

**SR 123 Widening
From SR 85 South to SR 85 North
Federal Highway Administration
Eglin Air Force Base
Okaloosa County, Florida**

**Biological Opinion
March 30, 2012**

**Prepared by:
U.S. Fish and Wildlife Service
1601 Balboa Avenue
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ACRONYMNS

Act	Endangered Species Act
AFB	Air Force Base
BA	Biological Assessment
BMPs	Best Management Practices
BO	Biological Opinion
BRAC	Base Realignment and Closure
Eglin AFB	Eglin Air Force Base
ETDM	Efficient Transportation Decision Making
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FIHS	Florida Interstate Highway System
FHWA	Federal Highway Administration
FWC	Florida Fish and Wildlife Conservation Commission
FY	Fiscal Year
HUC	Hydrologic Unit Code
INRMP	Integrated Natural Resource Management Plan
IPCC	Intergovernmental Panel on Climate Change
LOS	Level of Service
MBBA	Mid-Bay Bridge Authority
NEPA	National Environmental Policy Act
NRS	Natural Resource Section

NPDES	National Pollution Discharge Elimination System
PD&E	Project Development and Environment
ROW	Right-of-Way
Service	U.S. Fish and Wildlife Service
SIS	Strategic Intermodal System
TNC	The Nature Conservancy
USAF	United States Air Force
USGS	U.S. Geological Survey
WBID	Water Body Identification



IN REPLY REFER TO:

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March 30, 2012

Mr. Martin C. Knopp
Division Administrator
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Attn: Ms. Linda Anderson

Re: FWS Log No. 2012-F-0015
Agency: Federal Highway Administration
Project Title: SR 123 Widening
From SR 85S to SR 85N
FPID: 411102-1
Location: Tom's Creek and Turkey Creek
Basins, Eglin AFB, FL
Ecosystem: NE Gulf of Mexico
County: Okaloosa County, FL

Dear Mr. Knopp:

This letter transmits the Fish and Wildlife Service's (Service) biological opinion (BO) for actions to be taken during the widening of SR 123 from a two-lane undivided roadway to a four-lane divided facility, in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). It also provides considerations in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 1531 et seq.). Your letter requesting formal consultation was received on November 22, 2011. Our BO is based on information provided in the biological assessment (BA), your responses to our requests for additional information, Service investigations in the project area, discussions with experts in the field, and other sources of information. A complete administrative record of this consultation is on file at the Service's Panama City, Florida field office.

This BO refers only to the potential effects of the proposed widening of SR 123 on the threatened Okaloosa darter (*Etheostoma okaloosae*) and its habitat. No critical habitat has been designated for this species. Table 1 identifies other federally listed species occurring within the Action Area. Provided that all proposed avoidance and minimization measures are followed, the Service concurs with the Federal Highway Administration (FHWA) determination that road construction activities are not likely to adversely affect the Eastern indigo snake (*Drymarchon*

corais couperi). The FHWA has also determined that the following species do not occur in the action area and the proposed work will have no effect on them: the reticulated flatwoods salamander (*Ambystoma bishopi*), red-cockaded woodpecker (*Picoides borealis*), Gulf sturgeon (*Acipenser oxyrinchus desotoi*), and wood stork (*Mycteria americana*). These species will not be discussed further in this BO.

Table 1. Other Federally Protected Species Evaluated for Effects.

Species	Present in Action Area	Effects Determination
Eastern indigo snake	Yes	Not Likely to Adversely Affect

An assessment was also made for the bald eagle (*Haliaeetus leucocephalus*), protected under the Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. 668-668c). No bald eagles or their nests have been documented in the area since 1999. The bald eagle nest database will be re-evaluated by FDOT prior to construction. Therefore, FHWA believes that the action will have no effect on the bald eagle.

Consultation History

<u>September 11, 2007</u>	The Service provided initial comments on the proposed widening of SR 123 during the Florida Department of Transportation's (FDOT) Efficient Transportation Decision Making (ETDM) process. The potential to impact the Okaloosa darter was identified.
<u>November 28, 2007</u>	An environmental coordination meeting was held at Eglin Air Force Base (AFB) to discuss the proposed project. ETDM comments were discussed, including potential effects to federally protected species.
<u>March 10, 2008</u>	An environmental coordination meeting was held at Eglin AFB to discuss the SR 123 Project Development and Environment (PD&E) study that included staff from FDOT and their consultants, Eglin AFB, and the Service. Measures to protect stream geomorphology and reduce impacts to Okaloosa darter habitat were discussed.
<u>January 16, 2009</u>	The Service indicated the proposed project may have substantial effects to the Okaloosa darter during a second round of comments in FDOT's ETDM process.
<u>February 3, 2009</u>	As the agent for FHWA, the FDOT requested concurrence with their determination that the proposed project "may affect, but is not likely to adversely affect" resources protected under the Act.
<u>March 4, 2009</u>	A meeting was held at Jackson Guard, Eglin AFB, with FDOT and their consultants, Eglin Natural Resource Section staff, Florida Fish and Wildlife Conservation Commission (FWC) and the Service to discuss the National Environmental Policy Act (NEPA) process, effect determination,

and avoidance/minimization/compensatory measures for the Okaloosa darter. The group agreed that the proposed action “may adversely affect” the Okaloosa darter.

March 12, 2009

The Service provided a letter to the FDOT concurring with their effect determination that the proposed work “may affect, but is not likely to adversely affect” species protected under the Act, with the exception of the Okaloosa darter. We recommended formal consultation for the Okaloosa darter, and provided potential measures to reduce and offset impacts to the darter and its habitat.

