United States Department of the Interior

FISH AND WILDLIFE SERVICE
P. O. Drawer 1190
Daphne, Alabama 36526

IN REPLY REFER TO:

May 14, 2003

Mr. Joe D. Wilkerson
Division Administrator
Federal Highway Administration
500 East Boulevard, Suite 200
Montgomery, AL 36117-2018

Dear Mr. Wilkerson:

This document transmits the Fish and Wildlife Service's (Service) biological opinion based on our review of the proposed Federal Highway Administration Project DPI-0030(005) located in Mobile and Baldwin Counties, Alabama over Mobile Bay, and its effects on the endangered Alabama red-bellied turtle (*Pseudemys alabamensis*) and the threatened Gulf sturgeon (*Acipenser oxyrinchus desotoi*) in accordance with section 7 of the Endangered Species Act of 1973, as amended, (16 U.S.C. 1531 et seq.). Your July 11, 2002 request for formal consultation was received on July 18, 2002.

This biological opinion is based on information provided in the October 9, 2002 biological assessment, discussions with experts in the field, and other sources of information. A complete administrative record of this consultation is on file at the Daphne Field Office.

CONSULTATION HISTORY

October 2, 1996	The Daphne Field Office (DFO) was notified by David Volkert and Associates (Volkert) by letter that they had been contracted by the Alabama Department of Transportation (ALDOT) to conduct a feasibility study for a bridge over the Mobile River.
October 9, 1996	DFO responded to Volkert via a letter.
August 31, 1998	The DFO subsequently received a letter from Volkert changing the scope of the project.
October 2, 1998	The DFO acknowledged receipt of the letter from Volkert changing the scope of the project and restated the federally listed species that may be

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affected by this project.

October 9, 2001	The Federal Highway Administration (FHWA) submitted a Biological Assessment prepared by Volkert.
November 13, 2001.	The DFO position concerning the conclusions of the Biological Assessment was provided to the FHWA by letter.
January 23, 2002	An inter-agency meeting was held on in Mobile, Alabama to discuss the project.
July 11, 2002.	The FHWA requested formal section 7 consultation regarding impacts to the Alabama red-bellied turtle and the Gulf sturgeon associated with the widening of Interstate 10.
August 28, 2002,	By letter, the DFO initiated formal consultation with the FHWA regarding the widening of the Interstate 10 corridor and the erection of a bridge over the Mobile River.

DESCRIPTION OF THE PROPOSED ACTION:

The FHWA and ALDOT have proposed to construct a 2,200-foot-long and 190-foot-high cable stay bridge over the Mobile River and to widen from four lanes to eight lanes the existing Interstate 10 corridor (locally known as the Bayway) over Mobile Bay between Mobile and Daphne, Alabama. ALDOT plans to construct the four additional lanes inside of the twin existing Bayway bridges. The construction of the I-10 Bayway widening will be carried out using segmented barges traversing the area between the existing Bayway lanes. The barges will either float if sufficient water depth exists or rest on the bottom in shallow areas. The barge segments will serve as a construction platform and would be "leap-frogged" ahead using construction cranes as the construction progresses. The project will destroy 14 acres of submerged aquatic vegetation and 6.5 acres of emergent wetlands due to shading from the new structure. At this time, the agencies have not identified the habitat mitigation measures that would be carried out in association with the project.

The action area is considered to include a corridor that encompasses the existing Interstate Highway 10 and a distance of 150 feet north and south of the existing Interstate corridor between Daphne and Mobile, Alabama. The action area also includes existing abandoned/vacant parking lots and public/ALDOT parking facilities identified as staging areas for construction equipment along U.S. 90/98 (Causeway).

STATUS OF THE SPECIES/CRITICAL HABITAT

Alabama red-bellied turtle (*Pseudemys alabamensis*)

Species/critical habitat description: The Alabama red-bellied turtle (*Pseudemys alabamensis*) was listed on June 16, 1987 as endangered (Federal Register, 52:22939-22943), with no critical habitat designated, in Alabama. This is a large, freshwater, herbivorous turtle attaining a shell length of 33 centimeters (13 inches). It normally has an orange to red plastron and at the tip of the upper jaw a prominent notch bordered on each side by a tooth-like cusp. The elongate carapace is high-domed, its highest point often anterior to mid-body, where the shell is widest. The background carapace coloration is brown, olive, or black with yellow to light orange striping. This turtle is thought to be restricted to freshwater habitats in the vicinity of Mobile Bay, including parts of Mobile, Baldwin and Monroe Counties, Alabama. Snags and dense beds of submersed and emergent aquatic vegetation provide turtles with a substrate for cover, predator avoidance, food, and for thermo-regulation by basking.

