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Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Alabama Sturgeon (Scaphirhynchus suttkusi); Final Rule

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

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[FWS–R4–ES–2008–0058; 92210–1117–0000–FY08–B4]

RIN 1018–AV51

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Alabama Sturgeon (Scaphirhynchus suttkusi)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), designate critical habitat for the Alabama sturgeon (*Scaphirhynchus suttkusi*) under the Endangered Species Act of 1973, as amended (Act). In total, approximately 524 kilometers (326 miles) of river fall within the boundaries of the critical habitat designation. The critical habitat includes portions of the Alabama and Cahaba Rivers in Autauga, Baldwin, Bibb, Clarke, Dallas, Lowndes, Monroe, Perry, and Wilcox Counties, in Alabama.

DATES: This rule becomes effective on July 2, 2009.

ADDRESSES: This final rule and the associated final economic analysis are available on the Internet at *http://www.regulations.gov.* Supporting documentation we used in preparing this final rule is available for public inspection, by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Alabama Ecological Services Field Office, 1208–B Main Street, Daphne, AL 36526; telephone 251/441–5858; facsimile 251/441–6222.

FOR FURTHER INFORMATION CONTACT: Jeff Powell, Aquatic Species Biologist, U.S. Fish and Wildlife Service, Alabama Ecological Services Field Office, 1208–B Main Street, Daphne, AL 36526; telephone 251/441–5858; facsimile 251/441–6222. If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800/877–8339.

SUPPLEMENTARY INFORMATION:

Background

In this final rule, we intend to discuss only those topics directly relevant to the distribution of the Alabama sturgeon and the designation of its critical habitat. For more information on the species, refer to the final and proposed listing rules published in the **Federal Register** on May 5, 2000 (65 FR 26438), and on March 26, 1999 (64 FR 14676), respectively.

Sturgeon is the common name used for large, bony-plated, primitive fishes in the family Acipenseridae which typically grow slowly and mature late in life. The Alabama sturgeon (*Scaphirhynchus suttkusi*) is the smallest of all the North American sturgeons, typically weighing only 1 to 2 kilograms (2 to 4 pounds) at maturity. The head is broad and flattened shovel-like at the snout, with a tubular and protrusive mouth. As with all sturgeon species, there are four barbels (whisker-like appendages) located on the bottom of the snout in front of the mouth that are used to locate prey. Bony plates called scutes line the body in five rows, one on the back and two each on the middle and lower sides. Bony plates separated by sutures also cover the head. The body narrows abruptly to the rear-forming a narrow stalk between the body and tail. The upper lobe of the tail fin is elongated and ends in a long filament. Coloration of the upper body is light tan to golden yellow, with a creamy white belly. Sturgeon are long-lived fishes. Although the life span of the Alabama sturgeon in the wild is unknown, Burke and Ramsey (1985) provided estimates on three individuals that ranged from 2 to 10 years of age.

The Alabama sturgeon is endemic to rivers of the Mobile River Basin below the Fall Line (inland boundary of the Coastal Plain) (Mettee *et al.* 1996, p. 83; Boschung and Mayden 2004, p. 109). Its current range includes the Alabama River from R.F. Henry Lock and Dam downstream to the confluence of the Tombigbee River. The species is also known to survive in the Cahaba River. For information on range of the species, see the *Criteria Used To Identify Critical Habitat* section of this rule.

Despite extensive and intensive efforts in the decade prior to its listing, only eight Alabama sturgeon were captured, or reported captured and released. These fish were collected from several locations in the Alabama River between Millers Ferry Lock and Dam and its confluence with the Tombigbee River (Rider and Hartfield 2007, p. 490). Since the 2000 publication of the final rule listing the species under the Act, two Alabama sturgeon have been captured or reported captured. One of these was captured, videotaped, and released by a fisherman in the lower Cahaba River in July 2000 shortly after publication of the final rule. The most recent capture was an individual collected from the Alabama River below Claiborne Lock and Dam on April 3, 2007, by the Alabama Department of Conservation and Natural Resources (ADCNR). This fish was implanted with a sonic tag and released on April 17, 2007, at the location where it was captured.

Flows in the Alabama River are heavily influenced by upstream releases from Alabama Power Company and U.S. Army Corps of Engineers (USACE) hydropower projects, and riverine habitats are fragmented by Claiborne and Millers Ferry Locks and Dams. This 386-kilometer (240-mile) stretch of the Alabama River, along with the lower Cahaba River, represents the last remaining viable habitat for the sturgeon.

Previous Federal Actions

On May 5, 2000, we listed the Alabama sturgeon as endangered under the Act (65 FR 26438). In that final listing rule, we determined that designation of critical habitat was prudent but that critical habitat was not determinable, due to the lack of information on the sturgeon's biological and habitat needs.

Following our listing decision, the Alabama-Tombigbee Rivers Coalition (Coalition) brought suit in the United States District Court for the Northern District of Alabama under the citizen-suit provision of the Act and the judicial review provisions of the Administrative Procedure Act (5 U.S.C. 551 *et seq.*), alleging several defects in the listing process. The District Court dismissed the Coalition's lawsuit for lack of standing, but on appeal, the U.S. Court of Appeals for the Eleventh Circuit reversed the District Court's decision, concluding that the Coalition did have standing to challenge the listing decision. On remand, the District Court granted the United States' motion for summary judgment but ordered us to issue both a proposed and a final rule designating critical habitat by May 14, 2006, and November 14, 2006, respectively. *Alabama-Tombigbee Rivers Coalition et al.* v. *Norton et al.,* No. CV–01–0194–VEH (Final Order, Nov. 14, 2005). The Coalition appealed and the District Court stayed the judgment pending review by the Eleventh Circuit. Under the direction of the District Court, we would have 2 years from the time of the Eleventh Circuit's decision to complete the designation of critical habitat.

On February 8, 2007, the Eleventh Circuit affirmed the decision of the District Court, finding among other things that vacating the listing decision was not the proper remedy for failure to designate critical habitat. *Alabama-Tombigbee Rivers Coalition et al.* v. *Kempthorne et al.,* 477 F.3d 1250 (11th

Cir. 2007). On May 16, 2007, the Eleventh Circuit issued its judgment as a mandate, thus lifting the stay imposed by the District Court and requiring us to issue a prudency determination and, if prudent, a proposed rule designating critical habitat within 1 year (May 16, 2008), and a final rule designating critical habitat within 1 year after that (May 16, 2009). The Coalition sought Supreme Court review of the Eleventh Circuit's decision; that request was denied on January 7, 2008. *See Alabama-Tombigbee Rivers Coalition et al.* v. *Kempthorne et al.,* 128 S. Ct. 877 (2008).

We published the proposed designation of critical habitat for the Alabama sturgeon in the **Federal Register** on May 27, 2008 (73 FR 30361). That proposal had a 60-day comment period, ending July 28, 2008. On December 30, 2008, we announced the opening of a public comment period and the scheduling of a public hearing on the proposed revised designation of critical habitat for the Alabama sturgeon (73 FR 79770). We also announced the availability for public comment of a draft Economic Analysis (DEA) and an amended required determinations section of the proposal. In addition, we sought comment on our proposal to change the first primary constituent element (PCE) from its original description because we had determined that the original wording failed to indicate that the flow needs of the species are relative to the season of the year. The comment period was opened for 30 days from December 30, 2008, to January 29, 2008. We then published a notice on January 28, 2009 (FR 74 4912), extending the comment period to allow all interested parties an additional opportunity to comment after the public hearing that was also held on January 28, 2009. This comment period closed on February 9, 2009.

For more information on previous Federal actions or for more information on the endangered Alabama sturgeon or its habitat, refer to our proposed and final listing rules published in the **Federal Register** on March 26, 1999 (64 FR 14676), and on May 5, 2000 (65 FR 26438), respectively, or request copies of them from the Alabama Ecological Services Field Office (*see* **FOR FURTHER INFORMATION CONTACT**). We are designating critical habitat in accordance with section 4(b)(2) of the Act.

Summary of Comments and Recommendations

We requested written comments from the public on the proposed designation of critical habitat for the Alabama sturgeon during two comment periods. The first comment period associated with the publication of the proposed rule (73 FR 30361) opened on May 27, 2008, and closed on July 28, 2008. We also requested comments on the proposed critical habitat designation and associated draft economic analysis during a comment period that opened December 30, 2008, was extended on January 28, 2009, and closed on February 9, 2009. We received two requests for a public hearing. We held a public hearing on January 28, 2009. We also contacted appropriate Federal, State, and local agencies; scientific organizations; and other interested parties and invited them to comment on the proposed rule and draft economic analysis during these comment periods.

During the first comment period, we received 12 comment letters directly addressing the proposed critical habitat designation. During the second comment period, we received 22 comment letters addressing the proposed critical habitat designation or the draft economic analysis. During the January 28, 2009, public hearing, 11 individuals or organizations made comments on the designation. All substantive information provided during comment periods has either been incorporated directly into this final determination or addressed below. Comments received were grouped into four general issues specifically relating to the proposed critical habitat designation for Alabama sturgeon and are addressed in the following summary and incorporated into the final rule as appropriate.

Peer Review

In accordance with our policy published on July 1, 1994 (59 FR 34270), we solicited expert opinions from three knowledgeable individuals with scientific expertise that includes familiarity with the species, the geographic region in which the species occurs, and conservation biology principles. We received responses from all three of the peer reviewers.

We reviewed all comments received from the peer reviewers for substantive issues and new information regarding critical habitat for the Alabama sturgeon. The peer reviewers generally concurred with our methods and conclusions and provided additional information, clarifications, and suggestions to improve the final critical habitat rule. Some reviewers suggested minor editorial changes. These have been incorporated into the final rule as appropriate. Specific peer reviewer comments are addressed in the following summary and are also incorporated into the final rule as appropriate.

(1) *Comment:* One reviewer mentioned that in the rule we state the life span of the Alabama sturgeon is unknown, yet we then estimate individuals could live from 12 to 15 years, possibly longer.

Our Response: Although the life span of the Alabama sturgeon in the wild is unknown, Burke and Ramsey (1985) provided estimates on three individuals that ranged from 2 years to 10 years of age. In general, all sturgeon species are long-lived species, some may live longer than 15 years.

(2) *Comment:* The reviewer understands that the critical habitat proposal must be based on the known range of the species at the time it was listed as ''endangered'', but suggests that it might be prudent to expand the section to match the species historical range.

Our Response: According to section 3 of the Act, critical habitat includes those areas that are occupied at the time of listing that contain the physical and biological features necessary for the conservation of the species. Areas not occupied at the time of listing can be included only if it is determined that they are essential to conservation of the species and that including only areas occupied at the time of listing in critical habitat may not be adequate to conserve the species. Based on our best available information (collection records and supporting PCEs), we have determined that such unoccupied areas are not essential to the conservation of the species.

(3) *Comment:* Would habitat descriptions from recent collections of larval and juvenile pallid and shovelnose sturgeon in the Mississippi River be of use in trying to define the preferred habitats of larval and juvenile Alabama sturgeon in the Alabama River?

Our Response: Yes. We considered all recently published information on these topics in the rule.

(4) *Comment:* One reviewer suggests that there has been a gradual decline in the Alabama River discharge recently. They referenced the continued lowering of an industry's intake pipes to account for the river's decreasing stage.

Our Response: This is likely the result of the drought over the last two years, or, an increase in upstream withdrawals. We recommend referring the issue of lowered industry intake pipes to the Alabama Office of Water Resources.

(5) *Comment:* One reviewer noted that the sonic-tagged Alabama sturgeon was

released on April 17, 2007, not May 2007.

Our Response: We appreciate the correction. We have corrected this in the final rule.

(6) *Comment:* One reviewer stated that they received a credible report from an angler that caught an Alabama sturgeon below R.F. Henry Lock and Dam on April 11, 2008.

Our Response: This report was considered in the rule.

(7) *Comment:* One reviewer stressed the importance of river connectivity. The reviewer then stated the primary reason the species is endangered is habitat fragmentation caused by large dams on the Alabama River, and that fish bypass or fish passage opportunities should be explored further.

Our Response: Habitat fragmentation was one of the primary reasons for listing the species, and we will continue to work with our partners to address fish passage in the Alabama River.

(8) *Comment:* One reviewer suggests that higher flows from R.F. Henry could potentially attract Alabama sturgeon, especially in the winter and spring when the species migrates upstream.

Our Response: The comment is noted and we will continue to work with our partners to explore this possibility.

(9) *Comment:* One reviewer agrees that the pallid and shovelnose sturgeons are acceptable surrogates for the Alabama sturgeon; the reviewer also suggests that sturgeon in the genera *Pseudoscaphirhynchus* and *Acipenser* also have similar life histories that could be applied to the Alabama sturgeon. This includes information on temperature and dissolved oxygen preferences, migration patterns, reproduction, age and growth, habitat preferences, and diet.

Our Response: In the proposed rule, we stated that we would utilize information on the Alabama sturgeon's closest two relatives, the pallid and shovelnose sturgeon. However, there are still considerable data gaps that could be filled by other sturgeon species. In this final rule, we use information resulting from research on other sturgeon species in the background sections where appropriate.

(10) *Comment:* One reviewer suggests that ''the distance of free-flowing habitat currently available is likely detrimental to the Alabama sturgeon, that is, there is likely NOT enough free-flowing habitat for larval development in the reservoirs above Claiborne and Millers Ferry locks and dams. The designation of critical habitat as outlined in the proposed rule and the revised proposed rule is necessary to protect the last remaining habitat for the Alabama sturgeon, but improvements in riverine habitat MUST be made in the Alabama River for migrating adults and drifting larvae if the species is to survive and eventually recover.''

Our Response: While we designated areas meeting the definition of critical habitat, the area designated is essentially the best remaining habitat available for the species. We recognize the need to continue to improve conditions related to the distance of free-flowing habitat within designated critical habitat and elsewhere in the rivers (*i.e.,* fish passage) and continue to work with our partners to do so.

(11) *Comment:* One reviewer suggests that we spend more time discussing the potentially lethal effects of low dissolved oxygen levels. He states that levels of 3 milligrams per liter (mg/L) (3 parts per million (ppm)) and water temperatures of 22–26° Celsius (C) (72–79° Fahrenheit (F)) appeared to be lethal for juvenile Atlantic and shortnose sturgeons. Allowing a minimum level of 4 mg/L (4 ppm) in the Alabama River may be very close to a lethal level for the Alabama sturgeon.