May 28, 2009

A conference call was held with FDOT, their consultants, and the Service to discuss the BA and measures to avoid, minimize, and offset impacts to the Okaloosa darter. Three options were discussed to replace the culvert at the unnamed tributary to Turkey Creek: 1) replacing the culvert with a bridge; 2) extending the existing culvert; and 3) replacing the existing culvert and adding a new culvert. The latter was identified by FDOT as their preferred option; the new culvert would be bottomless (3-sided) to conform to Eglin requirements for culverts on Okaloosa darter streams.

February 9, 2010

A meeting was held at Jackson Guard, Eglin AFB, with the FDOT and their consultants, the Service, FWC, and Eglin AFB to discuss the draft BA, effect determination for the Okaloosa darter, and replacement of the culvert crossing at the unnamed tributary to Turkey Creek. The pros/cons of a bridge (preferred by the Service), bottomless culvert (not supported by the FDOT drainage team), and a recessed 4-sided culvert (not supported by Eglin AFB) were discussed.

March 2, 2010

The FDOT provided an email to the Service outlining concerns with, and requesting guidance on, including a bridge option in the BA in addition to the 3-sided culvert and 4-sided culvert options at the unnamed tributary to Turkey Creek.

March 4, 2010

The Service provided an email to the FDOT in response to their request for clarification that indicated both the 3- and 4-sided culverts were feasible options for replacing the culvert at the unnamed tributary to Turkey Creek provided that the 4-sided culvert is deeply buried and could maintain a natural substrate bottom. We continued to recommend including a bridge option which would: prevent the loss of additional linear feet of darter habitat; provide stream habitat restoration; and potentially result in wetland mitigation credit.

October 20, 2010

The Service received the September 2010 BA and a request to initiate formal consultation from the FHWA.

- November 10, 2010 The Service acknowledged initiation of formal consultation.
- December 14, 2010 The Service gave preliminary comments and requested additional information by email to Alan Vann, FDOT, on the BA. A preferred alternative was not identified in the BA; the Service recommended delaying formal consultation until the Public Hearing for NEPA is complete and a preferred alternative is selected.
- January 5, 2011 The FDOT provided a letter to the Service agreeing to delay formal consultation until a decision on the preferred alternative is reached through NEPA.
- March 10, 2011 Eglin AFB sent a memorandum to the FHWA indicating that as the landowner and a cooperating agency their preferred method to cross the unnamed tributary of Turkey Creek is a bridge span. This option is most compatible with darter recovery efforts.
- July 5, 2011 The Service received a revised BA (May 2011) and the FHWA's request to initiate formal consultation by letter dated June 29, 2011.
- July 14, 2011 The Service provided a letter to FHWA to document recent email and telephone discussions where all parties agreed to delay initiating formal consultation until after a preferred alternative had been selected during the NEPA process.
- November 22, 2011 The Service received a request to initiate formal consultation from FHWA by letter dated November 18, 2011 for the widening of SR 123. FHWA indicated that Alternative 3 (west-shift) was the NEPA preferred alternative.
- November 29, 2011 The Service indicated that all information needed to initiate formal consultation was provided or is otherwise available to the Service.

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

The Florida Department of Transportation (FDOT) proposes to widen SR 123 between SR 85S and SR 85N from a two-lane rural undivided roadway to a four-lane divided facility with paved shoulders for a distance of about five miles. A grade-separated interchange will be constructed at the intersection of SR 85N and SR 123N. The project is located within the Eglin Air Force Base (AFB) reservation in Okaloosa County, Florida. The widening includes the construction of new two-lane bridges at Tom's Creek and Turkey Creek. During construction of the new bridges, traffic will use the existing bridges. The stream crossing at the unnamed tributary to Turkey Creek currently has a 10-foot by 6-foot by 156-foot long box culvert. This culvert is

heavily silted, obstructing fish movement and affecting stream conditions both upstream and downstream of the location. To avoid impacts to the Okaloosa darter and improve habitat, two 75-foot single span bridges are proposed for replacing the culvert.

The FDOT will use a standard four-lane rural typical section with a 64-foot median. Drainage will be provided in the median, roadway ditches, and at stormwater ponds. A public hearing was held and public comment period has been completed for this project. This consultation will address the recommended preferred alternative, Alternative 3, which is a west-shift and locates the future northbound lanes over the existing lanes. This alternative avoids conflicts with existing utilities (30-inch water main and fiber optic cable).

Purpose and Need

The purpose of the project is to improve capacity and safety along an existing bypass corridor. SR 123 facilitates access between the Fort Walton Beach/Eglin AFB area to the south and the Crestview area to the north. SR 123 is a Strategic Intermodal System (SIS) corridor, and is part of the Florida Intrastate Highway System (FIHS). It is also a Hurricane Evacuation Route.

The existing roadway is a rural two-lane undivided highway with two alternating sections of passing lane. The existing lanes are twelve feet in width, with eight-foot graded shoulders, including five-foot paved shoulders. The Level of Service (LOS) standard for SR 123 is LOS C. The roadway is currently operating at LOS D in the off-peak direction and LOS F in the peak direction with an average of LOS F for the two directions. By 2013 and 2033, the average LOS for the project alignment is expected to be LOS F if no improvements are made. These periods of LOS F are expected to increase in duration as traffic volumes increase.

Growth in the area is expected to increase as a result of the 2005 Base Realignment and Closure (BRAC) Commission decision to expand Eglin AFB's military mission to house the Joint Strike Fighter Integrated Training Complex, and the U.S. Army's 7th Special Forces Group and the Defense Threat Reduction Agency. Crash data from FDOT's District 3 Safety Program Manager indicates SR 123 is experiencing more accidents than expected for this type of facility. The distribution of crashes indicates a disproportionate amount of rear-end crashes, a problem typically associated with insufficient capacity on a two-lane roadway.

