



**FRESHWATER MOLLUSK CONSERVATION SOCIETY**  
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April 29, 2016

U.S. Army Corps of Engineers, Mobile District  
Birmingham Field Office  
218 Summit Parkway, Suite 222  
Homewood, AL 35209

U.S. Fish & Wildlife Service  
Alabama Ecological Services Field Office  
1208 B Main Street  
Daphne, AL 36526-4419

Dear Colleagues,

The Freshwater Mollusk Conservation Society (FMCS) is dedicated to the conservation of, and advocacy for freshwater mollusks, North America's most imperiled animals. FMCS is an international professional scientific society made up of state, federal, academic, and private scientists and conservationists, many of whom work directly with the more than 200 endangered and threatened freshwater mollusks found worldwide. Our members are considered experts in the conservation and recovery of freshwater mollusks.

We are concerned that additional permitted surface coal mining in Alabama's Locust Fork Drainage will contribute to degraded water and habitat quality conditions. The Locust Fork is critical habitat for numerous federally-protected mollusks including one species, the Plicate Rocksnail, which only occurs in the Locust Fork. The operation and permitting of surface coal mining in this watershed has contributed to dramatic declines in the abundance and distribution of numerous imperiled mussels and snails. We are concerned that expanded operations at the Black Creek Mine and other surface coal mines will cumulatively exacerbate ongoing declines in endangered mollusk species, jeopardizing their continued existence.

Surveys by numerous state and federal agency biologists document substantial declines in the abundance and distribution of fish and mollusk populations across the Black Warrior Drainage. Much of the drainage's most unique species are extirpated due, in part, to impoundments and extensive surface coal mining. Until recently, the Locust Fork supported one of the few moderately intact mollusk communities remaining in the Black Warrior Drainage. However, during the past two decades, populations of many now-rare mollusks have undergone dramatic declines in Locust Fork.

Mollusk declines in the Locust Fork mirror trends documented across the central and southern Appalachian coal fields. In the Clinch and Powell rivers in Virginia and Tennessee, numerous headwater and mainstem mussel species have experienced population declines or local extirpations correlated with surface coal mining and ongoing mining and coal-washing operations threaten the persistence of several rare aquatic species. In the Big South Fork Cumberland River, a National Wild and Scenic River, ridge-top coal mining in the headwaters has dramatically increased dissolved ions and habitat degradation in many tributaries. Data suggest changes to tributary water quality including conductivity, dissolved sulfates, and pH are likely driving ongoing declines of numerous mussels and fishes endemic to the Cumberland Plateau region.

Mining related stream impacts are long-lasting and these 'legacy' effects persist for decades or longer in impacted streams. Substrates in many Black Warrior Drainage streams already exhibit telltale accumulations of coal fines (produced by both mining and on-site coal washing operations) in depositional zones, similar to other mining-impacted Appalachian streams. Smaller coal particles accumulate in stream substrates, may release toxic metals into interstitial and stream water, can inhibit growth of juvenile mussels, and cause pathological tissue changes in mussels (Wang et al., 2013; Henley et al., 2015). Additional studies have determined that very low coal mining extents and specific conductance increases above 500  $\mu\text{S}/\text{cm}$  cause measurable changes in stream biota (Pond et al., 2008; Petty et al., 2010; Daniel et al., 2014)

The membership of the Freshwater Mollusk Conservation Society respectfully supports the decision to vacate the Black Creek mine permit and applaud efforts to protect the water quality and unique biotic resources of Locust Fork. This river is a key natural and cultural resource in Central Alabama and supports a unique suite of imperiled aquatic species, including several that are found nowhere else on Earth.

Sincerely,



W. Gregory Cope, Ph.D.  
Past President  
Freshwater Mollusk Conservation Society

c: Black Warrior Riverkeeper

## References:

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