Life history: The species is believed to be strictly herbivorous. The analysis of turtle stomach contents revealed substantive samples of eight submergent aquatic plants, including *Myriophyllum spicatum* (Nelson 2000). The primary nesting site for this turtle is believed to be Gravine Island in Baldwin County; however, recent survey information indicates nesting takes place at other sites north of the Highway 90/98 causeway on the Big Island spoil bank along the eastern shore of the Apalachee River in Baldwin County (Nelson, 2001). Alabama red-bellied turtle hatchlings may over-winter in the nest to emerge in the early spring (March-April). Vegetative analysis of nesting sites suggests that turtles may prefer sites with some vegetation (rather than unvegetated sand). Nest predation on turtle eggs is significant from raccoons (*Procyon lotor*), fish crows (*Corvus ossifragus*), and boat-tailed grackles (*Quiscalus major*) (Nelson 2001). However, a study of nesting turtles on Gravine Island in 2002 indicated most nests were depredated by armadillos (*Dasypus novemcinctus*), fish crows, and raccoons, respectively (Godwin 2002). This turtle was collected from Chacaloochee Bay in 1992 and 1994, and appears to be widely distributed throughout most of the tributaries of the lower Mobile-Tensaw Delta, although not abundant anywhere (Nelson, 2001, Dobie 1993).

Population dynamics: Data on population status and trends are inconclusive and total population size is unknown. No conclusive data has been collected concerning population stability. Previous age class data indicated an apparent decline in the number of young turtles in the overall population between 1970 and 1983. Of 24 individuals collected from 1968 to 1970, ten were juveniles and small adults. Only one of 20 individuals collected between 1971 and 1983 was a juvenile or small adult (Service, 1990). In a 1995 survey, 24 adult females, ten adult males and 11 juveniles were captured, and 70 road-killed hatchlings that had overwintered in nests were observed on the U.S. 90/98 causeway during a 2001 mortality survey (Nelson 2001).

Status and distribution: The decline in recruitment of this species may be the result of disturbance and predation at Gravine Island, the primary nesting site. The concentration of turtle nests on this sparsely vegetated disposal area makes them easy prey for predators. During the 1960's, domestic pigs (*Sus* sp.) were released on Gravine island and were shortly thereafter observed as aggressive predators of turtle eggs. Armadillo, fish crow, and raccoon predation is currently the most obvious cause for the decline of juveniles. The species has also been detrimentally affected by human activities at Gravine Island, including egg collection (now discontinued) and recreational use. On an overall basis, reductions in the amount of aquatic vegetation may have also had a role in the decline of species, as well as collecting for the pet trade. Alabama red-bellied turtles may also be incidentally harvested by commercial fishermen in gill, hoop, and trammel nets, by crab fishermen in crab traps, and by people towing shrimp trawls (Service, 1990).

In 1994, 23 Alabama red-bellied turtles were captured in Grand Bay, Jim's Creek, the Raft River, Chuckfee Bay, Big Bay John, Oak Bayou, Crab Creek and Chacaloochee Bay as part of a systematic sampling program to document the present distribution of the species (Nelson 2001). Trapping efforts that began in 1995 collected 47 Alabama red-bellied turtles in Gunnison Creek, Bayou Sara, upper Mobile River, Bayou Canot, Chickasaw Creek, Dead Lake, The Basin, upper Tensaw River, Big Briar Creek, Big Lizard Creek and Gravine Island (on the Tensaw River). In 1996, trapping efforts collected 82 Alabama red-bellied turtles from Bayou LaBatre in Mobile County to the Fish River in Baldwin County, and a 1997 trapping effort collected a single Alabama red-bellied turtle (a gravid female) at the mouth of the Alabama River. From May - October 1999, 161 turtles were captured at Gravine Island, of which 90 were Alabama red-bellied turtles. Data on turtle population trends are inconclusive. Although the Alabama redbelly turtle recovery plan states that the species is apparently declining and may become extinct unless recovery actions can be effectively taken to stop the decline (Service, 1990), one researcher concluded that this species appears to be the most common species of turtle along the U.S. 90/98 causeway, including Meaher State Park, the ADCNR property, and Big Island (Nelson 2001).