Action Area

The Action Area is defined at 50 CFR 402 to mean "all areas affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." Therefore, the Action Area may be larger than the construction limits of the project. The impact radius for roads is variable, depending on the ecological factor under consideration and the habitat the road traverses (Forman et al. 2003). For example, sediment can affect stream habitat and fish populations for downstream distances of 1,000 meters (3,280 feet) and greater from a road or bridge. Effects on wildlife (woodland birds, snakes, and deer) due to traffic disturbance, noise, and vibrations from a moderately busy road can extend from 300 to 1,000 meters (984 to 3,280 feet). Other broad-scale ecological landscape effects (habitat fragmentation, fish barrier, disrupted wildlife movement corridors, human access impacts) can extend well beyond 1,000

meters (3,280 feet). The Action Area for this biological opinion is (1) the 400-foot corridor; (2) 1,000 meters (3,280 feet) on either side of the corridor; and (3) downstream to the extent of the 16-digit hydrologic unit code (HUC) watershed where the road crosses streams. The use of bridges at Okaloosa darter stream crossings, environmentally-sensitive bridge construction techniques, use of Best Management Practices (BMPs) for water quality protection, and other conservation measures are expected to minimize the zone of influence for the project. The Action Area encompasses approximately 1,571.2 acres.

Conservation Measures

Conservation measures are actions to benefit or promote the recovery of a listed species that are included by the Federal agency as an integral part of the proposed action. These actions will be taken by the Federal agency or applicant and serve to minimize or compensate for project effects on the listed species. The BA states that the FDOT will implement the following avoidance and minimization measures to reduce impacts to the Okaloosa darter:

1. New bridges at Tom's Creek and Turkey Creek shall be designed to span bankfull plus 10% as quantified in the BA and to avoid in-stream pier placement. In the event in-stream pier placement cannot be avoided with standard design and cost feasible construction, piers at a minimum shall mirror the existing bridges and the pier location shall be coordinated with the Service to minimize stream impacts.
2. The existing culvert at the unnamed tributary will be replaced with a single span bridge structure to avoid stream impacts and provide potential access to upstream habitat. Construction at the unnamed tributary to Turkey Creek will span bankfull plus 10% as quantified in the BA and avoid in-stream pier placement.
3. It is anticipated that bridge construction will be accomplished at-grade with ground-based construction. However, within wetland limits and along stream banks, work will be accomplished from temporary access structures. Following construction, temporary access structures will be removed and disturbed areas will be restored.
4. Runoff will be conveyed to stormwater ponds where practical for treatment before discharging to Tom's Creek, Turkey Creek, or the unnamed tributary to Turkey Creek. Location of stormwater ponds will be coordinated with Eglin Natural Resources Section and the Service.
5. Runoff from the bridges will be conveyed and discharged to surrounding floodplains to allow overland or swale flow before entering streams, avoiding direct discharge to the streams.
6. Staging and storage areas shall be coordinated with Eglin Natural Resources Section and the Service prior to construction to avoid environmentally sensitive areas.
7. BMPs will be implemented to minimize impacts to wetlands, surface waters, and soils in compliance with NPDES. During design, an erosion and sediment control plan will be coordinated with Eglin Natural Resources Section and the Service.

8. A stream restoration will be performed along the bed of the existing culvert proposed for removal at the unnamed tributary to Turkey Creek to establish and reconnect habitat. Stream restoration will be coordinated with the Eglin Natural Resources Section and the Service.

STATUS OF THE SPECIES

Species description

The Okaloosa darter, *Etheostoma okaloosae*, is a small percid fish (maximum size 49 millimeters (mm) (1.93 inches (in) Standard Length) with a well-developed humeral spot, a series of five to eight rows of small spots along the sides of the body, and a first anal spine longer than the second. General body coloration varies from red-brown to green-yellow dorsally, and lighter ventrally, although breeding males have a bright orange submarginal stripe on the first dorsal fin (Burkhead et al. 1992). The brown darter, *Etheostoma edwini*, is similar in size, but the blotched patterns on the sides are not organized into rows and breeding males have bright red spots on the body and fins.

Life history

Longleaf pine-wiregrass-red oak sandhill communities dominate the vegetation landscape in Okaloosa darter watershed basins. These areas are characterized by high sand ridges where soil nutrients are low and woodland fire is a regular occurrence. Where water seeps from these hills, acid bog communities of sphagnum moss (*Sphagnum* sp.), pitcher plants (*Sarracenia* sp.), and other plants adapted to low nutrient soils develop. In other areas, the water emerges from seepage springs directly into clear flowing streams where variation of both temperature and flow is moderated by the deep layers of sand. The streams support a mixture of bog moss (*Mayaca fluviatilis*), bulrush (*Scirpus etuberculatus*), golden club (*Orontium aquaticum*), burr-weed (*Sparganium americanum*), pondweed (*Potamogeton diversifolius*), spikerush (*Eleocharis* sp.), and other aquatic and emergent plants.

Okaloosa darters typically inhabit the margins of moderate to fast flowing streams where detritus, root mats, and vegetation are present. They are only rarely collected in areas where there is no current or in open sandy areas in the middle of the stream channel. The creeks with Okaloosa darters are generally shaded over most of their courses. The water is cool with temperatures ranging from 44° to 72° Fahrenheit (F) (7° to 22° Celsius (C)) in the winter (Tate 2008 pers. comm.; Jelks 2010 pers. comm.) to 72° to 84° F (22° to 29° C) in the summer (Mettee and Crittenden 1977; Jelks 2010 pers. comm.).

Okaloosa darters feed primarily on fly (Diptera) larvae, mayfly (Ephemeroptera) nymphs, and caddis fly (Trichoptera) larvae (Ogilvie 1980, as referenced in Burkhead et al. 1992). The breeding season extends from late March to October, although it usually peaks in April to June. Spawning pairs have been videographed attaching one or two eggs to vegetation, and observed attaching eggs to woody debris and root mats (Burkhead et al. 1994; Collete and Yerger 1962). Ogilvie (1980, as referenced in Burkhead et al. 1992) found a mean of 76 ova (unfertilized eggs) and 29 mature ova in 201 female Okaloosa darters, although these numbers may under-represent

annual fecundity as the prolonged spawning season is an indication of fractional spawning (i.e. eggs develop and mature throughout the spawning season). Estimates of longevity range from two to five years (Burkhead et al. 1992; Tate 2008 pers. comm.; Jordan 2010 pers. comm.).