Our Response: We have used the best available science to determine the water quality needs of the Alabama sturgeon. We have reviewed the information in the proposed rule and determined that clarification of the fifth PCE was required to more clearly state that situations involving dissolved oxygen of less than 5 mg/L (5 ppm) would not be the norm within the river. We have clarified the fifth PCE to state, ''dissolved oxygen levels shall not be less than 5 mg/L (5 ppm); except under extreme conditions due to natural cause or downstream of existing hydroelectric impoundments, where it can range from 5 mg/L to 4 mg/L (5 ppm to 4 ppm), provided that the water quality is favorable in all other parameters.''

Comments From States

Section 4(i) of the Act states, ''the Secretary shall submit to the State agency a written justification for his failure to adopt regulations consistent with the agency's comments or petition.'' Comments received from the State regarding the proposal to designate critical habitat for the Alabama sturgeon are addressed below.

During the first comment period, we received comments from both the States of Georgia and Alabama disagreeing with the inclusion of 131.4 cubic meters per second (cms) (4,640 cubic feet per second (cfs)). Following the revision, both States agreed with the first PCE as it appears in the final rule.

(12) *Comment:* The State of Georgia recommends that the Service engage in a NEPA analysis in order to fully address the impact of this rule.

Our Response: It is our position that, outside the jurisdiction of the United States Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses as defined by NEPA (42 U.S.C. 4321 *et seq.*) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This assertion was upheld by the United States Court of Appeals for the Ninth Circuit (*Douglas County* v. *Babbitt,* 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

(13) *Comment:* The State of Georgia requested that the lateral extent of the proposed critical habitat should be clarified, and identification of activities that may cause stages in the Alabama and Cahaba Rivers to decline below the ''ordinary high water mark.''

Our Response: For the purpose of this rule, we have applied the definition for ''ordinary high water mark'' found at 33 CFR 329.11 as ''the line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas.'' It is our position that the ''ordinary high water mark'' does not imply that consultation is required every time the river stage falls below that point. As stated in the ''*Application of the ''Adverse Modification'' Standard*'' section, activities that cause declines in flow, resulting in a decline in river stage, will be evaluated on a case by case basis. Activities that may cause stages to decline include, but are not limited to, drought conditions and excessive water withdrawals.

(14) *Comment:* The State of Alabama noted that they are committed to continuing to work with the Service, USACE, and other agencies to develop a drought operations plan (Alabama Drought Operations Procedure—ADROP) for the Alabama River.

Our Response: We appreciate the proactive steps Alabama has taken to begin development of a drought operations plan for the Alabama River. We believe this is an important step to ensuring all stakeholders fully understand the minimum flow requirements that may be imposed during future drought events.

(15) *Comment:* The Alabama Governor's Office stated that any flow

requirement for the designated critical habitat needs to be flexible enough to realistically deal with drought conditions.

Our Response: We appreciate the Office of the Governor's concern with this matter. We will continue to work with all stakeholders and regulatory agencies to the best of our ability to ensure that this will happen. We also will continue working with the State, Industry, and the USACE to finalize a drought operations plan for the Alabama-Coosa-Tallapoosa (ACT) Basin that has an Adaptive Management Approach.

Public Comments

(16) *Comment:* One commenter questioned why is it going to take a year to complete the designation.

Our Response: On May 16, 2007, the Eleventh Circuit issued its judgment as a mandate, requiring the Service to issue a prudency determination and, if prudent, a proposed rule designating critical habitat within one year (May 16, 2008), and a final rule designating critical habitat within one year after that (May 16, 2009). *Alabama-Tombigbee Rivers Coalition et al.* v. *Kempthorne et al.*, 477 F.3d 1250 (11th Cir. 2007). We needed all of the time allowed by the court to review the best scientific information about the species, allow for public participation in the process, conduct an economic analysis, reviewed comments, and coordinate with stakeholders on the designation.

(17) *Comment:* One commenter clearly voiced his objection to this designation, stating that it is, ''a waste of time for good people, blowing taxpayers' money and unacceptable Federal interference with citizen activity and economic growth.''

Our Response: This action was court-ordered and non-discretionary. On May 16, 2007, the Eleventh Circuit issued its judgment as a mandate, requiring the Service to issue a prudency determination and, if prudent, a proposed rule designating critical habitat within one year (May 16, 2008), and a final rule designating critical habitat within one year after that (May 16, 2009). *Alabama-Tombigbee Rivers Coalition et al.* v. *Kempthorne et al.*, 477 F.3d 1250 (11th Cir. 2007).

(18) *Comment:* One commenter states that, ''the damage to the Alabama River and the Alabama Sturgeon were done without intention, to disregard further damage to Alabama ecosystems would be an ignorant disregard for current environmental science. The building of Claiborne Lock and Dam, and the subsequent disruption of the Alabama River ecosystem, has had negligible economic benefit in Alabama, but protection of the remaining wild places we have will have positive effects for tourism and environmental quality.''

Our Response: Comment noted.

(19) *Comment:* The Birmingham Audubon Society fully supports the designation and also states that the economic impact of this designation is not likely to be a serious burden.

Our Response: Comment noted.

(20) *Comment:* One commenter stated the USACE's locks and dams on the Alabama River are not meeting their intended purpose (approximately 3 boats per month use the locks) and are a waste of Federal dollars. The commenter then states ''why not allow these poor counties where this waterway goes through—give them the one to two million dollars it takes to maintain these locks. Let them put that into economic development commissions for the counties and let them decide how to develop their own economy.''

Our Response: Comment noted.

(21) *Comment:* One commenter recommended that the Service engage in a NEPA analysis in order to fully address the impact of this rule.

Our Response: See response under Comment (14).

(22) *Comment:* The Cahaba River Society (CRS) fully supports the designation. They recommend extending the designation an additional 25 kilometers (km) (16 miles (mi)) of the Cahaba River; upstream to the Cahaba National Wildlife Refuge, as well as the Alabama River above R.F. Henry Lock and Dam, up the Coosa River to Jordan Dam, and up the Tallapoosa River to Thurlow Dam.

The CRS believes that this and other critical habitat designations will be a powerful tool for improving understanding among developers, builders, and land-use decision-makers about the importance of natural flow regimes, morphology and stability of river channels, the value of free-flowing habitat, and the significance of water chemistry to maintain a healthy river fauna that otherwise will not be confronted. The CRS goes on to state that, ''in the long run, the educational value of designating critical habitat is among the most important of the benefits attained.''

Our Response: Based on the best available scientific information, we have concluded at this time that the lower Coosa and Tallapoosa Rivers were not occupied at the time of listing. The last Alabama sturgeon records we have from these rivers are prior to the impoundments on the Alabama River. The current upper boundary on the Cahaba River was based on the general location of the ''fall line'' and has been used as such for other species (*e.g.*, in the critical habitat for three threatened mussels and eight endangered mussels in the Mobile River Basin (69 FR 40083)). If information becomes available that sturgeon were utilizing these stretches at the time of listing, or that this area is essential to the conservation of the sturgeon, this rule could then be revised based on the new information.

(23) *Comment:* One commenter stated that ''given the absence of the species in large areas of the proposed critical habitat we recommend additional clarification is provided that clearly states how such areas are essential for the conservation of the species.''

Our Response: We agree that certain areas might not appear to be occupied some of the time; however, sturgeons are not stationary species. It is not uncommon for some species to migrate up to 578 km (359 mi) to spawn, and then drift another 240 km (149 mi) as larvae develop (DeLoney *et al.* 2007; Hrabik *et al.* 2007). We believe the entire unit, as designated, was occupied at the time of listing and contains one or more PCEs throughout the unit. Therefore, the areas designated meet the definition of occupied critical habitat as set forth in the Act.

(24) *Comment:* Two commenters believe the Service lacks the information to support that Alabama sturgeon could occupy the Cahaba River and impounded areas above Claiborne, Millers Ferry, and R.F. Henry lock and dams.

Our Response: In July 2000, an Alabama sturgeon was collected near the mouth of the Cahaba River, and we have reliable information that an individual was collected and released in April 2008 by an angler immediately below R.F. Henry Dam. Additionally, based on our best available knowledge of other sturgeon species, these individuals will move considerable distances from the points at which they were collected. Although we do not have recent records from the Claiborne pool, it contains one or more PCEs and is contiguous with occupied habitats upstream and downstream; we conclude it was used by the species in its movements up and down the river at the time of listing.

(25) *Comment:* One commenter believes our approach to identifying the physical and biological requirements of the Alabama sturgeon is ''flawed'' because we state that we use information on the pallid and shovelnose sturgeon.

Our Response: The Alabama sturgeon is an extremely rare species and little information is available about its physical and biological requirements. Therefore, as required by the Act, we used the best available information which was generated mainly through the studies of two of its closest relatives, the pallid and shovelnose sturgeon. Considerable information has been recently published about the pallid and shovelnose (cited in the proposed rule), and that information was used as a basis for many of the assumptions made for the physical and biological requirements. We believe that this is the best scientific data available as required by the Act.

(26) *Comment:* One commenter questioned our use of ''stable'' in PCE Number 2. They also question the association of mussel beds with stable substrates.

Our Response: For the purpose of this analysis, stable refers to consolidated bed materials that contain substrate materials that are somewhat embedded and not easily moved. The presence of mussel beds in these areas is simply used to illustrate that these areas have not likely been disturbed in the recent past.

(27) *Comment:* One commenter did not understand how the fourth PCE could apply to impounded areas of the Alabama River, because of the presence of Claiborne, Millers Ferry, and R.F. Henry Locks and Dams.

Our Response: We are not implying that the impounded areas contain the fourth PCE. Presence of all PCEs is not required for designation. We believe the entire unit, as designated, was occupied at the time of listing and contains one or more PCEs throughout the unit. Therefore, the areas designated meet the definition of occupied critical habitat as set forth in the Act.

(28) *Comment:* One commenter recommended the Service exclude all existing Federally-maintained channels, marinas, boat ramps, public swimming areas and docking facilities within the specified reach, existing within-bank dredged material disposal areas, and Federal reservoirs, locks and dams, because of the importance of navigation and recreation on the Alabama River and hydropower generation by Federal power plants.

Our Response: As was stated in the proposed rule (73 FR 30373), critical habitat does not include manmade structures (such as buildings, aqueducts, docks, dams, runways, roads, and other paved areas) and the land or waterway on which they are located within the legal boundaries of this rule. However, this language does not include waterways (*i.e.,* Federal reservoirs), public swimming areas, and existing within-bank dredging material disposal areas that are owned by the State of Alabama, found to be occupied at the time of listing, and to contain one or more PCEs needed by the Alabama sturgeon; which is why these areas have been included within the designation.

(29) *Comment:* One commenter was unclear how or when section 7 consultation would be required.

Our Response: As stated in the final rule, section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that actions they fund, authorize, or carry out are not likely to destroy or adversely modify critical habitat. Decisions by the Fifth and Ninth Circuit Courts of Appeals have invalidated our definition of ''destruction or adverse modification'' (50 CFR 402.02) (*see Gifford Pinchot Task Force* v. *U.S. Fish and Wildlife Service,* 378 F.3d 1059 (9th Cir. 2004) and *Sierra Club* v. *U.S. Fish and Wildlife Service et al.*, 245 F.3d 434, 442 (5th Cir. 2001)), and we do not rely on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat. Under the provisions of the Act, we determine destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would remain functional (or retain those PCEs that relate to the ability of the area to periodically support the species) to serve its intended conservation role for the species. Please refer to the *Section 7 Consultation* section of the rule below for further discussion.

Comments About Flow and Water Management

The majority of the comments during the initial comment period (ending July 27, 2008) were specific to the first PCE, especially the 131.4 cms (4,640 cfs) flow requirements. As stated in the revised rule (73 FR 79772), we removed the 131.4 cms (4,640 cfs) from the first PCE because we believed focusing on 131.4 cms (4,640 cfs) failed to account for the complexity of variables that needs to be analyzed to determine effects to the sturgeon.

(30) *Comment:* We received a total of eight written comments during the initial comment period (ending July 28, 2008) that addressed flow and the value included in the first PCE (131.4 cms (4,640 cfs)). All comments, in various ways, specifically questioned the biological relevance of the 131.4 cms (4,640 cfs) flow.

Our Response: We have historically and consistently maintained that a 7-day average minimum flow of 131.4 cms (4,640 cfs) in the Alabama River at Montgomery is ''adequate to sustain the Alabama sturgeon during periods of drought.'' Proposals to allow flows to go below that level are likely to continue to occur during drought conditions (but could be proposed at other times) and we would recommend Federal agencies enter into consultation on such proposals whenever they occur because adverse effects are possible. We agree that the flow was not created as a ''sturgeon'' flow, but rather a ''navigation'' flow. The origin of the 131.4 cms (4,640 cfs) can be traced back to a 1972 letter from Alabama Power Company (APC) to the USACE where APC concurs that a 7-day average flow of 131.4 cms (4,640 cfs) is acceptable for a trial period. It goes on to state that the 131.4 cms (4,640 cfs) is based on the 7Q10 for the USGS Gage at Montgomery.

We revised the proposed rule in order to better clarify our position on the 131.4 cms (4,640 cfs) flow. The revision changed the first PCE to the following:

> A flow regime (*i.e.*, the magnitude, frequency, duration, seasonality of discharge over time) necessary to maintain all life stages of the species in the riverine environment, including migration, breeding site selection, resting, larval development, and protection of cool water refuges (*i.e.*, tributaries).

We changed the first PCE from its original description, because we determined that the original wording failed to indicate that the flow needs of the species are relative to the season of the year. For example, sturgeon likely need a higher flow in the spring to successfully spawn than was indicated by the 131.4 cms (4,640 cfs) in the original PCE. Also, we determined that it was more descriptive and helpful to potential action agencies to describe the flow habitat needs of the species in relation to their seasonality and how those seasonal flows allow for maintenance of all life stages. Lastly, we determined that while we believe flows lower than 131.4 cms (4,640 cfs) may involve adverse affects to the species (and therefore we will continue to recommend consultation), depending upon other factors, lower flows may or may not be found to result in measurable adverse effects. Therefore, focusing on 131.4 cms (4,640 cfs) in the PCE fails to account for the complexity of variables that need to be analyzed to determine effects to the sturgeon. We will continue to use 131.4 cms (4,640 cfs) as a trigger for section 7

consultation, but not necessarily a threshold for adverse modification.

