.,
- Black River Proposed CHU RFb from 57.2 rm to approximately 25rm,
- Spring River Proposed CHU RF10 from 39 rm to approximately 20rm,
- Ouachita River Proposed CHU RF4a delete the total CHU of 13.6 rm, and
- SF Spring River Proposed CHU RF11 delete the total CHU,10.2 rm.

There are no comments or recommended changes to the other 6 CHU.

The following section provides highlights of each proposed modification the the CHU. The summary provides percent ownership of riparian habitats, an overview of the stated basis for the designation as proposed critical habitat, and comments justifying proposed modifications to the individual CHU,

5.1 Saline River Proposed CHU RF5 Reach Length - 179.2 River Miles

- 92 percent of riparian areas privately owned;

Comment: Critical habitat should be reduced to account for the area where populations identified with supporting documentation, Propose a reduction of the Saline River critical habitat unit modified from 179.2 river miles to approximately 50 river miles, where populations actually exist

5.2 Ouachita River Lower Reach - Proposed CHU RF4b - Reach Length 98.1 River Miles

- 100 % of riparian habitat privately owned;

COMMENT: The hypolimnetic (cold water) releases from the 3 mainstem Ouachita River reservoirs, (that is reinforced by releases from Caddo River impoundment entering Ouachita River at Arkadelphia) limits the development of the Rabbitsfoot Mussel and does not represent critical habitat for the Rabbitsfoot Mussel. Therefore the critical habitat of this reach should be modified to include the Ouachita River where populations of the Rabbitsfoot Mussel have been quantified.

5.3 Black River - Proposed CHU RF9 - 57.2 River Miles

- 86 % of riparian habitat privately owned;

Comment: Documentation of existing populations in the Black River but not downstream of Black Rock, therefore the CHU should be modified to include the Black River from Pocahontas downstream to Black Rock

5.4 Spring River - Proposed CHU RF10 - 39 River Miles

- Riparian Habitat 100% privately owned;
- Rabbitsfoot routinely documented in Spring River downstream of Ravenden, AR. but not upstream of that point; and
- Water temperatures of Spring River controlled by spring fed source (reduced temperature adversely impacts reproduction/development of warm water mussel species). Water temperatures and flow conditions not supportive of species upstream of Ravenden, AR.

Comment: Due to decreased water temperatures resulting for the spring fed source and 2007 survey that identified upstream extent of populations, the CHU for the Spring River should be modified

5.5 Ouachita River - Upper Reach - Proposed CHU RF4a - 13.6 River Miles

- Riparian Habitat approximately 82% privately owned;
- AGF mussel database indicated three listed collections from 1988 (one relic shell and 3 live mussels) nothing before or after;
- No other documented occurrence;
- 13.6 river mile CHU not essential for the conservation of the species, and not confirmed as present at listing;

Comment: CHU should be eliminated based on lack of documentation, limited population, not documented at time of listing, and isolation by main stem reservoirs

5.6 South Fork Spring River - Proposed CHU RF11 - 10.2 River Miles

- 2002 initial documentation dead and relics only, no live mussels;
- 2003 intensive survey failed to document presence (Marten, et.al, 2009);
- Single live specimen identified just upstream AR Hwy 289 (Harris, 2007 et.al); and;
- Small watershed and limited reach size (10.2 river miles) and lack of documented population prevents this CHU from meeting the “essential for conservation of the species” requirement for being adopted as a CHU.

Comment: The CHU RF11 should be eliminated from further consideration.

6.0 CONSIDERED BUT NOT PROPOSED AS CRITICAL HABITAT FOR RABBITSFOOT MUSSEL

The following waterbodies were evaluated as potential critical habitats for the Rabbitsfoot Mussel, however they were not included in the previous proposed action for various reasons,

- 1 Illinois River
- 2 Current River
- 3 Cassatot River
- 4 Little Missouri River
- 5 War Eagle Creek

It is likely that some or all of these waterbodies will be proposed as critical habitat in the new public slated for release in the near future. The addition of these stream segments will only increase the “footprint” of the watersheds impacted by the proposed CH designation.

Also, the addition of “newly” discovered viable populations should call into the ultimate question related to the necessity of listing at all.

7.0 NEOSHO MUCKET

The Neosho Mucket is estimated to be extirpated from approximately 62 percent of historical range with only 9 of 16 historical populations remaining, and only one of those listed as the remaining large viable population.

Comment: No proposal to modify the proposed CHU.

8.0 FACTORS NOT Considered in the INCREMENTAL cost analyses

The following actions were not considered in the “cost analyses” but are true cost associated with the proposed action.

8.1 Cost to small business.

There are several dischargers into the proposed CHU that are regulated through the National Pollutant Discharge Elimination System (NPDES) permit system as administered by ADEQ. As provided in there are 29 direct discharges and 91 indirect dischargers into the proposed CHU. As a result of the designation of the CHU, these discharge permits will be subjected to an increased level of regulation, including potential need for formal and/or informal consultation with the Service to determine the potential for effects on the listed species and the critical habitats.

Comment: While the draft economic assessment (DEA) takes into account potential costs to small businesses for consulting and permitting purposes, the proposed critical habitat designation does not take into account the full cost of project delays due to permit issues and modifications or the cost for implementing conservation measures determined necessary by the Service.

8.2 Blueprint for Litigation.

The designation of the critical habitat over large reaches of stream segments provides a road map or a blueprint for those individuals and/or groups looking to profit from the government regulation. Theses CHU designations will result in litigation against private landowners and businesses for lawsuits claiming a “take” of the protected regardless whether there is basis for the claim or not. GBMc experienced this first hand in assisting an individual to defend his actions in a tributary of the South fork of the Little Red River, designated as habitat for the Yellowcheek darter.