Population Abundance

The Service had no estimate of population size at the time of listing, though the historic range of the Okaloosa darter is fairly well documented. Relative abundance estimates were determined annually from 1987 to 1998 while monitoring increases in sprayfield loading at Eglin AFB. Bortone (1999) compared the relative abundance (number per sampling hour) of darters at 16 to 18 stations over 10 sampling seasons. The overall number of darters was similar over the ten-year sampling effort, with the mean number of Okaloosa darters per sample (in those samples that yielded darters) slightly lower in the earlier sampling period (1987 to 1991), higher during the middle sampling years (1992 to 1997) and distinctly lower in 1998 and 1999. Bortone (1999) concluded that this may not have indicated an overall trend in the reduction in Okaloosa darters as much as it may be indicative of changes that specifically reduced preferable habitat and increased sampling effectiveness at certain sites, as several sites were altered by beaver activity while others became more rooted with undergrowth. Generally, the data do not indicate any overall major trends in decline or increase during the ten-year sampling period (Bortone 1999).

The U.S. Geological Survey (USGS) and cooperators have surveyed between 12 and 60 sites for Okaloosa darters annually since 1995, primarily using visual counts in 20-m (66-ft) segments. Overall, their data indicate the population is increasing. Darter numbers have more than doubled over approximately 17 years, from an average of about 25 darters per 20-m (66-ft) segment sampled in 1995 to about 53 darters per segment in 2011 (Jordan and Jelks 2011). A dip in the increasing trend occurred in 2001-2002, 2006-2008, and 2010, which corresponded with years of regional drought conditions. Even during these years, however, darter numbers were almost double those of 1995 and 1996. The long-term trend in abundance at all long-term monitoring locations is stable or increasing, with the exception of Toms Creek (Jordan and Jelks 2011).

There have been several population estimates calculated based on data collected in 2004 and 2005. The Service applied Jordan and Jelks' (2004) average densities in each of the six Okaloosa darter basins (range 0.7–4.5 darters per meter (3.28 feet)) to our estimates of occupied stream length (260,661 m total) for a total range-wide population estimate of 802,668 darters (Service 2007). Because there is considerable variation in Okaloosa darter abundance, we were concerned these estimates could be inflated if darter abundances were lower in unsampled portions of their range. Jordan and Jelks conducted additional sampling at more locations in 2005. They measured segments of stream between sampling sites, multiplied the length of each stream segment by the average darter density within the segment, and summed the results for a total estimate of 822,500 darters (95% confidence interval of 662,916 and 1,058,009) within roughly 50% of the 263 km of habitat occupied by Okaloosa darters (Jordan and Jelks 2005). The Service also estimated the population size using seine data collected in 2004-2005; however, results of Jordan et al. (2008) indicate that seines should not be used to obtain abundance data. For the purposes of this consultation, we rely on the more conservative range-wide population estimate of 802,668.

Okaloosa darters appear to have expanded their ranges in two areas, one in Mill Creek following habitat restoration activities in 2007, and the other in a one to two-mile expansion in the southwestern tributary of Tom's Creek previously thought to be uninhabited. The annual population monitoring by USGS detected young-of-the-year and adult fish in all six stream systems from 2001 to 2006 (Service 2007).

Status and distribution

The Okaloosa darter is known to occur in only six clear stream systems that drain into two Choctawhatchee Bay bayous (Boggy and Rocky) in Walton and Okaloosa counties in northwest Florida. They have only been found in the tributaries and main channels of Toms, Turkey, Mill, Swift, East Turkey, and Rocky Creeks. Approximately 90 percent of the 457 square kilometer (km²) (176 square mile (mi²)) watershed drainage area is under the management of Eglin Air Force Base (Eglin AFB), and we estimate that 98.7 percent of the darter's extant range is within the boundaries of Eglin AFB. The remainder of the watershed and extant range is within the urban complex of Niceville and Valparaiso (USAF 2006).

The Service proposed listing of the Okaloosa darter as endangered on January 15, 1973 (38 FR 1521) and listed the species as endangered under the Act on June 4, 1973 (38 FR 14678) due to its extremely limited range, habitat degradation, and apparent competition from a possibly introduced related species, the brown darter. Critical habitat has not been designated for this species. A 5-year status review was conducted in 2007 (<http://www.fws.gov/southeast/5yearReviews/>) and the Panama City Field Office recommended downlisting the species' classification to threatened as a result of substantial reduction in threats to the species, a significant habitat restoration in most of the species' range, and a stable or increasing trend of darters in all darter stream systems. We reclassified the Okaloosa darter as threatened on April 1, 2011 and promulgated a special rule under section 4(d) to allow Eglin AFB to continue activities with a reduced regulatory burden and a net benefit to the Okaloosa darter (76 FR 1808). Delisting may be considered when (1) historic habitat of all six streams have been restored; (2) cooperative and enforceable agreements to protect habitat, water quality and stream flows are in effect; and (3) monitoring shows the populations in all six stream systems remain stable or increasing for a 20-year hydrologic cycle.

Threats

The Okaloosa darter was listed in 1973 because of its extremely limited range and potential problems resulting from erosion, water impoundment, and competition with brown darters. We no longer consider the brown darter to be a threat to the species (76 FR 1808). The Okaloosa darter has been extirpated from only about 9 percent of the 402 km (249.8 mi) of streams that comprise its total historical range. This historic loss of range is most likely due to physical and chemical habitat degradation from sediment and pollutant loading and the urbanization of the City of Niceville.

