

Final Designation of Critical Habitat for Five Endangered Mussels and Two Threatened Mussels in Four Northeast Gulf of Mexico Drainages

What are these seven mussels?

The seven mussels described in this rule are the endangered fat threeridge, shinyrayed pocketbook, Gulf moccasinshell, Ochlockonee moccasinshell, and oval pigtoe, and the threatened Chipola slabshell and purple bankclimber. They are all bivalve mollusks (clams) that live embedded in the bottom of flowing rivers and streams, except during their larval life stage (called a glochidia), when they attach briefly as parasites to the gills or fins of a host fish. The adults are filter feeders that siphon water into their shells and across four gills that are specialized for respiration and food collection. The juveniles typically burrow completely into the stream bed and eat food particles embedded in the substrate. The adult and juvenile life stages are relatively immobile, and so hitching a ride on a fish during the larval life stage is how they disperse in a stream.

What is critical habitat?

Critical habitat is a term defined in the Endangered Species Act (ESA). It refers to specific geographic areas that are essential for the conservation of a threatened or endangered species and that may require special management consideration or protection. These areas are generally, but not necessarily, occupied by the species at the time of designation. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. It does not grant government or public access to private lands. Federal agencies must consult with the Service on activities they undertake, fund, or permit that may affect critical habitat. The ESA prohibits unauthorized take of listed species and requires consultation for activities that may affect them, including habitat alterations, regardless of whether critical habitat has been designated.

Why is the Service designating critical habitat now?

In March 2004, the Center for Biological Diversity (Center) filed a complaint in federal court alleging that the Service's critical habitat determination in 1998 was

arbitrary and not in accordance with the ESA. Several court rulings issued since its 1998 listing rule for the seven mussels have addressed the standards for determining whether it is prudent to designate critical habitat. In light of these rulings, the Service entered into a Settlement with the Center in August 2004, in which the Service's 1998 determination was revisited.

The Service's settlement with the Center stipulates that it shall submit a final critical habitat designation on or before May 30, 2007. An extension was granted that required the Service to submit a final rule on or before October 31, 2007.

Does the designation of critical habitat relate to the ongoing drought?

Though coincidental, the two events are not related. The court settlement requiring designation of critical habitat occurred in 2004, well ahead of the current drought. This designation does not alter how we work with the Corps of Engineers on drought issues. The ESA prohibits unauthorized take of listed species and requires consultation for federal activities that may affect them, including habitat alterations, regardless of whether critical habitat has been designated.

How will this designation affect the citizens of Georgia, Florida, or Alabama?

The critical habitat designation informs the public of habitat that is essential to the conservation of the listed mussels.



Apalachicola River Bluffs by USFWS

Conservation that is beneficial to mussels and their critical habitat also is beneficial to those who depend on and/or desire healthy rivers and creeks. Additionally, because federal agencies are required to consider the impacts of their actions on designated critical habitat, the designation indirectly affects non-federal activities where those non-federal activities require federal funds, licenses or permits.

How will this designation affect the Service's consultation with the Corps of Engineers on their management of the ACF Basin reservoirs?

With designation of critical habitat, the ongoing consultation and future consultations regarding the seven mussels will require assessment of potential impacts to critical habitat. However, these consultations were already required because of the presence of mussels in the rivers and creeks that have been designated. The proposed critical habitat was considered in the



September 2006 Service's biological opinion on the Corps of Engineers interim operations plan. The opinion concluded that following the interim operating plan would not adversely modify critical habitat.

Will the critical habitat designation mean that more water must be released from Lake Lanier?

No, this designation does not mean more water must be released. Releases from Lake Lanier serve a number of downstream purposes and also protect mussels. Mussels live exclusively in the river and creek bottoms and need permanently flowing water; therefore, water conditions needed to conserve their critical habitat are the same as the water conditions already needed to conserve individual mussels.



Apalachicola Swift Slough by USFWS

What are the results of the economic analysis?

Economic analyses for critical habitat are quite often misunderstood because they ascribe costs to activities that may or may not happen and do not estimate monetary benefits. Actual costs of designating critical habitat are referred to as an incremental cost. In the case of the critical habitat designation for these mussels, the cost has been estimated to be \$501,000 (discounted at three percent) over 20 years. These incremental impacts are the additional administrative effort in considering adverse modification of critical habitat in section 7 consultation. All other impacts are baseline impacts, meaning those activities would occur regardless of a designation of critical habitat.

The Economic Analysis also provides information on possible costs of managing water in ways that may benefit mussels and other users in the basin. These are termed coextensive costs. The benefits of the designation are based on biological factors and not monetary factors. The Service recognizes that in addition to the coextensive costs there are many monetary benefits of water (municipal and industrial use, power production, waste assimilation, recreation, irrigation, commercial fishing, etc). The monetary benefits that are achieved coextensively with mussel conservation have not been estimated. Nevertheless, these analyses can provide information regarding activities associated with listed species conservation. The coextensive costs associated with water management and

use affecting the seven freshwater mussels are estimated to range from approximately \$62.3 million to \$101.0 million over the next 20 years (not adjusted for inflation).