(31) *Comment:* One commenter indicated the Service has not demonstrated why additional requirements or regulatory PCEs (for flows) are necessary for water quality.

Our Response: It was not our intent to designate additional flow requirements in order to ensure State water quality compliance. As stated by the commenter with this question, it is the responsibility of the Alabama Department of Environmental Management (ADEM) to ensure Clean Water Act compliance through the issuance and enforcement of National Pollution Discharge Elimination System (NPDES) permits.

(32) *Comment:* APC noted that they are committed to continuing to work with the Service, USACE, and other agencies to develop a drought operations plan (Alabama Drought Operations Procedure—ADROP) for the Alabama River.

Our Response: We appreciate the proactive steps APC has taken to begin development of a drought operations plan for the Alabama River (*i.e.*, ADROP). We believe this is an important step to ensuring all stakeholders fully understand the minimum flow requirements that may be imposed during future drought events.

(33) *Comment:* APC presented summaries of the data (discharge, temperature, and dissolved oxygen levels) they collected on August 5, 2008, and October 21, 2008, at various locations on the Alabama River downstream of Claiborne Lock and Dam. One of these locations was a USACE dredge site that has been dredged the last two years and has been routinely occupied by the tagged Alabama sturgeon. They concluded that temperature and dissolved oxygen levels were fairly well mixed at these locations and further suggested that the tagged fish may not be adversely affected by dredging.

Our Response: We appreciate APC's efforts to analyze flow, temperature, and dissolved oxygen levels in these areas. This information will be very useful as we analyze habitats that have been occupied by the tagged fish. However, upstream of Claiborne Lock and Dam conditions are likely quite different and will likely yield very different results. Upstream of the dams (Claiborne and Miller Ferry) conditions very much like a reservoir and are not as well mixed as areas downstream of Claiborne Lock and Dam, which receives a constant flow from the crested spillway. Therefore it would not be a fair comparison to correlate these results with upstream areas that do not receive a constant flow.

(34) *Comment:* The USACE believes the Memorandum of Agreement (MOA), which includes the 1994 ''White Paper'', has served to protect the Alabama sturgeon and its habitat. They believe that the MOA should be referenced in the rule, acknowledging its protective value. They believe it should continue to be adhered to in absence of newer biological information.

Our Response: The 1994 ''White Paper'' is referenced in several locations in the rule and we will continue to use it. However, we will also modify it as needed and make future decisions based on the best available science.

(35) *Comment:* Although the USACE agrees with the proposed changes to the first PCE, they state that, ''if data exist to support the designation of a flow regime, then a detailed flow regime should be fully described in the PCE with references to supporting studies.'' They go on to say, ''without a fully described flow regime, the PCE remains flawed, providing uncertain protection to the species as well as uncertain economic impacts.''

Our Response: We do not believe a specific flow measurement would be applicable at all times of the year and we do not have the data to support a fully described flow regime. Our position continues to support a variety of natural, seasonably variable flows that allow for maintenance for all life stages of the sturgeon. In order to develop a seasonably variable set of flow estimates for the species, we need long-term stream gauging records and a continuous water quality monitoring network at several points on the Alabama River. At this time, there are a limited number of long term discharge records for the Alabama River. The station with the longest period of record (67 years) is the USGS station at Montgomery (station ID 0242000). We welcome the opportunity to partner with the USACE to begin developing a long term discharge and water values study.

(36) *Comment:* The APC had several comments about flow requirements and the analysis they conducted on the data from the tagged Alabama sturgeon below Claiborne Lock and Dam, these include:

(a) ''The relationship of flow to the specimen's needs is inconclusive'' and there is ''no basis to identify any one ideal flow for the Alabama sturgeon.''

(b) ''The specimen's behavior is not consistent with the second PCE.'' Also, the behavior of the tagged fish does not indicate a preference for deep pools habitats.

(c) ''There is a significant correlation between the tracked specimen's location and historic dredging sites.''

Our Response: (a) We agree that identifying one ideal flow is extremely difficult and may not, in the long run, be the most beneficial recommendation for the sturgeon. As stated in clarification letter to Industrial Economics (IEc) on October 22, 2008, we believe that flow needs for the species are relative to the season of year. We removed the 131.4 cms (4,640 cfs) from the first PCE to reflect this need for flow seasonality.

(b) Our statement in the rule indicated that the Alabama sturgeon ''prefers'' a river channel with stable sand and gravel river bottoms, and bedrock walls, including associated mussel beds. This doesn't mean that they always occur in these habitats. The conclusions drawn by APC are based upon data taken from one fish. Based on the best available scientific information on other North American sturgeon species, sturgeons do prefer these optimal conditions.

(c) While we appreciate the effort of APC to summarize and share their assessments of the tracking data, we do not completely agree that dredging creates favorable conditions for the sturgeon. The tagged sturgeon below Claiborne Lock and Dam is likely occupying this section of the river because of temperature (flow from Sizemore Creek) or food resources. We do agree with APC's hypothesis that adult sturgeon can exist under a variety of conditions, and focusing on spawning season and the particular needs of eggs and larvae may ultimately have a greater effect on long term survival than measures that focus on adult specimens. We welcome the opportunity to work with APC to explore these ideas.

Comments About the Science Used in This Designation

(37) *Comment:* The Alabama-Tombigbee Rivers Coalition (ATRC) urges the Service to acknowledge the serious limitations in its scientific knowledge of the Alabama sturgeon and its life cycle requirements. They maintain virtually nothing is known about where it breeds, spawns, and what they do after hatching.

Our Response: We certainly recognize that our knowledge base is limited with the Alabama sturgeon. However, that is why we have elected to use the best available scientific information on two of its closest relatives, the pallid and shovelnose sturgeon.

(38) *Comment:* One commenter, representing the ATRC, agrees that the

Service ''was justified by selecting the shovelnose and pallid species as surrogates to extrapolate the biological and physical information for the Alabama sturgeon.'' However, the commenter also suggests that there is little to no useful, documented information available to validate the information we used in the development of the PCEs. Specifically, the commenter questioned the lack of information related to the effects of river flow on spawning, spawning behavior, migration and aggregation at spawning sites, or egg deposition; substrate preferences; growth rates; and diet of the *Scaphirhynchus* species.

Our Response: We respectfully disagree with the commenter's belief about a lack of useful information on the shovelnose and pallid sturgeon. In 2007, the *Journal of Applied Ichthyology* published an entire volume dedicated to the biology and conservation of the three North American riverine sturgeons (Volume 23 Issue 4, Pages 289–538 (August 2007)). Within this one volume there are 30 papers devoted exclusively to describing embryonic development, genetic variability, larvae distribution and dispersal, habitat use of during different flow patterns, gonadal development, evaluating spawning site success, age and growth, distribution and movements, and diet composition of larval and adult sturgeons of the North American river sturgeons. Although we recognize that there are still considerable data gaps in our knowledge of these rare fishes, especially in terms of life history requirements, we believe it is fair to assume two characteristics that all North American sturgeon species (*Acipenser* and *Scaphirhynchus*) have in common; that they spawn over hard substrates in swift water and that they all migrate upstream to spawn. The Act requires us to use the best available scientific information available and we have done this throughout the rule and especially in the development of the PCEs.

(39) *Comment:* One commenter, representing the ATRC, commented that, ''high spring flows may not be essential to stimulation of sturgeon spawning runs.''

Our Response: Although there are differing opinions on which environmental cues are most important in stimulating sturgeon spawning movement, available literature generally agree on one factor; that all North American sturgeon spawn, or at least attempt to make spawning runs in the spring. In the Southeastern United States, this just happens to coincide with the wettest season and an extended photoperiod; therefore, we believe successful spawning cues are likely some combination of the above environmental factors, including high spring flows.

(40) *Comment:* One commenter, representing the ATRC, commented that Alabama sturgeon use similar movements as shovelnose and pallid sturgeon, including low flow areas. The commenter also stated that, ''low flow seems to be of little concern to the Alabama sturgeon, pallid sturgeon or shovelnose sturgeon.''

Our Response: We agree. The fish we have been tracking does occupy low flow areas at certain times. We do not, however, have information to suggest that this is a desired or preferred condition at other times of the year. In addition, we know that higher flows are required during specific times of the year to initiate spawning migrations and to allow larvae to develop.

(41) *Comment:* One commenter, representing the ATRC, made the following statement, ''the Endangered Species Act requires that critical habitat designation must be based on the best scientific and commercial data available.'' The commenter continued by stating the Service had failed in this regard by not referencing several publications.

Our Response: We respectfully disagree that we failed to use the appropriate references. The literature cited list is available from the Alabama Ecological Services Field Office (*See* **ADDRESSES**) and represents the best scientific data available relevant to the Alabama sturgeon and this designation of critical habitat.

(42) *Comment:* One commenter, representing the ATRC, describes in detail the chronology of the sonic-tagged Alabama sturgeon's movements and patterns from April 2007 through October 2008.

Our Response: We appreciate this summary of the movements of one fish, and have used it in the context of the rest of the best available information on the life history and biology of sturgeons.

Comments About Navigation and Dredging

(43) *Comment:* One commenter, representing the ATRC, stated that dredging could actually benefit the Alabama sturgeon in several ways. One of the examples used by the commenter is that dredging may actually create habitat by increasing water velocity in pool-like areas, thus increasing oxygen levels, cleaning the river bottom of silt and rotting leaves, and having a flushing effect on the river.

Our Response: We recognize that some sturgeon species have proven to be adaptive animals, especially in the Mississippi River, but we do not believe the evidence supports that dredging will actually increase available habitat, thereby increasing the recovery potential of the Alabama sturgeon.

(44) *Comment:* The ATRC urges the Service to avoid significant changes to current channel maintenance practices in the absence of specific, new information which provides a valid scientific basis to understand how and why it is necessary for conservation purposes.

Our Response: We review the operations and maintenance dredging procedures on the Alabama River every five years and we believe the information in the ''1994 White Paper'' is correct until new information provides a valid basis to changing our findings on channel maintenance and other issues. We will continue to use the best available science in making decisions about this and other trust resources.

Comments Related to the Economic Analysis

(45) *Comment:* Several commenters believe that the economic analysis dramatically understates the true potential for adverse economic impacts, some believe by a factor of as much as 100. Several of these commenters state that when there are uncertainties about the nature and breadth of regulatory impacts, the only way to identify the potential economic impact is to assume the worst-case scenario and determine economic impacts under those circumstances. Specifically, Troy University submitted an analysis that the rule has ''the potential to destroy approximately $900 million in local output and over $1.6 billion in the overall U.S. economy.''

Our Response: The commenters assume that a minimum water flow and a cessation of dredging activities in the Alabama River will result from critical habitat designation. They further assume that ongoing economic activities within the ACT Basin, such as navigation, hydropower operations, and industry production that relies on water transport (such as pulp and paper), will be curtailed following critical habitat designation. These eventualities appear improbable given the history of conservation efforts undertaken for the sturgeon to date, and the Service's current expectation for future actions. Nonetheless, Section 3 of the final economic analysis (FEA) recognizes that should the Service, in the course of future consultations on river flows in

extreme drought years, determine that higher flows are necessary to maintain suitable habitat conditions for sturgeon conservation, a variety of activities including commercial shipping, recreation, or hydropower may be impacted. In addition, a text box has been added to the economic analysis that describes the analysis submitted by the commenter.

(46) *Comment:* One commenter states that the benefits of critical habitat designation outweigh the risks to the sturgeon caused by the designation by an enormous margin. The commenter adds that potential benefits include the value to medical research of having a fish that has survived since the Jurassic Period, a fully restored commercial fishery, and an attraction for historical and nature-based tourism (which is important for poor communities' improvement).

Our Response: As described in Section 1 of the FEA, because the Service believes that the direct benefits of the critical habitat rule are best expressed in biological terms, the analysis does not quantify or monetize benefits. However, a qualitative discussion of the potential categories of benefits of sturgeon conservation and critical habitat designation is provided in Section 7 of the FEA.

(47) *Comment:* One commenter states that justification for not using input-output modeling is unsatisfactory because the use of input-output analysis is an accepted tool utilized extensively by Federal agencies.

Our Response: As described in Section 1 of the FEA, regional economic impact analysis (commonly using regional input/output models) can provide an assessment of the potential localized economic impacts of conservation efforts. Specifically, regional economic impact analysis produces a quantitative estimate of the potential magnitude of the initial change in the regional economy resulting from a regulatory action. These models rely on multipliers that represent the relationship between a change in one sector of the economy (*e.g.*, expenditures by recreators) and the effect of that change on economic output, income, or employment in other local industries (*e.g.*, suppliers of goods and services to recreators). These economic data provide a quantitative estimate of the magnitude of shifts of jobs, revenues, and taxes in the local economy. However, for this analysis, quantified impacts associated with sturgeon conservation efforts primarily result in additional costs incurred due to short term shutdowns of dredging operations to avoid the sturgeon. Remaining quantified impacts to economic activities dependent upon water management (*e.g.*, navigation or hydropower), water quality permitting (*e.g.*, pulp and paper mills), and other activities are made up entirely of administrative costs of section 7 consultations. Thus, measurable impacts of the type typically assessed with input-output models are not quantified in this analysis, and thus regional input-out modeling is not used. As stated above, Section 3 of the FEA recognizes that should the Service, in the course of future consultations on river flows in extreme drought years, determine that higher flows are necessary to maintain suitable habitat conditions for sturgeon conservation, a variety of activities including commercial shipping, recreation, or hydropower may be impacted. These impacts may in turn generate regional economic effects.

(48) *Comment:* One commenter states that the DEA primarily gives consideration to agency costs as measured in staff time for engagement, but ignores third party costs.

Our Response: The FEA explicitly considers potential impacts to all impacted parties, whether they are Federal agencies, local governments, or private parties. Exhibit 1–2 of the FEA presents the administrative cost estimates broken down into Service, Federal Agency, and third party costs. Section 3 of the FEA discusses potential impacts that could occur related to recreators, homeowners, and the navigation industry, among others, should additional river flows be required for the sturgeon. Section 4 of the FEA discuss potential impacts on NPDES permitees, such as the pulp and paper industry, to the extent that Alabama sturgeon encourages out-of-compliance NPDES-permitted facilities to come into compliance sooner than would already have occurred absent the sturgeon.