Recent surveys in a southwestern tributary of Toms Creek, however, have found darters in a one to two-mile stretch of stream previously thought to be uninhabited. All but 5 km (3.1 mi) or 1.3 percent of the extant range is also currently within Eglin AFB.

Sedimentation and Erosion

Sediment loading is perhaps the most intense and uniform factor continuing to threaten the darter. A recent report (Rainer et al. 2005) identified the following primary sources of sediment to aquatic ecosystems on Eglin AFB: accelerated streamside erosion, borrow pits (area where materials like sand or gravel are removed for use at another location), developed areas, land test areas, silviculture and roads. Of these, the stream crossings of unpaved roads and subsequent bank erosion probably have the greatest impact because of their distribution on Eglin AFB, relative permanence as base infrastructure, and long-term soil disturbance characteristics. The largest remaining source of sediment input to darter streams is the unpaved road network. As of 2005, 87 percent (4,348 km or 2,701.7 mi) of Eglin's road network were unpaved. However, as of 2006, Eglin AFB had completed about 95 percent of the erosion control projects identified in darter watersheds, substantially reducing runoff and sedimentation (USAF 2006). Although many road crossings have been removed and restored through road closures and restoration efforts over the last few years, others remain and pose a threat to darters and their habitat. For example, five road crossings in the Turkey Creek drainage have repeatedly exceeded state water quality standards for turbidity.

Borrow pits were a major source of sediment loading to darter streams cited in the 1998 darter Recovery Plan. At that time, 29 of 39 borrow pits located within or immediately adjacent to Okaloosa darter drainages had been restored. As of 2004, all of the remaining borrow pits within Okaloosa darter drainages have been restored (Rainer et al. 2005). Of the 153 road crossings that previously existed in Okaloosa darter drainages, 57 have been eliminated - 28 in Boggy Bayou streams and 29 in Rocky Bayou streams. As stated previously (Recovery Action 1), Eglin estimates that these and other restoration efforts have reduced soil loss from roughly 69,000 tons/year in darter watersheds in 1994 to approximately 2,500 tons/year in 2010 (Pizzolato 2010 pers. comm.). The Service believes sedimentation remains a threat to the Okaloosa darter, but that Eglin AFB's habitat restoration work has improved darter habitat within the base. Improvements like bottomless culverts, bridges over streams, and bank restoration and re-vegetation have resulted in increased clarity of the water, stability of the channel and its banks, and expansion of darters into new areas within drainages.

Primarily in the downstream most portion of the darter's range, urban development and construction activity pose a threat to the darter due to poor stormwater runoff control and pollution prevention measures which degrade habitat and may pose potential barriers to movement between basins (Service 2007). This threat is mostly present in the 5 km (3.1 mi) of habitat off Eglin AFB.

Eglin AFB and Its Programs

Eglin AFB is a training facility and as such is divided into 37 land test areas where weapons testing and training operations are conducted, 12 of which are wholly or partially within darter drainages (SAIC 2001). Eglin AFB maintains large portions of the test areas in an early stage of plant succession with few mature trees and varying degrees of soil disturbance as a result of maintenance or military missions. Since 1998, only one section 7 consultation with Eglin related to test area activities has resulted in the issuance of an incidental take permit. There is a proposal to increase the military personnel and use at Eglin through the 2005 Defense BRAC. The BRAC action involves establishing the Joint Strike Fighter Integrated Training Center and relocating the

Army 7th Special Forces Group (Airborne) to Eglin AFB, increasing the number of personnel present on base, the number of test ranges, and the amount of test area activities. The Service has provided preliminary comments on the military's Notice of Intent to Prepare an Environmental Impact Statement and completed formal consultation for other species but not the Okaloosa darter. An increased threat to the Okaloosa darter from this action is not expected as the new ranges have been moved outside of Okaloosa darter habitat and Eglin has agreed to provide a 300-foot buffer along all darter streams when conducting any troop maneuvers.

While poorly designed silviculture programs can result in accelerated soil erosion and stream sedimentation, Eglin has designed its program within darter habitat to avoid and minimize impacts to the aquatic ecosystems such that the program is not likely to adversely affect Okaloosa darter.

Pollution

Pollution other than sedimentation poses a potential threat to darters in three stream segments. While no streams in the darter's range are on the FDEP's (2006) Verified List as impaired, three stream segments are on the "3c Planning List," which means that they "meet criteria and are potentially impaired for one or more designated uses." The three segments are lower Turkey Creek (WBID 495A), Mill Creek (WBID 644), and Shaw Still Branch (WBID 658). All three segments are considered potentially impaired based on biological indicators. Using comparable aquatic insect sampling methods, the Service (Thom and Herod 2005) found 12 sites out of 42 sampled within the darter's range to be impaired. One notable source of pollution in Shaw Still Branch and East Turkey Creek may result from wastewater treatment sprayfields. The Niceville Valparaiso Okaloosa County Sewer Board has recently proposed conversion of the sprayfields to nine rapid infiltration basins. This conversion may impact the hydrology and water quality of East Turkey Creek and Swift Creek and has the potential to negatively influence Okaloosa darters in this basin. The Service is currently working with Eglin AFB and the sewer board to assess these potential impacts.

Water Withdrawals

Water withdrawals for human consumption in and around the range of the Okaloosa darter are presently served by wells that tap the Floridan Aquifer, which is declining in the most populated areas near the coast. At this time there is no evidence that pumping from the aquifer has reduced flows in darter streams. The darter drainages are spring fed from the shallow sand and gravel aquifer that is not used for human consumption. Additionally, the low permeability of the Pensacola Clay confining bed probably severely limits hydraulic connectivity between the two aquifers (Fischer et al. 1994). Therefore, the Service does not anticipate that local population growth would adversely affect water flows in the darter drainages.