Discussions are underway concerning the feasibility of restoring tidal circulation patterns in the Mobile-Tensaw Delta by constructing additional breaches in the U.S. 90/98 causeway. If this occurs, the density and species composition of freshwater aquatic vegetation may change as a result of salinity changes, which may affect freshwater habitat available for this species. Impacts to this species would need to be evaluated should that project be formally proposed for construction.

<u>Environmental Baseline</u>

<u>Status of the species within the action area:</u> The Alabama red-bellied turtle is found throughout most of the distributaries of the lower Mobile-Tensaw Delta, but is not particularly abundant anywhere. However, it may be the most common species of turtle in the action area. Existing data indicates it is found primarily north of the U.S. 90/98 Causeway and since most of the action area lies south of the causeway, impacts to the turtle and its habitat may be less than if the highway was placed closer to the Causeway. However, suitable habitat does exist at the eastern terminus of the Bayway within and around D'Olive Bay, as well as, the habitats adjacent to the

Blakeley River.

Factors affecting species environment within the action area: The Alabama red-bellied turtle is threatened primarily by human activities within the action area. Fishing activities, the general presence of people and noise associated with high recreational use likely reduce nesting by the species on the limited nesting habitat within the project area. These disturbances to nesting habitat, and predation by animals have reduced reproductive success and recruitment since 1970. The alligator is probably a frequent predator of Alabama red-bellied turtles as evidenced by the high frequency of tooth scars found on the shells of young turtles (Dobie 1985). Armadillo and fish crow predation appear to be the main factors limiting nest success, a phenomenon which is aided by concentration of turtle nests on sand banks. Field research indicates the presence of fire ants in the turtle nest chambers may be a predation factor for the species.

EFFECTS OF THE ACTION

Factors to be considered

Distribution: The southern geographic distribution of this species appears to be immediately adjacent to the Mobile-Tensaw Delta, and the turtles occur in waterways that now (or formerly) enter Mobile Bay. The species is widely distributed throughout most of the tributaries of the lower Mobile-Tensaw Delta, but is not particularly abundant anywhere (Nelson 2001). The Alabama red-bellied turtle appears to be the most common species of turtle along the U.S. 90/98 causeway, including Meaher State Park, the ADCNR property, and Big Island (Nelson 2001). In this area, the State owns over 13,000 acres of mostly natural Delta habitat. Upstream of that area, over 20,000 acres of habitat have been acquired in the Mobile-Tensaw Delta by the U.S. Army Corps of Engineers (COE) under the Tennessee-Tombigbee Waterway Wildlife Mitigation Project, including Gravine Island. The ADCNR is managing these lands as part of the Mobile-Tensaw Delta Wildlife Management Area. Studies funded by these agencies are currently being conducted to develop information that will assist in management and protection of the Alabama red-bellied turtle (Service, 2000). Until such work is completed, the species population size is not known, nor are several factors related to the resilience of the turtle; therefore a recovery rate cannot be determined.

Continuation of a systematic sampling program is needed to conclusively determine several biological aspects of this species, including nesting areas, feeding habitats, food sources, major threats to biological success, population size, population structure, population sex ratio, reproductive success, and movement. Until additional research is completed, the recovery rate for the species is not determinable.

Direct Effects of the Proposed Action: Direct effects to the species could occur as a result of being crushed by work barges being lowered into the water or otherwise relocated (as well as from actions associated with this particular operation), or by equipment movement or placement in the upland staging areas. Work barges being maneuvered into place during the winter months may directly impact estivating turtles by crushing. During this period of winter estivation, the turtle is most vulnerable because it cannot avoid the dangers of the proposed action. The potential exists for land vehicles associated with the project to crush turtles that may be traveling to and from the nest. In addition to crushing from equipment traffic, upland staging areas present potential impacts to nesting activities by restricting access to nesting areas, destroying existing nests by crushing the eggs of over-wintering turtles and the killing of hatchlings as they return to the water.

We have serious reservations about the practicality of positioning barges between the existing bridge spans without dredging. The water depth between the spans east and west of Apalachee River are extremely shallow, even at high tide. A shallow draft boat cannot maneuver between the spans in this section. We, therefore, are concerned that dredging may be required to place barges between the spans in this area. This biological opinion does not address dredging, pipeline placement, or dredged material disposal areas. If dredging is required FHWA will need to request re-initiation of formal consultation to address potential adverse effects associated with dredging activities.