(49) *Comment:* One commenter states that IEc has found less than one percent of species (out of 113 endangered species analyses) actually would harm the economic environment (which was the Port of Los Angeles).

Our Response: The economic analyses of critical habitat developed by the Service, including those developed by the Service's economics consultants, are not intended to present a determination of economic harm. Instead, these analyses are intended to provide objective information on potential economic and other costs of designation, which the Secretary can then use in addressing the requirements of section 4(b)(2) of the Act. The commenter did not present any support for the conclusion that only one percent of the studies performed have found ''harm'' to the economic environment. However, the Service notes that the reports produced by IEc and other economics consultants have addressed a wide-range of potential economic changes, both regional and national in scope, potentially resulting from designation of critical habitat.

(50) *Comment:* One commenter states that the DEA may not meet recommended OMB standards because it does not consider regional growth rates or market conditions associated with potentially impacted industries.

Our Response: The U.S. Office of Management and Budget's (OMB) guidelines for conducting economic analysis of regulations direct Federal agencies to measure the costs of a regulatory action against a baseline, which it defines as the ''best assessment of the way the world would look absent the proposed action'' (U.S. Office of Management and Budget, ''Circular A–4,'' September 17, 2003, available at *http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf.*). In other words, the baseline includes the existing regulatory and socio-economic burden imposed on landowners, managers, or other resource users potentially affected by the listing of the species. Impacts that are incremental to that baseline (*i.e.*, occurring over and above existing constraints) are attributable to the proposed regulation, in this case the designation of critical habitat. As recommended by OMB, the baseline incorporates, as appropriate, trends in market conditions, implementation of other regulations and policies by the Service and other government entities, and trends in other factors that have the potential to affect economic costs and benefits, such as the rate of regional economic growth in potentially affected industries. In this analysis, the anticipated impacts are primarily administrative, with some impacts associated with temporary dredging shutdowns. The analysis discusses the way in which these impacts relate to the existing baseline conditions.

(51) *Comment:* One commenter states that there will be little or no new economic development if the critical habitat is accepted as proposed.

Our Response: The commenter presents no evidence to support this statement.

(52) *Comment:* One commenter states that the counties surrounding the proposed critical habitat are economically depressed, disproportionately African-American, and in need of every possible strategic

advantage to attract new jobs. Designation would therefore violate the Council of Environmental Justice's definition of environmental justice, in addition to imposing permanent economic impacts from which the region will never be able to recover.

Our Response: Section 2 of the FEA presents demographic statistics on the potentially affected region. The critical habitat region does exhibit higher than average unemployment and poverty rates, and has higher minority populations than areas outside the region. Note that, as in Comment 45, the commenter assumes that ongoing economic activities within the ACT Basin, such as navigation, hydropower operations, and industry production that relies on water transport (such as pulp and paper), will be curtailed following critical habitat designation. These eventualities appear improbable given the history of conservation efforts undertaken for the sturgeon to date, and the Service's current expectation for future actions. All quantified incremental impacts of critical habitat designation are administrative impacts of section 7 consultation, and would not be expected to disproportionately affect socio-economically disadvantaged groups.

(53) *Comment:* One commenter states that the DEA fails to consider certain major impacts on the USACE's channel maintenance activities, limits on industrial wastewater discharges, and limits on land use activities such as agriculture and silviculture.

Our Response: The FEA considers impacts to maintenance dredging, industrial wastewater discharge, agriculture, and silviculture in Sections 4 and 5.

(54) *Comment:* One commenter states that additional flow requirements could have large economic impacts associated with navigation and hydropower generation throughout the basin. Associated potential impacts would depend on the magnitude of the requirement, timing, and prevailing drought-water budget interactions.

Our Response: We agree. *See* Comment 45.

(55) *Comment:* Several comments relate to barge traffic within the river. One commenter states that access to reliable water transportation provides a competitive advantage for the recruitment of new industry for this region and cannot be ignored. Another states that the use of barge transport for receiving fuel oil at their dock at the 69th river mile saves them approximately $1 million each year in transportation costs. While another states that the DEA seriously underestimates the value of barge transportation to the region of the State, which is in a socio-economically disadvantaged area.

Our Response: Sections 3 and 5 of the FEA discuss the water transportation industry in the Alabama River, and provide information on the value of the industry to the region based on data produced by the Coosa-Alabama River Improvement Association. However, the analysis does not anticipate large impacts on the barge transportation industry. Regarding the stated socio-economic concerns, additional demographic information has been added to the FEA in Section 2.

(56) *Comment:* One commenter states that Carters Lake and Lake Allatoona should be included in any discussions and analysis regarding the effects of upstream reservoir storage and flows in the Alabama River.

Our Response: Carters Lake and Lake Allatoona have been incorporated into the discussion of potential impacts in Section 3 of the analysis.

(57) *Comment:* One commenter states that an economic analysis on the APC FERC relicensing efforts should be conducted after consultation is complete in order to incorporate any agreed-upon minimum flow or drought plan.

Our Response: The timeframe for publication of the critical habitat rule was required by the court and precedes the completion of the relicensing process for APC. We would agree that an analysis of impacts once that process is complete could provide additional information.

(58) *Comment:* One commenter states that the DEA assumes the only additional costs to the USACE will be costs associated with consultation. The commenter adds that the USACE does incur shutdown costs without the critical habitat designation, and that within-bank disposal of dredged materials could also be affected.

Our Response: Section 5 of the FEA discusses that impacts to the USACE are anticipated to include annual compliance costs incurred by the USACE to communicate and coordinate their upcoming activities to the Service at the beginning of each dredging season, as well as costs incurred by the USACE and its contractors related to temporary dredging shutdowns on average once per year between 2009 and 2028. Because (1) the Service states in the critical habitat rule that only the dredging of consolidated materials should result in a ''may affect'' determination for sturgeon critical habitat and (2) the Service has confirmed through informal consultation with USACE every five years since 1994 that dredging of unconsolidated sediment will not adversely affect the sturgeon, the FEA finds that annual maintenance dredging of the Federal navigation channel in the Alabama River is not expected to be affected by the critical habitat rule, other than to continue to result in a five-year review of USACE dredging activities. With regard to potential impacts to within-bank disposal, Section 5.3.1 discusses that during the 2008 five-year review, the Service did request that the USACE move one disposal site from a river mouth to another location in the channel, with limited impacts on operations.

(59) *Comment:* One commenter states that the dredging shutdown costs for 2007 and 2008 ($88,800 and $44,400) appear to be industry costs, and that they should be replaced with $25,620 and $14,011 for 2007 and 2008, respectively.

Our Response: At the time of the DEA, these USACE costs were not available. These have been incorporated into Section 5 of the FEA and total estimates have been revised accordingly.

(60) *Comment:* One commenter states that it is reasonable to expect that dredging shutdowns will increase in frequency and duration as the sturgeon population recovers. In addition, the commenter states that it is also reasonable to expect that consultations will increase in frequency as the sturgeon population recovers.

Our Response: No information is available about the rate at which the sturgeon will recover or whether such recovery will overlap with areas in which dredging takes place, or if fish will be tagged, so forecasting increased dredging shutdown frequency is not possible. The Service points out that a single tagged Alabama sturgeon currently exists. Unless additional sturgeon can be found and tagged, we do not expect more dredging shutdowns in the future. As the future population of Alabama sturgeon is not known, this analysis uses the recent past as an indicator of likely future rates of shutdowns. Nonetheless, a caveat has been added to Section 5 of the FEA that describes the commenter's concern.

(61) *Comment:* One commenter states that there are economic uncertainties involved in future consultations that should be captured as additional potential impacts. For example, FWS made recommendations for additional conservation measures following the critical habitat designation for the Gulf sturgeon, including the purchase and use of hydrophones to monitor the presence of tagged Gulf sturgeon.

Our Response: The FEA acknowledges that uncertainty exists with regard to future conservation efforts likely to be undertaken for sturgeon. No specific additional recommendations have been identified that would pertain to sturgeon critical habitat.

Summary of Changes From Proposed Rule

1. We have changed the first PCE from the original description in our original proposal (73 FR 30361; and explained this change in a subsequent revised proposed rule at 73 FR 79770) because we have determined that the original wording failed to indicate that the water flow needs of the species are relative to the season of the year. Please refer to the *Primary Constituent Elements (PCEs) for the Alabama Sturgeon* section below for specific wording of the first PCE.

2. We have further clarified a portion of the fifth PCE to:

''dissolved oxygen levels not less than 5 mg/L (5 ppm), except under extreme conditions due to natural causes or downstream of existing hydroelectric impoundments, where it can range from 5 mg/L to 4 mg/L (5 ppm to 4 ppm);

3. We added a few recommendations in the ''Special Management Considerations'' section. These recommendations encourage finding alternative ways of increasing the amount of free-flowing habitat in the Alabama River that allow sturgeon and other migratory species to move freely between feeding, resting, and spawning grounds.

Critical Habitat

Background

Critical habitat is defined in section 3 of the Act as:

(i) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(I) Essential to the conservation of the species and

(II) Which may require special management considerations or protection; and

(ii) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Conservation, as defined under section 3 of the Act, means the use of all methods and procedures that are necessary to bring any endangered species or threatened species to the point at which the measures provided under the Act are no longer necessary.

Critical habitat receives protection under section 7 of the Act through the prohibition against Federal agencies carrying out, funding, or authorizing the destruction or adverse modification of critical habitat. Section 7(a)(2) of the Act requires consultation on Federal actions that may affect critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner seeks or requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) would apply, but even in the event of a destruction or adverse modification finding, the Federal action agency's and the applicant's obligation is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

To be included in a critical habitat designation, habitat within the geographical area occupied by the species at the time it was listed must contain the features that are essential to the conservation of the species, and be included only if those features may require special management consideration or protection. Critical habitat designations identify, to the extent known using the best scientific data available, habitat areas that provide essential life cycle needs of the species (*i.e.,* areas on which are found those physical and biological features essential to the conservation of the species). Under the Act and our implementing regulations, we can designate critical habitat in areas outside of the geographical area occupied by the species at the time it is listed only when we determine that those areas are essential for the conservation of the species and that designation limited to those areas occupied at the time of listing would be inadequate to ensure the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific and commercial data available. Further, our Policy on Information Standards Under the Endangered Species Act, published in the **Federal Register** on July 1, 1994 (59 FR 34271), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106–554; H.R. 5658)), and our associated Information Quality Guidelines provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information developed during the listing process for the species. Additional information sources may include the recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, or other unpublished materials and expert opinion or personal knowledge.

Habitat is often dynamic, and species may move from one area to another over time. Furthermore, we recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be required for recovery of the species.

Areas that are important to the conservation of the species, but are outside the critical habitat designation, will continue to be subject to conservation actions we implement under section 7(a)(1) of the Act. Areas that support populations are also subject to the regulatory protections afforded by the section 7(a)(2) jeopardy standard, as determined on the basis of the best available scientific information at the time of the agency action. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts if new information available at the time of these planning efforts calls for a different outcome.

Physical and Biological Features

In accordance with section 3(5)(A)(i) and 4(b)(1)(A) of the Act and regulations at 50 CFR 424.12, in determining which areas within the geographical area occupied by the species at the time of listing to designate as critical habitat, we consider the physical and biological features essential to the conservation of the species that may require special management considerations or protection. We consider the physical and biological features to be the PCEs laid out in the appropriate quantity and spatial arrangement for the conservation of the species. These include, but are not limited to:

(1) Space for individual and population growth and for normal behavior;

(2) Food, water, air, light, minerals, or other nutritional or physiological requirements;

(3) Cover or shelter;

(4) Sites for breeding, reproduction, and rearing (or development) of offspring; and

(5) Habitats that are protected from disturbance or are representative of the historical geographical and ecological distributions of a species.

We derive the specific PCEs for the Alabama sturgeon from the biological needs of this species as described in the Critical Habitat section of the proposed rule to designate critical habitat for the Alabama sturgeon published in the **Federal Register** on May 27, 2008 (73 FR 30361), along with subsequent changes we describe above in the Summary of Changes from Proposed Rule section.

Space for Individual and Population Growth and for Normal Behavior

All river sturgeons (*Scaphirhynchus* spp.) are migratory and may migrate hundreds of kilometers to spawn. Generally, sturgeons migrate to optimize feeding and reproductive success. Downstream migrations are associated with feeding and upstream migrations are usually associated with spawning (Auer 1996, p. 153; Bemis and Kynard 1997, p. 175). The newly hatched larvae of other river sturgeon are free-floating and may drift hundreds of kilometers before settling to a benthic (bottom) juvenile existence. Therefore, connectivity and availability of spawning areas and larval, juvenile, and adult feeding and growing habitats are necessary for the conservation of the species.

Based on collection records, the species is known to inhabit the main channel of large coastal plain rivers of the Mobile River Basin. Specimens have been taken over a variety of substrates, including sand, gravel, and mud, from 6 to 14 m (20 to 46 ft) deep (Williams and Clemmer 1991, p. 26). The USACE identified 30 locations in the Alabama River where 58 Alabama sturgeon were reportedly captured between 1950 and 1998, and documented channel morphology and substrate types at 12 of the capture locations during low flow conditions. Substrates associated with these capture sites included sand, gravel, and limestone outcrops. All capture locations downstream of Claiborne Lock and Dam were either on or within 300 m (984 ft) of a sandbar.

Most historical and recent sturgeon capture sites are at or near features presumably associated with feeding, reproduction, or refugia, and include rock walls, channel training devices, deep pools, mussel beds, and/or stable sand and gravel bottoms (Burke and Ramsey 1985, p. 53; Mayden and Kuhajda 1996, p. 257; Hartfield and Garner 1998, p. 4). The presence of mussel beds represents stable channel habitats with high aquatic invertebrate diversity and density that are likely important feeding areas for sturgeon; deeper holes may be used as thermal refugia during times of low flow and warmer temperatures (Hartfield and Garner 1998, p. 5).