Road Development Projects

Road development projects present new potential threats that may negatively impact the Okaloosa darter. The Northwest Florida Transportation Corridor Authority has proposed a new, high-speed toll road that would cross Eglin AFB extending from US 331 in Walton County to SR 87 in Santa Rosa County. It included the Mid-Bay Bridge Authority's (MBBA) Mid-Bay Connector Road, a new road under construction from the terminus of the Mid-Bay Bridge to SR 85 north of Niceville. Although the Connector Road crosses darter drainages, conservation

measures include 19 stipulations that will minimize impacts to darter drainages. For example, the project will use environmentally-sensitive bridge construction techniques, and measures that minimize erosion and ground disturbance at each stream crossing and that maintain channel stability. By designing bridges to maintain natural stream geomorphology, and with the use of appropriate methods to stabilize stream banks and erosion control measures along the stream, long-term erosion and degradation of darter habitat is not anticipated. These new roads would not prevent the implementation of management actions for the Okaloosa darter in Eglin AFB's Integrated Natural Resource Management Plan (INRMP), which provides benefits to the darter.

Climate Change

The Intergovernmental Panel on Climate Change (IPCC) concluded that warming of the climate system is unequivocal (IPCC 2007a). Numerous long-term changes have been observed including changes in arctic temperatures and ice, and widespread changes in precipitation amounts, ocean salinity, wind patterns, and aspects of extreme weather including droughts, heavy precipitation, heat waves, and the intensity of tropical cyclones (IPCC 2007b). While continued change is certain, the magnitude and rate of change is unknown in many cases.

The current occupied range of the darter is restricted to approximately 402 km (249.8 mi) of streams in Walton and Okaloosa counties, Florida. While we acknowledge the general scientific consensus that global scale increases in temperatures have occurred, we do not have sufficient data to determine that climate change poses a significant threat to the Okaloosa darter. Streams within the Okaloosa darter's range are spring-fed, and thus many are thermally moderated. However, thermal mediation varies considerable among nearby Okaloosa darter streams (Jordan 2010 pers. comm.), and some streams that support Okaloosa darters may be relatively more affected by increases in air temperature. We lack the data to evaluate whether increased temperatures in some streams will adversely affect Okaloosa darters. The information currently available on the effects of climate change and the available climate models do not make sufficiently precise estimates of location and magnitude of effects at a suitable scale to apply them to the limited range of the Okaloosa darter. At present, we have insufficient data to determine if climate changes observed to date have had adverse impacts on the Okaloosa darter or its habitat.

Analysis of the species likely to be affected

The proposed action may affect a large portion of the range of the Okaloosa darter; thus, the darter is likely to be affected at the species level. Therefore, the previous discussion under "Status of the Species" applies. Effects covered under the SR 123 road widening consultation include direct effects from site preparation, equipment staging and storage, road and bridge construction activities, placement of stormwater treatment facilities, and indirect effects such as the physical presence of the roadway and bridges, traffic noise/vibrations, increased pollutant loads, and increased human development in Okaloosa darter watersheds. These effects may result in the loss or injury of individuals, loss and/or degradation of Okaloosa darter habitat, reduction in reproductive success, and altered behaviors. The effect of the activities required by the proposed action are covered under this consultation with the understood inclusion of the incorporation of the proposed conservation measures, and with that understanding the affect that this action will have on the Okaloosa darter's overall survival and recovery are considered in this

biological opinion. Other activities that have affected the conservation of the Okaloosa darter are included in the Service's evaluation of the species' current status (**Table 2**).

Table 2. Previous biological opinions completed for the Okaloosa darter.

PROJECT NAME	YEAR	MONITORING REPORTS		PROJECT ACTIVE YES/NO	INCIDENTAL TAKE
		Received	Not Received		
Mission Activities in Eglin Test Area C-74, Eglin AFB	2002	Yes		Yes	6 darters/year
Falcon Golf Course, Pipeline Construction for Reclaimed Water Pond, Eglin AFB	2004		Not required	No	Impaired reproduction of 53 pair for 1 year
Mill Creek Stream Restoration, Eglin AFB	2006		Not required	No	136 darters
Mid-Bay Connector Road	2008		Anticipated post-construction.	Yes	465 darters

ENVIRONMENTAL BASELINE

Status of the Species within the action area

The Action Area crosses two of the six stream systems that support the Okaloosa darter: Toms Creek and Turkey Creek. The status of the darter subpopulation within each stream or tributary crossed by the alignment is indicative of the species' status within the Action Area. Monitoring sites have been periodically surveyed on the streams and tributaries within these watersheds. Most surveys were performed using a 6 ft x 10 ft x 1/8-in-mesh seine for about an hour in 20 to 50 meters of the stream channel; however recent surveys have used direct observation by snorkeling, which is the standard methodology at most of the annual monitoring sites listed in the Recovery Plan. Jordan et al. (2008) have shown that snorkeling detects about 32% more darters than seining. These data are used to determine long-term trends in population stability, occupied habitat, and to estimate population abundance for each stream.

Toms Creek

Toms Creek is the third smallest of the Okaloosa darter watersheds, with a drainage area of 2,074.5 ha (5,123.9 ac). Toms Creek has few tributaries and beaver activity has resulted in braided channels. All but approximately 0.40 km (0.25 mi) of Toms Creek is located on Eglin AFB. Our 2007 5-year status review identified 9.13 km (5.66 mi) of potential Okaloosa darter habitat and 6.53 km (4.05 mi) of occupied habitat (Service 2007). The darters in Toms Creek may be expanding their range. In 2007, darters were collected near a beaver impoundment in a southwestern tributary of Toms Creek previously thought to be uninhabited. Additional data is needed to determine the extent and stability of newly occupied habitat. If Okaloosa darters are established in this tributary, it would represent a range expansion of approximately 2.25 km (1.4 mi). The long-term monitoring site on Toms Creek has experienced a significant long-term

decline in average darter counts from 1995-2011 (Jordan and Jelks 2011); however, the basin had the second highest mean density of darters of the six Okaloosa darter stream systems with 3.8 darters per meter (3.28 ft). Local population abundance was estimated at 24,693 fish (Service 2007).