Due to project-caused shading, the permanent loss of 14 acres of submerged aquatic vegetation and 6.5 acres of emergent wetlands used by the turtle and located between the existing east-west lanes of Interstate 10 will occur.

Species' Response to the Proposed Action: Based on the above discussion, adverse affects are expected, given the scope of the project area and the habitat available to the species in Upper Mobile Bay. However, there are some unknown impacts associated with bridge construction on aquatic turtles. The particular sensitivity of turtles to bridge construction is unknown. It is also unknown whether turtles would exhibit avoidance behavior near project temporary work areas.

Gulf sturgeon (*Acipenser oxyrinchus desotoi*)

Species description: The Gulf sturgeon is a subspecies of the Atlantic sturgeon (*Acipenser oxyrinchus*). It is a large, primitive, bony fish with a sub-cylindrical body imbedded with bony plates or scutes. The snout is greatly extended and bladelike with four fleshy chin barbels in front of the mouth (Vladykov 1955; Vladykov and Greeley 1963). Adults range from 1.8 - 2.4 m (six to eight ft) or more in length, with adult females larger than males. The Gulf sturgeon has a longer head, pectoral fins, and spleen than the Atlantic sturgeon. Gulf sturgeon are anadromous, with immature and mature fish annually migrating into freshwater streams. Spawning is believed to occur in stream reaches having deep water and clean (rock, gravel or sand) bottoms. The eggs are sticky and adhere in clumps or strings to snags, outcroppings or other clean surfaces. Subadults and adults spend six to nine months each year in rivers and three to six of the coolest months (September - March) in estuaries or the Gulf of Mexico. It appears that sturgeon less than two years old reside in lower reach riverine habitats and estuaries throughout the year (Foster and Clugston, 1997).

The Service and the National Marine Fisheries Service designated the Gulf sturgeon as a threatened species under the ESA on September 30, 1991 (Service 1991). Historically, Gulf sturgeon occurred in the Gulf of Mexico from the Mississippi River to Tampa Bay, Florida (Wooley *et al.* 1982). Gulf sturgeon occurred in most major river systems from the Mississippi River to the Suwannee River, Florida.

Life History: The movements of Gulf sturgeon in the Apalachicola, Suwannee, Pearl and Choctawhatchee Rivers have been and continue to be monitored by ultrasonic and radio telemetry and by conventional fish sampling gear (Foster 1993; Carr 1983; Wooley and Crateau 1985). In general, subadult and adult Gulf sturgeon begin to migrate into rivers from the Gulf of Mexico as river temperatures increase to about 16 to 23° C (60.8 to 75.0° F). They continue to immigrate through early May, but most arrive when temperatures reach 21° C. Subadult and adult Gulf sturgeon in the Suwannee and Apalachicola Rivers generally begin downstream migration in late September and October (Service 1991). Most return to the estuaries or the Gulf of Mexico by mid-November to early December (Service 1991). Based on mark-recapture data, these young fish did not appear to venture far into the Gulf of Mexico. Tagging studies from the fall of 1996 through May 1998 in Choctawhatchee Bay showed that all age 4 fish and 78% of all sub-adult tagged Gulf sturgeon remained in Choctawhatchee Bay the entire winter. A 1993 study noted that estuarine seagrass beds with mud and sand substrates appear to be important winter habitats for Gulf sturgeon where most feeding is thought to occur. The Gulf Sturgeon Recovery/ Management Plan indicates that Gulf sturgeon less than two years old may remain in riverine habitats and estuarine areas throughout the year. Based on the above information, we believe that juvenile, sub-adult and adult Gulf sturgeon could occur within the project area during the construction of the bridges. There were two sitings of Gulf sturgeon in Mobile Bay during 2002. It is not known whether Gulf sturgeon in Mobile Bay and its drainage basin undertake similar migrations and use the estuary and rivers in a manner similar to that reported elsewhere. Evidence from incidental captures and strandings indicate that some Gulf sturgeon use Mobile Bay well into the summer (see below).