Data collected from a radio-tagged Alabama sturgeon, released in 1985 near Millers Ferry Lock and Dam on the Alabama River and tracked for 4 months, showed that its preferred position was in swift current at a depth of 7.7 to 12.3 m (25 to 40 ft), but never at the deepest part at any location except where bottom contour was uniform (Burke and Ramsey 1985, p. 32). Irwin *et al.* (2005, p. 5) and Kynard *et al.* (2007, p. 369) documented that adult shovelnose sturgeon are more active at night. This type of behavior was also observed in juvenile shovelnose sturgeon (Kynard *et al.* 2007, p. 369), and a similar pattern is currently being observed in the Alabama sturgeon collected in 2007 that is being tracked in the lower Alabama River (ADCNR and Service unpublished data 2007, 2008). During daylight hours in the summer of 2007, this sturgeon remained in the deeper, flowing portions of the channel. However, during the late afternoon and early evening hours, the sturgeon moved into shallower habitats directly adjacent to a small perennial tributary. We have no evidence that the sturgeon moves into these tributaries; it may be taking advantage of cooler water found at the interface between the tributaries and the main stem of the river. The amount of time this tagged fish spent in these areas indicates these areas are important for feeding or for providing thermal refugia during the warmer summer months.

Food

Reports indicate that the species is an opportunistic bottom feeder (Mayden and Kuhajda 1996, p. 257; Williams and Clemmer 1991, p. 26; Burke and Ramsey 1985, p. 35). Keevin *et al.* (2007, p. 500) conducted a stomach content analysis on 12 Alabama sturgeon individuals from museum collections and found aquatic insects and fish to be the predominant food items. This finding suggests a diet quite similar to the diets of the pallid and shovelnose sturgeons described by Gerrity *et al.* (2006, p. 606) and Hoover *et al.* (2007, p. 494). Except for the absence of fish in the diet of shovelnose sturgeon, all three species tended to feed on similar items, primarily aquatic insects. The insects identified in these studies are found over a variety of substrates, including soft and hard rocky bottoms; therefore, protection of most shallow-water habitat (shoals, gravel or sand bars) is essential to maintaining an acceptable food base. A distinct difference observed by Keevin *et al.* (2007, p. 502) in the diet of the Alabama sturgeon was the presence of ceratopogonids (biting midges) and siphlonurids (mayfly family). These small, aquatic larvae are very active, strong swimmers that tend to occupy the water column or areas near the surface (Keevin *et al.* 2007, p. 502), indicating that the sturgeon may be a mid-water column feeder. Irwin *et al.* (2005, p. 39) found that juvenile shovelnose sturgeon overwhelmingly preferred feeding in sandy substrates and actively avoided gravel areas. It is unknown if this behavior is displayed by the Alabama sturgeon, but 2007 tracking data suggest that the species may rest in the deeper, fast-flowing areas during the day and feed in shallow, sandy shoal areas at night (ADCNR and Service unpublished data).

Water Quality

Generally, most species of sturgeon are not as tolerant of low oxygen levels as other fishes; however, because of their benthic lifestyles, they are more likely to encounter areas with low levels of dissolved oxygen (Secor and Gunderson 1998, p. 611). Temperature and dissolved oxygen levels can affect sturgeon survival and growth, with early life stages being more sensitive to these variables than the adult stage (Secor and Gunderson 1998, p. 604). High levels of dissolved oxygen, as well as acceptable levels of other water quality parameters, are necessary for egg maturation and hatching, and larval and juvenile

development. Poor water quality has even been linked to hermaphrodism in shovelnose and pallid sturgeon (U.S. Environmental Protection Agency (USEPA) 2007, p. 4).

There are currently more than 1,600 National Pollutant Discharge Elimination System (NPDES) permits issued within the Alabama River downstream of the Fall Line, which could impact sturgeon habitat. It is possible that some of these point-source discharges, along with other non-point sources of pollutants, could produce pollutant concentrations that may be harmful to the Alabama sturgeon. At the time of listing in May 2000, we believed that State water quality standards (which the State adopted from the national standards set by the USEPA) were protective of the Alabama sturgeon as long as discharges were within permitted limits and enforced according to the provisions of the Clean Water Act (Biggins 1994, p. 4). These water quality requirements were established with the intent to protect all aquatic resources within the State of Alabama and were presumed to be protective of the Alabama sturgeon. However, the Service is currently in consultation with the USEPA to evaluate the protectiveness of criteria approved in USEPA's water quality standards for Alabama sturgeon and other threatened and endangered species and their critical habitats as described in the Memorandum of Agreement our agencies signed in 2001 (66 FR 11201, February 22, 2001). Other factors that can potentially alter water quality are droughts and periods of low flow, non-point source runoff from adjacent land surfaces (*e.g.,* excessive amounts of nutrients, pesticides, and sediment), and random spills or unregulated discharge events. This could be particularly harmful during drought conditions when flows are depressed and pollutants are more concentrated. Therefore, adequate water quality, quantity, and flow are essential for normal behavior, growth, and viability during all life stages of the sturgeon, including embryo development and hatching, and larval and juvenile development.

Sites for Breeding, Reproduction, or Rearing (or Development) of Offspring

The Alabama sturgeon is believed to reach sexual maturity between 5 and 7 years of age. Spawning frequency of both sexes is likely influenced by food supply and fish condition, and may occur every 1 to 3 years. Similar to other river sturgeon, the Alabama sturgeon is believed to migrate upstream during the late winter and spring to spawn. These movements are likely extensive and cover long distances.

The capture of 12 individuals (including several gravid females) during a single collection trip near the mouth of the Cahaba River on March 21, 1969, suggests directional movements during the spawning season (Williams and Clemmer 1991, p. 27). Gravid females with ripe eggs have also been collected during late March, April, and early May, which may indicate a prolonged spring spawning or yearly variations in the occurrence of preferred spawning temperatures. Actual timing of spawning during this period may also vary depending on water temperature and river discharge. All sturgeon species produce eggs that are adhesive and require a current for proper development. Although specific locations at which eggs have been deposited have not been identified for the Alabama sturgeon, they are presumably similar to those of other river sturgeons, where eggs are deposited on hard bottom substrates such as bedrock, armored gravel, or channel training works in deep water areas, and possibly in some larger tributaries, such as the Cahaba River (Burke and Ramsey 1985, p. 53).

Although no information about larval development exists for the Alabama sturgeon, we assume that the Alabama sturgeon may have needs similar to those of other river sturgeons, which require highly oxygenated, long stretches of free-flowing water for development. The larvae are planktonic, drifting with river currents for 12 to 13 days after hatching, and exhibit a swim-up and drift behavior while floating in currents (Kynard *et al.* 2007, p. 365). Research indicates that pallid sturgeon larvae can drift more than 200 km (124 mi) during the first 11 days of the larval life stage, depending on water velocities, before settling to the benthic environment (Braaten and Fuller 2007, p. 1). It is unclear, at present, whether Alabama sturgeon require distances comparable to those exhibited by pallid sturgeon, but the life history strategy is thought to be the same. A further reduction in the distance of free-flowing habitat currently available would likely be detrimental to the sturgeon.

Riverine Flows and Channel Stability

Flows in the Mobile River Basin have been substantially altered from natural conditions due to the construction and operation of the large number of impoundments. Additionally, the river's temperature, biogeochemical processes that would have occurred in the absence of the dams, and pollution assimilation capabilities have also been altered. Flowing water provides a means for transporting nutrients and food items, moderating water temperatures and dissolved oxygen levels, and diluting pollutants, as well as transporting and suspending developing sturgeon embryos and larvae.

The quality of water, which comprises the sturgeon's chemical habitat, is directly related to the volume of water present in the river. It affects sturgeon behavior, growth, and viability in all life stages. We have changed the first PCE from its original description because we have determined that the original wording failed to indicate that the flow needs of the species are relative to the season of the year. For example, sturgeon likely need a higher flow in the spring to successfully spawn than the 131.4 cms (4,640 cfs) flow indicated in the original PCE. Also, we have determined that it is more descriptive and helpful to potential action agencies to describe the habitat needs of the species in relation to flow seasonality and how seasonal flows allow for maintenance of all life stages. Lastly, we have determined that while we believe flows lower than 131.4 cms (4,640 cfs) may involve adverse effects to the species (and therefore we will continue to recommend consultation), depending upon other factors, lower flows may not result in measurable adverse effects. Therefore, focusing on 131.4 cms (4,640 cfs) in the PCE fails to account for the complexity of variables that need to be analyzed to determine effects to the sturgeon.

Aquatic life, including fish, requires acceptable levels of dissolved oxygen. The type of organism and its life stage determine the level of oxygen required. Generally, among the fish, cold water species are the most sensitive, with young life forms being most critical. Dissolved oxygen levels of 3 mg/L (3 ppm) and water temperatures of 22–26 °C (72–79 °F) appeared to be lethal for juvenile Atlantic sturgeon (Secor and Gunderson 1998, p. 607). Temperature, another water quality parameter, is related to dissolved oxygen. The amount of dissolved oxygen that is present in water (the saturation level) depends upon water temperature. As the water temperature increases, the saturated dissolved oxygen level decreases. The more oxygen there is in the water, the greater the assimilative capacity (ability to consume organic wastes with minimal impact) of that water (Pitt 2000, pp. 6–7). Biochemical oxygen demand (BOD) is the oxygen that would be required to stabilize the waste after its discharge into a body of water. Wastewater discharges that have a high BOD will have a much greater

detrimental effect on stream dissolved oxygen during critical summer months than they would during colder months. Summer months also have lower stream flow rates, which worsens the problem by further reducing the water's assimilative capacity (Pitt 2000, pp. 6–7). In the worst case scenario, flows should be sufficient to meet State water quality standards, which ensure at least 4 mg/L (4 ppm) of dissolved oxygen during low-flow periods and below hydropower operations, and 5 mg/L (5 ppm) in other river reaches.

During 2007 and 2008, the Alabama River Basin experienced the worst drought ever recorded. Although this drought is currently recognized as the worst drought in modern history, some researchers believe that it may not have been that unusual (B. Erhardt, USACE Meteorologist, pers. comm. 2008). Using bald cypress (a long-lived species) growth rings as an indication, the 2007–08 hydrologic period may have actually been more normal over the last 1,000 years than conditions experienced over the last 40 years (which may have been exceptionally wet). Therefore, considering that sturgeon species have survived a range of hydrologic conditions over the years, we believe sturgeon are adapted to these periodic low-flow conditions, if poor water quality (from the Alabama River reservoirs) doesn't further exacerbate the environmental stress levels to the sturgeon. Although the sturgeon we are currently tracking survived the 2007–08 drought, we do not believe that the Alabama sturgeon is adapted to survive extended drought periods where water quality is compromised by excessive discharges that the river is unable to assimilate. More specifically, as described above, low-flow conditions affect the chemical environment occupied by the fish, and extended low-flow conditions coupled with higher pollutant levels would likely result in behavior changes within all life stages, but could be particularly detrimental to early life stages (*e.g.*, eggs, larvae, and juveniles).

Stable river bottoms also are required by the sturgeon. The presence of stable river bottoms has been associated with the recent and historical captures of sturgeon in the Alabama and Tombigbee Rivers. Hartfield and Garner (1998, p. 6) documented the presence of stable substrates located between dredge and disposal sites in the lower Alabama River. These included areas with stable sand and gravel river bottoms, and bedrock walls. The presence of mussel beds and a diverse and dense insect community provide an indication that channel bottoms are relatively stable (Hartfield and Garner 1998, p. 6). As mentioned above, the preferred diet of the sturgeon is aquatic invertebrates; therefore, the presence of mussel beds may be an important indicator of suitable sturgeon feeding habitat.

Primary Constituent Elements (PCEs) for the Alabama Sturgeon

Under the Act and its implementing regulations, we are required to identify the physical and biological features (PCEs laid out in the appropriate quantity and spatial arrangement) within the geographical area known to be occupied by the Alabama sturgeon at the time of listing that are essential to its conservation and which may require special management considerations or protections. Based on the above needs and our current knowledge of the life history, biology, and ecology of the species, we have determined that Alabama sturgeon's PCEs are:

1. A flow regime (*i.e.*, the magnitude, frequency, duration, seasonality of discharge over time) necessary to maintain all life stages of the species in the riverine environment, including migration, breeding site selection, resting, larval development, and protection of cool water refuges (*i.e.*, tributaries).
2. River channel with stable sand and gravel river bottoms, and bedrock walls, including associated mussel beds.
3. Limestone outcrops and cut limestone banks, large gravel or cobble such as that found around channel training devices, and bedrock channel walls that provide riverine spawning sites with substrates suitable for egg deposition and development.
4. Long sections of free-flowing water to allow spawning migrations and development of embryos and larvae.
5. Water temperature not exceeding 32 °C (90 °F); dissolved oxygen levels not less than 5 mg/L (5 ppm), except under extreme conditions due to natural causes or downstream of existing hydroelectric impoundments, where it can range from 5 mg/L to 4 mg/L (5 ppm to 4 ppm); and pH (a measure of acidity) within the range of 6.0 to 8.5.

Special Management Considerations or Protections

When designating critical habitat, we assess whether the specific areas within the geographical area occupied by the species at the time of listing contain the features essential to the conservation of the species that may require special management consideration or protections. It is recognized that numerous activities in and adjacent to the unit designated as critical habitat, as described in this final rule, may affect one or more of the PCEs found in that unit. These activities include, but are not limited to, those listed in the Application of the ''Adverse Modification'' Standard section as activities that may destroy or adversely modify critical habitat. We summarize here the primary threats to the physical and biological features essential to the conservation of the species.

Water quality, as discussed in the Application of the ''Adverse Modification'' Standard section, can influence all life stages of the sturgeon. Water pollution and changes in water quality can originate from either non-point or point source discharges. Non-point source pollution is ubiquitous in the Mobile Basin and can originate from a variety of land use practices (such as livestock grazing, row crop farming, silviculture, and residential development). The impacts from nearly all non-point source pollutant sources can be managed by implementing the appropriate best management practices. This may include creation and maintenance of riparian buffers, and control of soil loss and runoff from adjacent lands. Point source pollution typically originates from industrial and municipal discharges, but may include any discharge that originates from a single point. Point source pollution can be managed by ensuring that NPDES permitted discharges are within compliance at all times. This requires proper water quality monitoring and record keeping, and ensuring that enough flow is present in the river to assimilate the volume of material that is being discharged.