Historically the stream channel just downstream of SR 123 was been impacted by an abandoned railroad crossing. Unconsolidated fill material created an earthen dam structure across Toms Creek. A 10-foot diameter culvert was located at the base of the fill. Beaver activity in the vicinity of the culvert further impacted stream flow. Beaver control on Eglin is an ongoing conservation measure. Since December 2001, Eglin has captured and removed more than 50 beavers from Okaloosa darter drainages. In 2010, Eglin AFB, the Service, and MBBA restored habitat connectivity by removing 100,000 cubic yards of fill at the railroad crossing, re-creating 68.9 m (226 feet) of stream channel, and creating 0.21 ha (0.52 ac) of floodplain. This work was funded by the MBBA to offset impacts from Phase 2 and 3 of the Mid-Bay Connector Road.

Turkey Creek

Turkey Creek is the second largest of the Okaloosa darter watersheds, totaling 16,856.3 ha (41,635 ac). Looking only at the 16-digit huc where SR 123 crosses Turkey Creek and its unnamed tributary, the drainage area is 6,095.1 ha (15,055.0 ac). Drainage is primarily east-west, likely due to the presence of ancient beach ridges and terraces. The 2007 5-year status review identified 37.02 km (23.0 mi) of potential Okaloosa darter habitat and 26.46 km (16.4 mi) of occupied habitat in the combined Upper and Lower Turkey Creek basins (Service 2007). A 2011 visual survey by Jordan and Jelks (2011) detected about 1.7 darters per meter at a site in Turkey Creek about one mile upstream of the SR 123 crossing (Jordan and Jelks 2011). This value is lower than the mean density of 4.5 darters per meter for the Turkey Creek basin used in the population estimate (Service 2007), but this is not unexpected given the high variation both in sample location and the annual abundance of Okaloosa darters (Jordan and Jelks 2011). Overall, there is an increasing long-term trend in average darter counts in Turkey Creek. Turkey Creek has an estimated local population abundance of 368,945 fish.

The existing 10-foot wide by 6-foot high by 156-foot long box culvert under SR 123 at the unnamed tributary is impacting stream connectivity. The stream above the culvert is wider and shallower than normal (Metcalf 2011 pers. comm.). Material is accumulating in the culvert entrance and the exit is almost entirely silted in, obstructing fish movement and affecting conditions both upstream and downstream. A 2011 visual survey by USFWS conducted in the unnamed tributary of Turkey Creek detected 1.90 darters per meter immediately downstream and 1.45 darters per meter just upstream of the SR 123 crossing at the unnamed tributary (Tate 2012 pers. comm.). Again, these numbers are lower than the average density of Turkey Creek (4.5 darters per meter).

EFFECTS OF THE ACTION

Factors to be considered

The effects of roads and bridges on aquatic systems have been well-studied, and can extend well beyond the project's construction footprint. Effects can occur from construction activities, the

presence of the structure itself, and from associated urban growth. Direct impacts may consist of: crushing or burying individual Okaloosa darters and their prey species by machinery or sediment deposition; displacement of individuals; habitat loss due to stream channelization, vegetation removal, decreased woody debris, altered stream temperatures, the addition of fine sediments; and altered stream flows/disrupted groundwater flow. Indirect impacts from construction may consist of altered water quality, habitat quality, and behavior of Okaloosa darters within the stream segments. Elevated levels of fine sediments may affect breathing, feeding, and reproduction. Invertebrate populations, a food source for the darter, may also be depressed. Other indirect effects result from the continuing presence of the road itself. These effects may be both short-term (such as periodic maintenance activities) and long-term (altered stream hydrology and geomorphology; increased magnitude and frequency of floods and debris flows, etc.). Roads can be a major sediment source throughout their existence. Vehicular traffic is a source of chemical contamination from metals, petroleum products, and occasional toxic spills. Roads may also provide a new access point for human activity, thereby causing the spread of non-native plants, fish and mollusks, and pathogens. Additionally, improperly sized and placed culverts may fragment stream habitat which may result in impaired recolonization of unoccupied habitats and/or reduce gene flow in rare aquatic species.

Proximity of the action: SR 123 crosses three streams occupied by the Okaloosa darter (Toms Creek, Turkey Creek, and an unnamed tributary to Turkey Creek). The anticipated ROW at the bridge locations is approximately 122 m (400 ft).

Distribution: The Okaloosa darter occurs in only six watersheds that drain into Boggy and Rocky Bayous along the north side of Choctawhatchee Bay. The Okaloosa darter is still found throughout its historic range in areas of suitable habitat and where threats have been managed, controlled or reduced. Population estimates for the basins crossed by the corridor are shown in the Analysis of Effects below. The corridor crosses two of the six Okaloosa darter watersheds: Toms Creek and Turkey Creek. Toms Creek is a small basin with a drainage area of 2,074.5 ha (5,123.9 ac) total area. The Toms Creek basin comprises 5 percent of all the Okaloosa darter watersheds. The Turkey Creek 16-digit huc basin crossed by SR 123 has a drainage area of 6,095.1 ha (15,055.0 ac) which makes up 14.1 percent of all Okaloosa darter watersheds. It is within the greater Turkey Creek basin, which has a large drainage area of 40,840.0 ha (100,874.8 ac) or 41 percent of all the Okaloosa darter watersheds.