Adult fish feed almost entirely on invertebrates in the estuarine-marine environment during the three to four winter months, then enter freshwater where they do not feed for the following eight or nine months (Mason and Clugston 1993). Limited stomach analyses from Suwannee and Apalachicola River Gulf sturgeon indicate that mud and sand bottoms and seagrass communities are probably important marine habitats for Gulf sturgeon (Mason and Clugston 1993). In the spring, immigrating subadult and adult Gulf sturgeon collected from the river mouths contained gammarid and haustoriid amphipods, as well as, other amphipods, polychaete and oligochaete annelids, lancelets and brachiopods. Small Gulf sturgeon (0.5 to 4.0 kg) (1.1 to 8.8 lb) collected at the mouths of these rivers during the winter and early spring contained amphipod and isopod crustaceans, oligochaetes, polychaetes, and chironomid and ceratopogonid larvae.

Population dynamics: Tagging studies indicate sturgeon are closely associated with, and tend to return to the river where they were spawned. Due to this strong affinity, it is believed that there is very little, if any, exchange of genetic material between sturgeon in different river systems. A study of mitochondrial DNA of Gulf sturgeon from geographically distinct drainages, supports the results of these tagging studies that indicate genetic differences among Gulf sturgeon stocks

(Stabile *et al.* 1996). Based on fish tissue samples from the Pearl River and Lake Pontchartrain, DNA analyses indicate that Gulf sturgeon in that area are genetically distinct from those in other Gulf river systems (Suwannee, Apalachicola, Ochlockonee, Blackwater, and Choctawhatchee) fish tissues were analyzed (Foster 1993; Carr 1983; Wooley and Crateau 1985).

Comparison of historic information and current data indicates that Gulf sturgeon populations are substantially reduced from historic levels (Wooley and Crateau 1985). This decline was likely caused by over-exploitation and was exacerbated by damming of rivers coupled with other forms of habitat destruction and water quality deterioration (Huff 1975). Navigation activities, including dam construction, dredging, dredged material disposal and other maintenance actions could adversely affect Gulf sturgeon habitats depending on the location and timing of the activity.

Status and distribution: Gulf sturgeon range from Lake Pontchartrain in Louisiana to Tampa Bay in Florida. The fish still occurs, at least occasionally, throughout this range, but in reduced numbers from the pre-settlement era. The Gulf sturgeon is essentially confined to the eastern Gulf of Mexico. Gulf sturgeon stocks have been greatly reduced or extirpated throughout much of the historic range by over fishing, dam construction and general habitat degradation. The Gulf sturgeon has historically been of commercial importance, with the eggs used for caviar, the flesh for smoked fish, and the swim bladder yielding isinglass, a gelatin historically used in food products and glues. While historic catches peaked about the beginning of the twentieth century, they have decreased drastically since that time. The decline was initially due to over fishing, but subsequent dam construction has impacted habitat and eliminated or reduced some populations in more recent years.

Effects of the Action

Factors to be Considered: We have determined that the proposed work would not affect the Gulf sturgeon in their fresh water life stages. Sturgeon use of this area is based on information from other areas and there are no known environmental constraints that would restrict sturgeon use to a small confined part of Mobile Bay that would be affected by bridge construction. Also, ALDOT has indicated that construction methods and equipment/vessel staging activities should not block passage of sturgeon through the construction area.

Species Response to the Proposed Action: Based on the small footprint of the project area and considering the amount of total surface area available, we do not believe the proposed project would adversely affect this species. The habitat impacts resulting from this project with regards to the Gulf sturgeon will be temporary in nature. Based on the proposed action and the distribution and mobility of the Gulf sturgeon, we do not believe that any sturgeon will be taken by this proposed action.

V. CUMULATIVE EFFECTS: Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Endangered Species Act. Based on the best available commercial and scientific data available for these species, the Service is unable at this time to identify cumulative impacts to these species.

VI. CONCLUSION: After reviewing the current status of the Alabama red-bellied turtle, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the proposed action is not likely to jeopardize the continued existence of this species. No critical habitat has been designated in the action area for this species, therefore, none will be affected. We have reviewed the proposed action in light of the aggregate effects of everything that has led to this species' current status and those things likely to affect this species in the future. Actions that jeopardize the continued existence of a species are those that reasonably would be expected to directly or indirectly reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of the species.

No adverse affects are expected to occur regarding the Gulf sturgeon.

VII. INCIDENTAL TAKE STATEMENT: Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described as Terms and Conditions below are non-discretionary, and must become binding conditions of any grant or permit issued to the Alabama Department of Transportation, as appropriate, for the exemption in section 7(o)(2) to apply. The Federal Highway Administration has a continuing duty to regulate the activity covered by this Incidental Take Statement. If the Federal Highway Administration: (1) fails to assume and implement the terms and conditions or, (2) fails to require the ALDOT to adhere to the terms and conditions of the Incidental Take Statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the ALDOT must report the progress of the action and its impact on the species to the Service as specified in the below Terms and Conditions.