The Service should be consulted before actions that are Federally funded, authorized, or permitted are undertaken that may disturb areas upstream of areas known to support sturgeon, including perennial streams that may provide critical thermal refuges to the sturgeon at the interface with the main channel, especially during times when river flows are at abnormally low levels (*e.g.*, during droughts). Therefore, prior to channel-disturbing activities, these areas should be identified and precautions should be taken to ensure that the integrity of these areas is maintained. Minimizing the effects of navigational dredging and channelization (past evidence of which can be seen throughout the historical range of the sturgeon) can be accomplished by avoiding the removal of consolidated bed material and rock walls, and consulting with the Service on proper disposal areas.

Long sections of free-flowing habitat, as discussed in the fourth PCE, are necessary for spawning migrations and

development of larvae. Although we do not have specific information on the exact length necessary for the Alabama sturgeon to successfully migrate and develop, the best estimate we can make, from information on the pallid and shovelnose sturgeon, is that it could be greater than 150 km (93 mi). We also recognize that although there are 524 river kilometers (326 river miles) in the current designation, there may not be long enough stretches of free-flowing habitat to completely meet this requirement, but as we discussed under comment #10, this is the best remaining habitat we have left. We will continue to work with partners and seek every opportunity (*e.g.*, fish passage) to address these issues and work towards increasing the length of free-flowing habitat that currently exists in the Alabama River.

Criteria Used To Identify Critical Habitat

As required by section 4(b) of the Act, we used the best scientific and commercial data available to designate critical habitat. We only designate areas outside the geographical area occupied by a species when a designation limited to its present range would be inadequate to ensure the conservation of the species (50 CFR 424.12(e)). The Alabama sturgeon is extremely rare. Despite extensive and intensive efforts in the decade prior to its listing, only eight Alabama sturgeon were captured, or reported captured and released. All river sturgeons are migratory and may migrate hundreds of kilometers to spawn, and newly hatched larvae may drift hundreds of kilometers before settling. Therefore, connectivity of spawning, juvenile, and adult feeding and developmental habitats is necessary for the conservation of the species.

We began our analysis by evaluating the Alabama sturgeon in the context of its distribution throughout the historical range to determine what portion of the range must be included to ensure conservation of the species. We considered several factors in this evaluation: (1) Inclusion of reaches that provide the highest likelihood of embryo and juvenile development, (2) inclusion of reaches that contain suitable spawning habitat, and (3) inclusion of areas that provide protection of the species during low flow periods and other catastrophic events.

The historical range of the Alabama sturgeon included nearly every major basin in the Mobile River basin downstream of the Fall Line, comprising nearly 1,600 km (994 mi) of riverine habitat in the Mobile River Basin in Alabama and Mississippi. There are records of Alabama sturgeon from nearly all the major rivers in the Mobile River Basin below the Fall Line, including the Black Warrior, Tombigbee, Alabama, Coosa, Tallapoosa, Mobile, Tensaw, and Cahaba Rivers (Burke and Ramsey 1985, p. 1). However, over the last century, the species has disappeared from at least 85 percent of its historical range, and since the 1960s has experienced a significant decline in the remaining range.

Recent collections (since 1990) of the Alabama sturgeon are confined to the lower Alabama River from its confluence with the Tombigbee River upstream to R.F. Henry Lock and Dam, including the lower Cahaba River (Rider and Hartfield 2007, p. 492). The entire historical range of the Alabama sturgeon is now controlled by a series of more than 25 large locks or dams. These manmade structures have resulted in a series of impoundments that are interspersed with free-flowing reaches of varying lengths. Within the Alabama sturgeon's historical range there are three dams on the Alabama River (completed between 1969 and 1971), two on the Black Warrior River (completed by 1971), and six on the Tombigbee River (completed between 1955 and 1985). These 11 dams alone have impounded and fragmented more than 970 km (602 mi) of riverine habitat once occupied by sturgeon. Prior to construction of these structures, sturgeon could move freely between feeding areas, from feeding areas to sites that were suitable for spawning and development of embryos, and larvae had abundant free-flowing riverine habitat to develop.

The locks and dams that impound the river constitute barriers to sturgeon passage. Although fish species that occupy the middle of the water column (*e.g.*, shad, catfishes, paddlefish) could, and do, pass through the locks while they are being operated, evidence suggests that sturgeon do not pass through the lock chambers during normal lockages. Most adult sturgeons, including the Alabama sturgeon, are benthic (bottom-dwelling) cruisers, and are not likely to move up in the water column to scale physical hurdles (Cooke *et al.* 2002, p. 108). The lock chambers at Millers Ferry and Claiborne Locks and Dams have upper and lower sills which form a rather large hurdle (about 9 m (30 ft) above the river floor at the upper end of Miller Ferry) for sturgeon moving upstream and downstream. However, recent work with shortnose sturgeon could help develop promising new strategies for Alabama sturgeon fish passage. For instance, at the Pinopolis Project (at the base of Lake Moultrie on the Cooper River), cooperators have been attempting to move sturgeon upstream via the navigation locks. Although fish have not yet been shown to move directly through the locks, researchers have manually captured sturgeon below the dam and then moved them upstream of the lock, after which they migrated to areas approximately 161 km (100 mi) upstream where spawning had been documented (Finney *et al.* 2006).

With migration routes impeded, isolated subpopulations of Alabama sturgeon are unable to successfully recruit adequate numbers to replenish the population. Reduced numbers of recruited sturgeon and surviving adult fish can become more vulnerable to localized declines in water and habitat quality caused by hydropower releases, local riverine and land management practices, or by polluted discharges. It is unlikely that Alabama sturgeon habitat and life cycle requirements can be met in long stretches of low flow, such as those that exist in the impounded areas of the river, where decreased flows typically cause silt and other fine sediments to accumulate over bottom habitats, creating unsuitable conditions for spawning, feeding, and larval growth and development.

The Alabama sturgeon is considered extirpated from the upper Alabama, Black Warrior, Tombigbee, Coosa, Tallapoosa, Mobile, and Tensaw Rivers. The Upper Alabama is isolated by Robert F. Henry Lock and Dam, and this reach of the river is essentially impounded to the confluence of the Coosa and Tallapoosa Rivers, and does not contain appropriate habitat for the conservation of the Alabama sturgeon.

Sturgeon have not been collected from the Black Warrior, Coosa, Tallapoosa, or Tombigbee Rivers in more than 30 years. With the exception of the extreme lower Tombigbee River, all of these areas are isolated from currently occupied river reaches, and their riverine habitats are impounded and highly fragmented by multiple large river dams. Although some isolated areas within these drainages may contain some of the appropriate habitat features for Alabama sturgeon, their limited extent and the lack of continuity or accessibility to other habitats limits their value to the species.

The Mobile, Tensaw, and lower Tombigbee Rivers are currently accessible to Alabama sturgeon; however, there have been no confirmed collections of the species in more than 20 years. In addition, the natural hydrograph of the lower Mobile Basin has been radically altered by multiple

navigation and hydropower dams on the Tombigbee River, and the flows are seasonally highly variable. These areas may be occasionally used or visited by subadult or adult Alabama sturgeon; however, there is no recent evidence that this is occurring and little historical evidence of such use. Although some habitat features occur in these river reaches, their value in conservation of the species is not known.

At the time of listing, we considered the Alabama River from south of Miller's Ferry Lock and Dam to the confluence of the Tombigbee River to be occupied. Shortly after publication of the listing rule, an Alabama sturgeon was captured and released at river mile 8.5 in the Cahaba River. This capture of an adult sturgeon indicated that this area also was occupied at the time of listing, given that the fish could not have reached this area from other sections of the river due to the lock and dam arrangement (*see* the Riverine Flows and Channel Stability section), and would have been present at the time the rule was published in the **Federal Register** (May 5, 2000). Given the fish's proximity to the mouth of the Cahaba River and the lack of barriers with the Alabama River section located between R.F. Henry Lock and Dam and the Millers Ferry Lock and Dam, we believe the fish are likely to use all of these areas, and, therefore, we consider these areas occupied at the time of listing. There is some evidence of past upstream spawning runs in the Cahaba River as well (Williams and Clemmer 1991, p. 27). Based on historical information and recent collections, we consider all of the following areas to have been occupied at listing, as well as currently occupied: The Alabama River from R.F. Henry Lock and Dam downstream to the confluence of the Tombigbee River, and the Cahaba River from its confluence with the Alabama River upstream to U.S. Highway 82, which is close to the Fall Line at Centreville, Alabama. Given the lack of appropriate habitat elsewhere within the species' historical range, we conclude that this final designation should include all habitat occupied at the time of listing.

Once we determined that the proper scale of the critical habitat designation should cover the area occupied by the species, we assessed the critical life history components of Alabama sturgeon as they relate to habitat. Alabama sturgeon use the rivers for spawning, larval and juvenile feeding and development, adult resting, feeding, and staging, and to move between the areas that support these components. Therefore, all areas meeting these requirements were considered for inclusion.

We then investigated the habitat types that support these life history components and where these habitat areas are located. We evaluated empirical data (including that gathered from recent radiotelemetry), recent channel bathymetry data (collected by the USACE), as well as published and unpublished literature. These habitat components are described in the *Primary Constituent Elements* section of this final rule.

To determine which areas should be designated as critical habitat, we then evaluated where the necessary physical and biological features of Alabama sturgeon habitat occur within the areas occupied at the time of listing. Detailed location data are included in the unit description in the Final Critical Habitat Designation section of this final rule. We have determined that these areas occur from the Alabama River, at its confluence with the Tombigbee River, upstream to R.F. Henry Lock and Dam. This also includes the Cahaba River upstream to U.S. Highway 82 near the Fall Line in Bibb County. All of these areas support one or more of the PCEs and are accessible to sturgeon (*i.e.*, not entirely blocked by dams). All life stages are associated with flowing waters and other features characteristic of free-flowing riverine habitats. Nearly the entire length of the Alabama and Cahaba River currently meet these requirements. This area is being designated as critical habitat to ensure adequate protection of spawning sites, habitat needed for juvenile development, and movement of adult sturgeon to and from spawning areas.

When determining critical habitat boundaries within this final rule, we made every effort to avoid including developed areas such as lands covered by buildings, pavement, and other structures, because such lands lack PCEs for the Alabama sturgeon. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this final rule have been excluded by text in the rule and are not designated as critical habitat. Therefore, a Federal action involving these lands will not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the PCEs in the adjacent critical habitat.

We are designating as critical habitat lands that we have determined to be occupied at the time of listing and contain, or have the potential to contain, sufficient PCEs to support life history functions essential for the conservation of the species.

The Alabama and Cahaba Rivers Critical Habitat Unit was designated based on sufficient PCEs being present to support Alabama sturgeon life processes. Some segments of this unit contain all PCEs and supported multiple life processes. Some segments contained only a portion of the PCEs necessary to support the Alabama sturgeon's particular use of that habitat.

Final Critical Habitat Designation

We are designating one contiguous section of the Alabama River and a portion of the lower Cahaba River as one critical habitat unit for Alabama sturgeon. The areas we describe below constitute our current best assessment at this time of areas that meet the definition of critical habitat for the Alabama sturgeon. The single unit we are designating as critical habitat is the Alabama River from its confluence with the Tombigbee River, Clarke and Baldwin Counties, Alabama, upstream to R.F. Henry Lock and Dam, Autauga and Lowndes Counties, Alabama; and the Cahaba River from its confluence with the Alabama River upstream to U.S. Highway 82 near the Fall Line in Bibb County, Alabama. Table 1 shows the occupied unit, land ownership, and approximate area.

TABLE 1—ALABAMA STURGEON FINAL CRITICAL HABITAT UNIT: OCCUPANCY, SIZE, AND LAND OWNERSHIP

Critical habitat unit	Occupied at time of listing	Currently occupied	Size of unit in kilometers (miles)	Land ownership by type
Alabama and Cahaba Rivers	yes	yes	524 (326)	State.

We present a brief description of the unit and reasons why it meets the definition of critical habitat for the Alabama sturgeon, below.

Unit: Alabama and Cahaba Rivers, Alabama

The critical habitat unit encompasses 524 km (326 mi) of river channel. The portion of river channel in the Alabama River extends 394 km (245 mi) from its confluence with the Tombigbee River, Baldwin and Clarke Counties, Alabama, upstream to R.F. Henry Lock and Dam, Autauga and Lowndes Counties, Alabama; and the portion of river channel in the Cahaba River extends 130 km (81 mi) from its confluence with the Alabama River, Dallas County, Alabama, upstream to U.S. Highway 82, Bibb County, Alabama. The Alabama and Cahaba Rivers are the last known areas that still support the sturgeon, and both were occupied at the time of listing. This was recently confirmed by the 2007 collection of an individual from the Alabama River below Claiborne Lock and Dam, and the 2000 collection of an individual sturgeon from the lower Cahaba River (ADCNR pers. comm. 2007). Although the Alabama River, within this unit, contains two physical barriers (Claiborne and Millers Ferry Locks and Dams), it has several PCEs and has the potential to support all of the PCEs to sustain this extremely rare fish. The single critical habitat unit includes, for each river or stream listed, the channel between the ordinary high water mark on each bank, which is defined in 33 CFR 329.11 as ''the line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas.'' The distances between landmarks marking the upstream and downstream boundaries of the unit are given in kilometers and equivalent miles, as measured by tracing the thalweg (a line connecting the lowest points of successive cross sections) of the stream, not the straight-line distance. River miles referenced in this rule were taken from a USACE 1985 stream mileage table.

The river channel within the entire unit is owned by the State of Alabama, and the vast majority of adjacent lands are under private ownership, with the exception of a portion of the Cahaba River that includes Talladega National Forest (Oakmulgee Division). Although the Oakmulgee Division encompasses a total of 63,484 hectares (ha) (156,871 acres (ac)), there are only about 9,952 ha (24,591 ac) that are directly adjacent to the Cahaba River. The Barton Beach Reserve, a small tract owned by The Nature Conservancy, encompasses 45 ha (112 ac) and covers approximately 1,150 m (3,773 ft) along the Cahaba River. This unit meets the definition of critical habitat based on the discussion above and contains all PCEs. This unit was occupied at the time of listing and is currently occupied. Special management of the PCEs for the Alabama sturgeon and its habitat may be required for the following threats: Low-flow conditions, detrimental changes in water quality, reduction in the amount of free-flowing habitat, and detrimental changes to the morphology or stability of the river channel.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that actions they fund, authorize, or carry out are not likely to destroy or adversely modify critical habitat. Decisions by the Fifth and Ninth Circuits Court of Appeals have invalidated our definition of ''destruction or adverse modification'' (50 CFR 402.02) (see *Gifford Pinchot Task Force* v. *U.S. Fish and Wildlife Service,* 378 F.3d 1059 (9th Cir. 2004) and *Sierra Club* v. *U.S. Fish and Wildlife Service et al.*, 245 F.3d 434, 442 (5th Cir. 2001)), and we do not rely on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat. Under the statutory provisions of the Act, we determine destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would remain functional (or retain those physical and biological features that relate to the ability of the area to periodically support the species) to serve its intended conservation role for the species.