Why does the economic analysis include projected reservoir levels for operating the ACF River basin if critical habitat designation does

not impact the Corps of Engineers operating plans?

The lengthy discussion about the Corps' Interim Operation Plan is included in the economic analysis because at the time of the draft rule the Service had been instructed to consider the costs of all water management activities (both quantity and quality) that might be important to mussel conservation. Protection of threatened or endangered species including mussels is one of the multiple purposes the Corps must address during ACF system operation. When assigning costs, the analysis does not attempt to distinguish between respective user needs, nor does the analysis consider potential monetary benefits to the users.

Where do these mussels live?

The range of the seven mussels includes portions of four river basins of the northeast Gulf of Mexico in Alabama, Florida, and Georgia: Econfina Creek, Apalachicola-Chattahoochee-Flint (ACF), Ochlockonee, and Suwannee. Of these four basins, the ACF is the largest, and the only one that extends beyond the Coastal Plain into the Piedmont of Georgia and Alabama. Two or more of the seven mussels occur in each of the four basins, except the Suwannee, in which only the oval pigtoe is currently found. Because reservoirs are unsuitable as habitat for these mussels, and the dams which impound them are barriers to the movement of their host fishes, their range within two of the basins (ACF and Ochlockonee) is divided into two or more sub-basins that likely represent separate interbreeding populations. The Service estimates that the five species listed as endangered are each extirpated from over half of their historical range, and the two threatened species are extirpated from about one third of theirs (USFWS 2003).

Why are they endangered or threatened?

The range and abundance of these seven mussels has seriously declined due to changes in their river and stream habitats resulting from dams, dredging, mining, channelization, pollution, sedimentation, and water withdrawals. The 300 species of freshwater mussels in North America, including these seven species, are probably the most imperiled group of animals on the continent. About 12 percent of them have gone extinct in the last 100 years, including three species from the region where these seven mussels live, and another 70 species are protected as endangered or threatened under the Federal Endangered Species Act (ESA) of 1973. The Service listed these seven mussels under the ESA in 1998.

Why didn't the Service designate critical habitat when it listed these mussels in 1998?

When the Service listed the seven mussels, it determined that designating critical habitat for them was not prudent. The Service believed it would not benefit the mussels beyond the protection afforded by listing them under the ESA, and could even harm them by publishing maps that shell collectors or vandals might use for illegal purposes.

What is destruction or adverse modification of critical habitat?

“Destruction or adverse modification of designated critical habitat” is defined in our regulations as a “direct or indirect alteration that appreciably diminishes the value of the critical habitat for both the survival and recovery of a listed species” (50 CFR 402.02). Such alterations include, but are not limited to, adverse changes to the physical or biological features that were the basis for determining the habitat to be critical. Two federal courts in two separate critical habitat cases have ruled that this definition is invalid. In response to these rulings, the Service is currently reviewing the definition, but has not yet proposed any revision to the regulations. Until new regulations are adopted, we must rely upon the ESA statute itself and the court decisions to determine if an action would alter or affect the proposed critical habitat in the action area to the extent that it would appreciably diminish the habitat’s capability to provide the intended conservation role for these mussels in the wild.

How did the Service determine which areas to designate as critical habitat?

The Service identified the physical and biological habitat features that each life stage (adult, juvenile, glochidia) must have for normal behavior, growth, and survival, and what each species needs for normal reproductive success and dispersal rates. The Service calls these essential habitat features *primary constituent elements* (PCEs). The PCEs for the seven mussels are:

- A geomorphically stable stream channel (a channel that maintains its lateral dimensions, longitudinal profile, and spatial pattern over time without an aggrading or degrading bed elevation);
- A predominantly sand, gravel, and/or cobble stream substrate with low to moderate amounts of silt and clay;
- Permanently flowing water;
- Water quality (including temperature, turbidity, dissolved oxygen, and chemical constituents) that meets or exceeds the current aquatic life criteria established under the Clean Water Act (33 U.S.C. 1251-1387); and
- Fish hosts (such as largemouth bass, sailfin shiner, brown darter) that support the larval life stages of the seven mussels.

These mussels have become relatively rare, but where they occur, the Service finds at least one or more of these PCE’s. The Service has drawn the boundaries of the critical habitat “units” to include all of the locations where these species presently occur. A unit is an occupied stream or a group of occupied streams in which host fish may move unimpeded by dams or other passage barriers. The lateral boundaries of a unit are the ordinary high water marks on the banks of the stream channel. The Service has drawn the upstream and downstream boundaries of a unit at the probable limits of the mussels’ range in the streams included in the unit or at barriers to fish passage, such as a dam. Streams for which it does not have recent evidence of one or more of the seven mussels occurrence are not included in the critical habitat units.