The Service anticipates incidental take of the red-bellied turtle will be difficult to detect because the incidental take will likely be crushing the turtle into the sediment by the barges. However, incidental take is given for the turtles that may be found in the defined action area. Therefore, incidental take would be exceeded if the project changes the proposed use of the barges.

VIII. EFFECTS OF THE TAKE: In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species when the reasonable and prudent measures identified below are implemented.

IX. REASONABLE AND PRUDENT MEASURES: The Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize impacts to the Alabama red-bellied turtle. These terms and conditions are non-discretionary.

1. Work areas within the defined project area should be fenced to exclude red-bellied turtles.

2. All equipment staging areas located along U.S. Highway 90/98 (Causeway) will be selected in cooperation with the Service and fenced to exclude the Alabama red-bellied turtle. Fencing shall be monitored and properly maintained for the duration of the project.

3. Work areas within the project corridor should be cleared of Gulf sturgeon and Alabama red-bellied turtles prior to placing work barges in the enclosures. Work areas that are enclosed with mesh fencing will be cleared daily of turtles or sturgeon that might have entered the area.

4. Catch barges or vehicles shall be used to collect and remove debris resulting from the modification of existing bridge structures.

5. Monitoring for dead, sick, or injured turtles or sturgeon should be conducted on a daily basis.

X. TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, the Federal Highway Administration must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. In those areas where work barges will rest on the bay bottom, mesh fencing or floating silt curtain, with a maximum 2" by 2" mesh, attached to the existing support columns will be used to exclude turtles and sturgeon from the work area. This fencing will be installed prior to leap-frogging barges into place and removed when work in an area is completed.

2. Staging areas are those areas where equipment will be stored overnight or longer periods of time. These areas will be fenced using silt fencing where possible. If fencing is impossible, the areas should be surveyed and cleared before vehicles are moved and all turtles removed and released into adjacent habitats.

3. Prior to placing platform work barges in place, the work areas within the project area will be cleared of sturgeon and turtles by trained personnel familiar with the species and permitted to take these species. Turtles may either be netted and released by hand or the mesh fencing may be opened and the species allowed to leave the enclosure on its own. Alabama redbelly turtles should be sexed, aged, measured and weighed before releasing in suitable habitat outside the project area. Gulf sturgeon should only be removed from the water long enough to photograph for identification.

4. The concrete portions of the existing bridge to be removed will be placed on catch barges or vehicles and later taken into the Gulf for the creation of fish habitat structures. Determining location of these structures should be coordinated with the Alabama Department of Conservation and Natural Resources, Marine Resources Division.

5. Upon locating a dead, injured, or sick individual of an endangered or threatened species, initial notification must be made to the Fish and Wildlife Service Law Enforcement Office at the Daphne Field Office (251-441-5787). Additional notification must be made to the Fish and Wildlife Service Ecological Services Field Office in Daphne, AL at 251-441-5181. Care should be taken in handling sick or injured individuals and in the preservation of specimens in the best possible state for later analysis of cause of death or injury.

Conservation Recommendations

Section 7(a)(1) of ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. The Federal Highway Administration in concert with the Alabama Department of Transportation should install modified guardrails along U.S. Highway 98/90 (causeway) to prohibit red-bellied turtles access to the roadway. Turtles and other wildlife are killed annually crossing this roadway.

2. Wildlife caution/information crossing signs should be posted along the causeway to educate and alert the public to the presence of the Alabama redbelly turtle.

3. Efforts to breach the causeway with elevated roadways allowing for a return of more natural flows and flushing of the Upper Mobile Bay should be studied with regards to the benefit to the environment.

4. The impacts to submerged aquatic vegetation and emergent wetland as a result of this project should be mitigated. Mitigation should include restoration or creation of similar type habitats as close to the impact site as possible.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification regarding implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the action outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending re-initiation.

We appreciate the cooperation of your staff in the preparation of this Biological Opinion. We look forward to working closely with you in implementing its provisions. If you have any questions about this opinion, please contact Bruce Porter of my staff at (251)441-5864.

Sincerely,

Larry E. Goldman
Field Supervisor

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