If a species is listed or critical habitat is designated, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. As a result of this consultation, we document compliance with the requirements of section 7(a)(2) through our issuance of:

(1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or

(2) A biological opinion for Federal actions that may affect, and are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat, we also provide reasonable and prudent alternatives to the project, if any are identifiable. We define ''reasonable and prudent alternatives'' at 50 CFR 402.02 as alternative actions identified during consultation that:

(1) Can be implemented in a manner consistent with the intended purpose of the action,

(2) Can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction,

(3) Are economically and technologically feasible, and

(4) Would, in the Director's opinion, avoid jeopardizing the continued existence of the listed species or destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where we have listed a new species or subsequently designated critical habitat that may be affected and the Federal agency has retained discretionary involvement or control over the action (or the agency's discretionary involvement or control is authorized by law). Consequently, Federal agencies may sometimes need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions with discretionary involvement or control may affect subsequently listed species or designated critical habitat.

Federal activities that may affect Alabama sturgeon or its designated critical habitat require section 7 consultation under the Act. Activities on State, Tribal, local, or private lands requiring a Federal permit (such as a permit from the USACE under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from us under

section 10 of the Act) or involving some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency) are subject to the section 7 consultation process. Federal actions not affecting listed species or critical habitat, and actions on State, Tribal, local, or private lands that are not Federally funded, authorized, or permitted, do not require section 7 consultations.

Application of the ''Adverse Modification'' Standard

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species, or retain those PCEs that relate to the ability of the area to periodically support the species. Activities that may destroy or adversely modify critical habitat are those that alter the PCEs to an extent that appreciably reduces the conservation value of critical habitat for Alabama sturgeon. As discussed above, the role of critical habitat is to support the life history needs of the species and provide for the conservation of the species.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe, in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such designation.

Activities that, when carried out, funded, or authorized by a Federal agency, may affect critical habitat and therefore should result in consultation for the Alabama sturgeon include, but are not limited to:

(1) Actions that would significantly alter the existing flow regime to the point at which the habitat could no longer sustain normal behavior and promote species recovery. Such activities could include, but are not limited to, construction and operation of dams, water withdrawals, and channelization. These activities could eliminate or reduce spawning habitats, impair the development of embryos and larvae, impede or eliminate normal migration patterns, reduce the ability of the river to adequately assimilate pollution, and compromise the integrity and utility of cool water refuges (perennial tributaries). In addition, flows less than 4,640 cubic feet per second, as determined by the USACE at Montgomery, would need to be evaluated on an individual basis to determine if they may affect the critical habitat, and conclusions could be dependent, in part, on intervening flows (*e.g.*, Catoma Creek, Cahaba River), water temperature, and dissolved oxygen content in the Alabama River downstream of Montgomery. Dependent on these factors and conditions in the river at the time of the consultation, a Not Likely to Adversely Affect Determination could still be possible.

(2) Actions that would significantly alter the morphology and stability of the river channel. Such activities would include, but are not limited to, dredging and mining of consolidated bed material, impoundments, road and bridge construction, and destruction of riparian vegetation. These activities could eliminate suitable substrates for egg deposition and development, increase turbidity, and initiate erosion along the banks, which could increase water temperatures and reduce the width of the riparian zone.

(3) Actions that would significantly decrease the amount of currently available free-flowing habitat. Such activities would include, but are not limited to, construction and operation of dams, water withdrawals, further alteration of flow regimes, and diversions. These activities could further minimize the currently available length of free-flowing habitat to support spawning migrations and development of embryos and larvae.

(4) Actions that would significantly alter water chemistry beyond what is required in the State of Alabama water quality standards. Such activities would include, but are not limited to, the discharge of chemicals, biological pollutants, nutrients, and other toxic substances that originate from non-point or point source discharges, and altered flow patterns that could lower dissolved oxygen levels. These substances could directly, or through accumulation in tissue, impair sturgeon behavior, reproduction, and growth.

We consider the unit designated as critical habitat to contain features essential to the conservation of Alabama sturgeon and which require special management. The unit is within the geographic range of the species, it was occupied by the species at the time of listing, and it is currently occupied. Federal agencies already consult with us on activities that may affect the species, to ensure that their actions do not jeopardize the continued existence of Alabama sturgeon.

Exemptions and Exclusions

Application of Section 4(a)(3) of the Act

The National Defense Authorization Act for Fiscal Year 2004 (Pub. L. 108–136) amended the Act to limit areas eligible for designation as critical habitat. Specifically, section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: ''The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan prepared under section 670a of this title, if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.''

There are no Department of Defense lands with a completed integrated natural resources management plan within the designated critical habitat designation.

Application of Section 4(b)(2) of the Act

Section 4(b)(2) of the Act states that the Secretary must designate and revise critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, the statute on its face, as well as the legislative history, are clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor.

Under section 4(b)(2) of the Act, we may exclude an area from designated critical habitat based on economic impacts, impacts on national security, or any other relevant impacts. In considering whether to exclude a particular area from the designation, we must identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, and determine whether the benefits of exclusion outweigh the benefits of inclusion. If based on this analysis, we make this determination, then we can exclude the area only if such exclusion would not result in the extinction of the species.

Exclusions Based on Economic Impacts

Under section 4(b)(2) of the Act, we consider the economic impacts of specifying any particular area as critical habitat. In order to consider economic impacts, we prepared a draft economic analysis, which we made available for public review on December 30, 2008 (73 FR 79770), based on the May 27, 2008, proposed rule (73 FR 30361). We accepted comments on the draft analysis until February 9, 2009. Following the close of the comment period, a final analysis of the potential economic effects of the designation was developed taking into consideration the public comments and any new information.

The intent of the FEA is to quantify the economic impacts of all potential conservation efforts for Alabama sturgeon. The economic impact of the final critical habitat designation is analyzed by comparing scenarios both ''with critical habitat'' and ''without critical habitat.'' The ''without critical habitat'' scenario represents the baseline for the analysis, considering protections already in place for the species (*e.g.,* under the Federal listing and other Federal, State, and local regulations). The baseline, therefore, represents the costs incurred regardless of whether critical habitat is designated. The ''with critical habitat'' scenario describes the incremental impacts associated specifically with the designation of critical habitat for the species. The incremental conservation efforts and associated impacts are those not expected to occur absent the designation of critical habitat for the species. In other words, the incremental costs are those attributable solely to the designation of critical habitat above and beyond the baseline costs; these are the costs we consider in the final designation of critical habitat. The analysis looks retrospectively at baseline impacts incurred since the species was listed, and forecasts both baseline and incremental impacts likely to occur with the designation of critical habitat.

The FEA also addresses how potential economic impacts are likely to be distributed, including an assessment of any local or regional impacts of habitat conservation and the potential effects of conservation activities on government agencies, private businesses, and individuals. The FEA measures lost economic efficiency associated with residential and commercial development and public projects and activities, such as economic impacts on water management and transportation projects, Federal lands, small entities, and the energy industry. Decision-makers can use this information to assess whether the effects of the designation might unduly burden a particular group or economic sector. Finally, the FEA looks retrospectively at costs that have been incurred since 2000 (year of the species' listing; 65 FR 26438), and considers those costs that may occur in the 20 years following the designation of critical habitat, which was determined to be the appropriate period for analysis because limited planning information was available for most activities to forecast activity levels for projects beyond a 20-year timeframe. The FEA quantifies economic impacts of Alabama sturgeon conservation efforts associated with the following categories of activity: water management, activities that impact water quality, dredging activities and other impacts (*e.g.*, bridge replacement, management plans, natural gas pipelines, etc.).

Present value baseline impacts associated with potential future conservation efforts for the sturgeon are estimated to be $636,000 ($42,700 annualized), assuming a 3 percent discount rate, or $466,000 ($44,000 annualized), assuming a 7 percent discount rate, over the next 20 years. Baseline impacts quantified in this analysis are 40 percent project modifications for dredging activities. All remaining baseline impacts are administrative costs of section 7 consultation. Impacts to dredging activities represent roughly 58.9 percent of forecast post-designation baseline costs. Impacts associated with water management represent 17.1 percent of the total, and impacts to activities that may affect water quality represent 15.1 percent of the total. Present value incremental impacts are anticipated to result entirely from the added administrative requirements of forecast section 7 consultations, and are estimated to be $93,800 ($6,300 annualized), assuming a 3 percent discount rate, or $71,200 ($6,720 annualized), assuming a 7 percent discount rate.

Our economic analysis did not identify any disproportionate costs that are likely to result from the designation. Following a consideration of the potential conservation benefits to the species from the designation of critical habitat and the potential economic impact, we have determined that there is a great conservation benefit to maintaining all areas within the designation. Consequently, we are not excluding any areas from this designation of critical habitat for the Alabama sturgeon based on economic impacts.

A copy of the final economic analysis with supporting documents may be obtained by contacting the Alabama Ecological Services Field Office (*see* **ADDRESSES**) or by downloading from the Internet at *http://www.regulations.gov*.

Exclusions Based on National Security Impacts

Under section 4(b)(2) of the Act, we consider whether there are lands owned or managed by the Department of Defense (DOD) where a national security impact might exist. In preparing this final rule, we have determined that the lands within the designation of critical habitat for Alabama sturgeon are not owned or managed by the DOD; therefore, we anticipate no impact to national security. There are no areas excluded from this final designation based on impacts on national security.

Exclusions Based on Other Relevant Impacts

Under section 4(b)(2) of the Act, we consider any other relevant impacts, in addition to economic impacts and impacts on national security. We consider a number of factors, including whether the landowners have developed any HCPs or other management plans for the area, or whether there are conservation partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at any Tribal issues, and consider the government-to-government relationship of the United States with Tribal entities. We also consider any social impacts that might occur because of the designation.

In preparing this final rule, we have determined that there are currently no HCPs or other management plans for Alabama sturgeon, and the final designation does not include any Tribal lands or trust resources. We anticipate no impact to Tribal lands, partnerships, or HCPs from this critical habitat designation. There are no areas excluded from this final designation based on other relevant impacts.

Required Determinations

Regulatory Planning and Review—Executive Order 12866

The Office of Management and Budget (OMB) has determined that this rule is not significant and has not reviewed this rule under Executive Order 12866 (E.O. 12866). OMB bases its determination upon the following four criteria:

(1) Whether the rule will have an annual effect of $100 million or more on the economy or adversely affect an economic sector, productivity, jobs, the

environment, or other units of the government.

(2) Whether the rule will create inconsistencies with other Federal agencies' actions.

(3) Whether the rule will materially affect entitlements, grants, user fees, loan programs or the rights and obligations of their recipients.

(4) Whether the rule raises novel legal or policy issues.

Regulatory Flexibility Act (5 U.S.C. 601 et seq.)

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 *et seq.*), as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 (5 U.S.C. 801 *et seq.*), whenever an agency must publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities. In this final rule, we are certifying that the critical habitat designation for Alabama sturgeon will not have a significant economic impact on a substantial number of small entities. The following discussion explains our rationale.

According to the Small Business Administration, small entities include small organizations, such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents; as well as small businesses. Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than $5 million in annual sales, general and heavy construction businesses with less than $27.5 million in annual business, special trade contractors doing less than $11.5 million in annual business, and agricultural businesses with annual sales less than $750,000. To determine if potential economic impacts to these small entities are significant, we consider the types of activities that might trigger regulatory impacts under this rule, as well as the types of project modifications that may result. In general, the term ''significant economic impact'' is meant to apply to a typical small business firm's business operations.

To determine if the rule could significantly affect a substantial number of small entities, we consider the number of small entities affected within particular types of economic activities (*e.g.*, water management, water quality, dredging, and other activities). We apply the ''substantial number'' test individually to each industry to determine if certification is appropriate. However, the SBREFA does not explicitly define ''substantial number'' or ''significant economic impact.'' Consequently, to assess whether a ''substantial number'' of small entities is affected by this designation, this analysis considers the relative number of small entities likely to be impacted in an area. In some circumstances, especially with critical habitat designations of limited extent, we may aggregate across all industries and consider whether the total number of small entities affected is substantial. In estimating the number of small entities potentially affected, we also consider whether their activities have any Federal involvement.

Designation of critical habitat only affects activities authorized, funded, or carried out by Federal agencies. Some kinds of activities are unlikely to have any Federal involvement and so will not be affected by critical habitat designation. In areas where the species is present, Federal agencies already are required to consult with us under section 7 of the Act on activities they authorize, fund, or carry out that may affect the Alabama sturgeon. Federal agencies also must consult with us if their activities may affect critical habitat. Designation of critical habitat, therefore, could result in an additional economic impact on small entities due to the requirement to reinitiate consultation for ongoing Federal activities (*see Application of the ''Adverse Modification Standard''* section).

In our final economic analysis of the critical habitat designation, we evaluated the potential economic effects on small business entities resulting from conservation actions related to the listing of the Alabama sturgeon and the designation of critical habitat. The analysis is based on the estimated impacts associated with the rulemaking as described in Chapters 3 through 6 and Appendix A of the analysis and evaluates the potential for economic impacts related to: (1) Water management, (2) water quality, (3) dredging, and (4) other activities.

All incremental impacts quantified in the economic analysis are administrative impacts of conducting the forecasted section 7 consultations. That is, the designation of critical habitat is not forecasted to result in changes in operations and management of the water-dependent land use activities considered in this analysis as discussed in Sections 3 through 6. Small entities may, however, be required to spend additional time considering critical habitat during section 7 consultation. These incremental, administrative impacts are the focus of this analysis of impacts to small entities.