Are all areas within the critical habitat boundaries considered critical habitat?

When delineating critical habitat boundaries, the Service makes every effort to avoid proposing the designation of developed areas and other areas that lack the PCEs or are otherwise not essential for the conservation of the species. The critical habitat for the seven mussels consists entirely of perennial stream channels between the ordinary high water marks. Development within the unit boundaries is almost entirely limited to bridges. Bridges do not necessarily make the habitat unsuitable for the seven mussels, which are sometimes found under or near bridges. However, any areas that lack the PCEs that it has have inadvertently left inside the critical habitat boundaries are not considered part of the unit.

Can areas be excluded from a critical habitat designation?

Yes. The ESA allows for exclusions, provided that the benefits of the exclusion outweigh the benefits of inclusion, and that the exclusion will not result in the extinction of the species. Exclusions are possible for public and private lands that have secure, long-term conservation plans in place that benefit the mussels, and for economic reasons. No areas were excluded in the final critical habitat rule.

Will the critical habitat designation delay federal decisions on permits or funding?

Under the ESA, the Service has specific time frames in which to complete the consultation process with federal agencies. These time frames remain the

same with or without designated critical habitat. The Service is not designating any areas that are not presently occupied by one or more of the seven mussels; therefore, it already reviews the direct and indirect effects of federal actions on the seven mussels and will continue to do so. Critical habitat designation does not create a separate process and timelines do not change.

What is the purpose of an economic analysis?

The ESA requires the Service to consider potential economic impacts of a critical habitat designation when determining whether or not to designate critical habitat. If the benefits of excluding an area outweigh the benefits of including it, the Service may exclude an area from critical habitat, unless the exclusion would result in the extinction of the species.

Why did the Service decide to use the incremental approach in the final economic analysis?

Economic analyses typically measure impacts against a baseline, which is normally described as the way the world would look without the proposed action. This is often referred to as the “incremental” approach. In 2001, the U.S. Tenth Circuit Court of Appeals found that the incremental approach provided “meaningless” results and instructed the Service to conduct a full analysis of all of the economic impacts of proposed critical habitat, regardless of whether those impacts are attributable coextensively to other causes (*New Mexico Cattle Growers Assn v. U.S.F.W.S.*, 248 F.3d 1277 (10th Cir. 2001)). However, since that decision, courts in several other cases have held or implied that an incremental analysis is proper (*see Cape Hatteras Access Preservation Alliance v. Department of Interior*, 344 F. Supp. 2d 108 (D.D.C.); *CBD v. BLM*, 422 F. Supp. 2d 1115 (N.D. Cal. 2006)).

Accordingly, the Service has reevaluated the baseline used for critical habitat economic analyses. The economic analysis uses a traditional regulatory analysis approach and examines the economic impact of the regulatory change being considered. However, because there is interest by the courts and the public in seeing the total costs of regulation, including costs already occurring by virtue of the species being listed or any other measures in place that benefit mussel conservation as well

as other users (drinking water quality, power production, waste assimilation), the analyses quantify the existing regulatory baseline.

Who is responsible for making the changes to water management and use addressed in the economic analysis?

The analysis does not make assumptions or recommendations regarding whether such changes will be made or how such changes in water use and management could occur. The analysis describes a set of scenarios that might occur, and projects a cost for them that are independent of each other. In practice, some combination of changes in water use may be needed to meet the needs of the public and protect the threatened and endangered mussels.

Was there an opportunity to submit comments?

The Service had two public comment periods. We provided extensive public notification of the proposed critical habitat designation and notice of the availability of the draft economic analysis (notice in the *Federal Register*, public notices and news releases to 12 newspapers, and notification on local television and radio stations). County, State and Federal elected officials were also notified. This notification process was completed twice – on June 6, 2006, to solicit comments on the proposed rule, and again on June 21, 2007, to solicit comments on the revised proposed rule and the draft economic analysis. Combined, the comment period was open for 108 days. There were two requests for a public hearing in the Columbus, Georgia, area.

Were public meetings held?

Yes, the Service held three public hearings. Public informational sessions started at 5 pm and ended at 6:30 pm. Formal hearings started at 6:30 pm and ended at 8:30 pm at the following addresses on the dates indicated below:

- July 9, 2007, Elizabeth Bradley Turner Center, Auditorium, Columbus State University, 4225 University Avenue, Columbus, GA 31807.
- July 10, 2007, Academic Auditorium, Room 150, Albany State University, 504 College Drive, Albany, GA 31705.
- July 11, 2007, Economic and Workforce Development, Building 38, Tallahassee Community College, 444 Appleyard Drive, Tallahassee, FL 32304.

Who can I contact for more information regarding critical habitat designated for the seven mussels?

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