For development, construction, and dredging activities, the threshold is expressed in terms of annual revenues. While this threshold marks the high-end revenue estimate for the potentially affected small businesses, impacts per entity as described in the exhibit are significantly less than the threshold estimates. Conservatively assuming a single business is associated with all of the forecasted impacts for each activity, the greatest impact per entity would be incurred by a business that affects water quality. Note that the present-value, 20-year impact of $5,570 to a single small business is less than 0.01 percent of the small business annual revenue thresholds in this case.

In addition to the incremental impacts summarized in Exhibit A–1 of the FEA, Sections 3 and 4 of the analysis discuss potential impacts that may result from providing greater river flow or complying with water quality standards to benefit the sturgeon.

While this analysis acknowledges that such changes may generate economic impacts, we indicated in an October 22, 2008, memorandum (provided as Appendix D in the FEA) that we cannot reliably predict whether, when, or the reasons, we may request these conservation efforts. In the case that the designation of critical habitat triggers the request for these conservation efforts, associated economic impacts would be considered incremental and therefore relevant to this discussion of impacts on small entities. In the case that we request higher river flows or accelerated compliance with existing water standards, small businesses may be affected. The nature of these potential impacts is presented in Sections 3 and 4 of the FEA.

In summary, we considered whether this designation would result in a significant economic effect on a substantial number of small entities. Based on the above reasoning and

currently available information, we concluded that this rule would not result in a significant economic impact on a substantial number of small entities. Therefore, we are certifying that the designation of critical habitat for Alabama sturgeon will not have a significant economic impact on a substantial number of small entities, and a regulatory flexibility analysis is not required.

Energy Supply, Distribution, or Use—Executive Order 13211

On May 18, 2001, the President issued Executive Order 13211 (E.O. 13211, ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use'') on regulations that significantly affect energy supply, distribution, and use. E.O. 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. OMB has provided guidance for implementing this Executive Order that outlines nine outcomes that may constitute ''a significant adverse effect'' when compared to not taking the regulatory action under consideration. There are currently two hydroelectric dams (Robert F. Henry and Millers Ferry Locks and Dams) located on portions of the river within the critical habitat designation. Although insufficient information is available to estimate changes in the electricity production of these facilities due to sturgeon conservation efforts, it is unlikely that any such changes would result in decreased electricity production of one billion kilowatt-hours in even the worst drought year (when additional flows for sturgeon conservation efforts would be most needed). During the drought year of 2007, total electricity generation from the 15 hydroelectric facilities in the ACT Basin was roughly 2.19 billion kilowatt-hours. To reach the 1 billion kilowatt-hour reduction specified in Executive Order No. 13211, 2007 generation would need to be reduced by 46 percent. Although changes in the timing and magnitude of flows throughout a given year for sturgeon conservation efforts may impact total electricity generation, total flow volume over the course of that year will remain unchanged. Any recommendations from us are therefore unlikely to cause reductions in generation of this magnitude. As such, designation of critical habitat is not expected to lead to any of the adverse outcomes specified in Executive Order No. 13211. As such, the designation of critical habitat is not expected to significantly affect energy supplies, distribution, or use. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required.

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*), we make the following findings:

(1) This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or Tribal governments, or the private sector, and includes both ''Federal intergovernmental mandates'' and ''Federal private sector mandates.'' These terms are defined in 2 U.S.C. 658(5)–(7). ''Federal intergovernmental mandate'' includes a regulation that ''would impose an enforceable duty upon State, local, or [T]ribal governments,'' with two exceptions. It excludes ''a condition of Federal assistance.'' It also excludes ''a duty arising from participation in a voluntary Federal program,'' unless the regulation ''relates to a then-existing Federal program under which $500,000,000 or more is provided annually to State, local, and Tribal governments under entitlement authority,'' if the provision would ''increase the stringency of conditions of assistance'' or ''place caps upon, or otherwise decrease, the Federal Government's responsibility to provide funding,'' and the State, local, or Tribal governments ''lack authority'' to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. ''Federal private sector mandate'' includes a regulation that ''would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.''

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would critical habitat shift the costs of the large entitlement programs listed above onto State governments.

(2) We do not believe that this rule will significantly or uniquely affect small governments, because it will not produce a Federal mandate of $100 million or greater in any year; that is, it is not a ''significant regulatory action'' under the Unfunded Mandates Reform Act. The designation of critical habitat imposes no obligations on State or local governments. By definition, Federal agencies are not considered small entities, although the activities they fund or permit may be proposed or carried out by small entities. As such, a Small Government Agency Plan is not required.

Takings—Executive Order 12630

In accordance with E.O. 12630 (''Government Actions and Interference with Constitutionally Protected Private Property Rights''), we have analyzed the potential takings implications of designating critical habitat for Alabama sturgeon in a takings implications assessment. Critical habitat designation does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. The takings implications assessment concludes that this designation of critical habitat for Alabama sturgeon does not pose significant takings implications for lands within or affected by the designation.

Federalism—Executive Order 13132

In accordance with E.O. 13132 (Federalism), this rule does not have significant Federalism effects. A Federalism assessment is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of, this critical habitat designation with appropriate State resource agencies in Alabama. We received comments from the State of Georgia, the Alabama Office of Water Resources, the Governor's Office for the State of Alabama, and the

Alabama Department of Conservation and Natural Resources, and we have addressed them in the Summary of Comments and Recommendations section of the rule. The designation of critical habitat in areas currently occupied by the Alabama sturgeon may impose nominal additional regulatory restrictions to those currently in place and, therefore, may have little incremental impact on State and local governments and their activities. The designation may have some benefit to these governments, in that the areas that contain the physical and biological features essential to the conservation of the species are more clearly defined, and the PCEs of the habitat necessary to the conservation of the species are specifically identified. This information does not alter where and what Federally sponsored activities may occur. However, it may assist local governments in long-range planning (rather than having them wait for case-by-case section 7 consultations to occur).

Civil Justice Reform—Executive Order 12988

In accordance with E.O. 12988 (Civil Justice Reform), the regulation meets the applicable standards set forth in sections 3(a) and 3(b)(2) of the Order. We are designating critical habitat in accordance with the provisions of the Act. This final rule uses standard property descriptions and identifies the physical and biological features essential to the conservation of the subspecies within the designated areas to assist the public in understanding the habitat needs of the Alabama sturgeon.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses as defined by NEPA (42 U.S.C. 4321 *et seq.*) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County* v. *Babbitt,* 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994, ''Government-to-Government Relations with Native American Tribal Governments'' (59 FR 22951), E.O. 13175, and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997, ''American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act,'' we readily acknowledge our responsibilities to work directly with Tribes in developing programs for healthy ecosystems, to acknowledge that Tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to Tribes. We determined that there are no Tribal lands occupied at the time of listing that contain the features essential for the conservation, and no unoccupied Tribal lands that are essential for the conservation of the Alabama sturgeon. Therefore, we are not designating critical habitat for the Alabama sturgeon on Tribal lands.

References Cited

A complete list of all references cited is available on the Internet at *http://www.regulations.gov* and upon request from the Alabama Ecological Services Field Office (*see* **FOR FURTHER INFORMATION CONTACT**).

Author(s)

The primary authors of this package are the staff of the Alabama Ecological Services Field Office.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Regulation Promulgation

■ Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

■ 1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Public Law 99–625, 100 Stat. 3500; unless otherwise noted.

■ 2. In § 17.11(h), revise the entry for ''Sturgeon, Alabama'' under ''FISHES'' in the List of Endangered and Threatened Wildlife to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*	*	*	*	*	*		*
FISHES							
*	*	*	*	*	*		*
Sturgeon, Alabama	*Scaphirhynchus suttkusi*	U.S.A. (AL, MS)	NA	E	697	17.95(e)	NA
*	*	*	*	*	*		*

■ 3. In § 17.95, amend paragraph (e) by adding an entry for ''Alabama sturgeon (*Scaphirhynchus suttkusi*),'' in the same alphabetical order that the species appears in the table at § 17.11(h), to read as follows:

§ 17.95 Critical habitat—fish and wildlife.

* * * * *

(e) Fishes

* * * * *

Alabama sturgeon (*Scaphirhynchus suttkusi*)

(1) Critical habitat unit is depicted for Baldwin, Monroe, Wilcox, Clarke, Dallas, Lowndes, Autauga, Bibb, and Perry Counties, Alabama, on the map below.

(2) The primary constituent elements of critical habitat for the Alabama sturgeon are:

(i) A flow regime (*i.e.,* the magnitude, frequency, duration, seasonality of discharge over time) necessary to maintain all life stages of the species in the riverine environment, including migration, breeding site selection, resting, larval development, and protection of cool water refuges (*i.e.,* tributaries).

(ii) River channel with stable sand and gravel river bottoms, and bedrock walls, including associated mussel beds.

(iii) Limestone outcrops and cut limestone banks, large gravel or cobble such as that found around channel training devices, and bedrock channel walls that provide riverine spawning sites with substrates suitable for embryo deposition and development.

(iv) Long sections of free-flowing water to allow spawning migrations and development of embryos and larvae.

(v) Water temperature not exceeding 32° Celsius (90° Fahrenheit); dissolved oxygen levels not less than 5 milligrams per liter (mg/L) (5 parts per million (ppm)), except under extreme conditions due to natural causes or downstream of existing hydroelectric impoundments, where it can range from 5 mg/L to 4 mg/L (5 ppm to 4 ppm); and pH within the range of 6.0 to 8.5.

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, docks, dams, runways, roads, and other paved areas) and the land or waterway on which they are located existing within the legal boundaries on the effective date of this rule.

(4) Critical habitat map unit. Data layers defining the map unit were created on a base of USGS 7.5′ quadrangles, and the critical habitat unit was then mapped using Universal Transverse Mercator (UTM) coordinates.

(5) Unit: Alabama and Cahaba Rivers; Baldwin, Monroe, Wilcox, Clarke, Dallas, Lowndes, Autauga, Perry, and Bibb Counties, Alabama.

(i) The unit encompasses 524 km (326 mi) of river channel. The portion of river channel in the Alabama River extends 394 km (245 mi) from its confluence with the Tombigbee River, Baldwin and Clarke Counties, Alabama, upstream to R.F. Henry Lock and Dam, Autauga and Lowndes Counties, Alabama; and the portion of river channel in the Cahaba River extends 130 km (81 mi) from its confluence with the Alabama River, Dallas County, Alabama, upstream to U.S. Highway 82, Bibb County, Alabama.

(ii) Note: Map of Unit, Critical Habitat for Alabama Sturgeon (*Scaphirhynchus suttkusi*): Alabama and Cahaba Rivers, follows:

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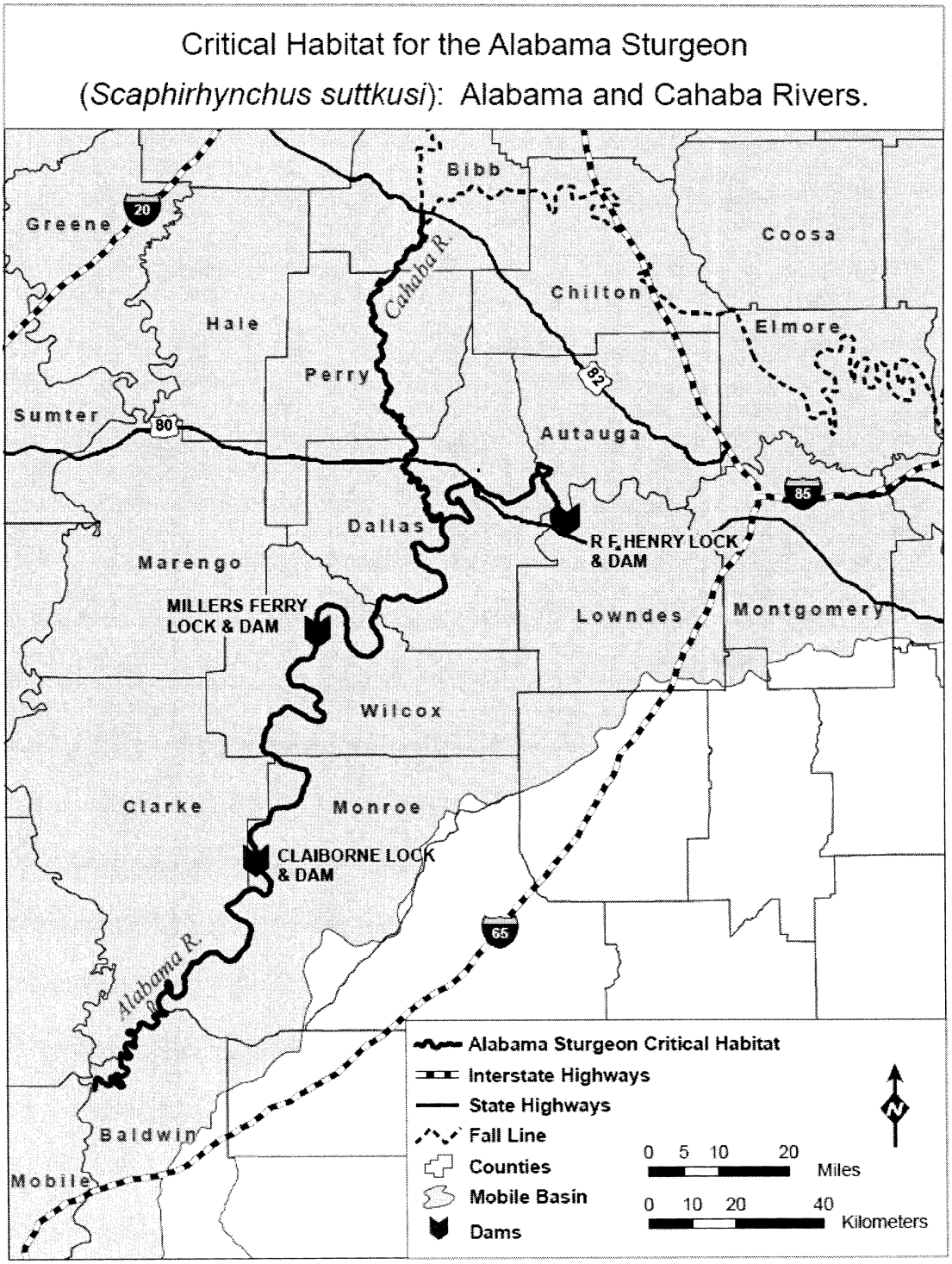

* * * * *

Dated: May 21, 2009.

Jane Lyder,

Deputy Assistant Secretary, Fish and Wildlife and Parks.

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