Timing: The work will be completed in three segments. Construction on the segment from north of SR 85S to north of Toms Creek (FPID # 4111022) is expected to begin in July 2014 and take 2 years to complete. This section will affect Toms Creek. Construction on the segment from north of Toms Creek to north of Turkey Creek (FPID # 4111023) is projected to begin in July 2013; this segment will affect the unnamed tributary to Turkey Creek and Turkey Creek proper, and is expected to take 2 years to complete. The final segment extends from north of Turkey Creek to SR 85N (FPID # 4111024). No Okaloosa darter streams are crossed in this segment. This work is expected to begin in October 2014 and take 2.5 years to complete. Due to the overlap in construction periods, work potentially impacting Okaloosa darter streams will extend over 37 months and two spawning seasons in each basin. Okaloosa darters reproduce from late

March to October with peak spawning occurring from April to June. Construction related activities during the breeding season could affect Okaloosa darter reproduction in the Action Area.

Nature of the effect: By using environmentally-sensitive bridge construction techniques, avoiding and minimizing pilings in the stream, protecting stream channel stability, using erosion control, and following other conservation measures, direct and indirect impacts from the project will be greatly reduced. Direct and indirect effects are likely to occur primarily within the 122-m (400-ft) project corridor where the road crosses the three streams. Additional indirect effects may occur beyond the 122-m corridor. Activities that could cause erosion and sedimentation into the stream could extend over 1,000 m (3,280 ft) downstream; however, erosion control measures should reduce these effects to a minimal level. Capacity improvement projects can lead to additional development within the watershed. However, since this section of roadway is located entirely on Eglin AFB, no new development is anticipated.

The direct loss of individual Okaloosa darters may be detrimental to the genetic diversity of each basin's subpopulation. The direct loss of habitat from bridge pilings and the impacts to water quality in and downstream of the project area may contribute to population reduction in the Action Area. Individual fish within the project area may be temporarily displaced into other occupied habitat, leading to intra-specific aggression for this territorial species. Due to the prolonged time period required for construction, reproduction may be reduced for two reproductive seasons.

Duration: The duration of impacts will be both short- and long-term, with work activities extending over thirty seven months. Some indirect impacts due to the presence of the road will be permanent.

Disturbance frequency: Construction activities will result in a prolonged, one-time disturbance to the Okaloosa darters within the Action Area.

Disturbance intensity and severity: Temporary impacts are expected to occur during the construction phase of the project. The life span of an Okaloosa darter is estimated to be 2-5 years. Since work for each segment will be two years, the temporary impacts of the proposed action are not expected to affect multiple generations. Recolonization of the habitat remaining onsite is expected within months to years, but may be much shorter if habitat is restored to suitable conditions. The intensity and severity of the direct impacts will be reduced by implementing many of the conservation measures in the proposal. These measures include but are not limited to, the use of environmentally-sensitive bridge construction at every Okaloosa darter stream; maintaining the natural stream channel; BMPs to control erosion, sedimentation, and turbidity; and stormwater conveyance to treatment ponds to eliminate run off into streams. Some of the severity of impacts will be offset by removing the existing culvert on the unnamed tributary to Turkey Creek, and restoring the stream channel. This stream restoration activity will take place on Eglin AFB with technical assistance from their Natural Resources Section and the Service.

Analysis for effects of the action

The construction activities described in the BA for widening SR 123 have the potential to impact the Okaloosa darter. Potential negative impacts to the darter would be temporary, extend for over three years, and affect approximately 0.366 km of suitable darter habitat, which represents 0.10 percent of the species range of 365 stream km. Survey data for the three streams is given below in **Table 3**. As described above (see Population Abundance), densities and population estimates are based upon the Service population estimate calculated using data from Jordan and Jelks' 2004 sampling.

Application of the average darter density to the stream segments likely inhabited within the 122-m (400-ft) impact area yields an estimate of 1562 darters potentially impacted by the proposed action, representing 0.38 percent of fish in the two basins and 0.19 percent of the entire Okaloosa darter population. The percent of the fish population expected to be affected in each basin are: Toms Creek 1.88; and Turkey Creek 0.30.

Direct effects: While the use of environmentally sensitive construction methods should greatly reduce direct impacts to darters and stream habitat, some mortality is expected along with displacement of fish for the approximate 3 years that work will take place. Mortality may result from construction debris, equipment movement, muck removal, placement of fill, sedimentation, and/or as the result of pile-driving of bridge piers. Displacement will result from disturbance and noise. Direct impacts of mortality or displacement may occur for fish within the 122-m (400-ft) project corridor for each of the three stream crossings. Direct impacts may affect 0.366 km (1,200 ft) of potential stream habitat, resulting in displacement or mortality of up to 1562 Okaloosa darters.

Table 3. Okaloosa darter density, population estimates, and local population trend.

	Toms Creek	Unnamed Tributary of Turkey Creek	Turkey Creek	Total in Toms and Turkey Creek basins	Entire population (6 basins)
Mean density¹ (darters/m)	3.8	4.5	4.5	—	3.1
# fish 122-m (400-ft) length	464	549	549	1562	1562
# fish in basin²	24,693	368,945		411,638	802,668
Percent fish affected in basin	1.88	0.30		0.38	0.19
Population trend in stream	Declining	Increasing			

¹Based on 5-year status review Table 2 (Service 2007)

²Based on total individuals estimated using the average density and the estimated amount of occupied stream length (Service 2007)

Indirect effects: Short-term water quality and habitat degradation and temporary blockage of fish passage may cause indirect impacts in feeding patterns, respiratory functioning, and habitat use throughout the existing stream habitat. Sedimentation from soil disturbance in and near the stream may interfere with proper respiratory functioning, smother aquatic vegetation and woody debris that darters use as habitat, and reduce channel capacity. Loss of channel capacity leads to greater bank erosion, channel widening, increased temperatures and other alterations adverse to the darter. The incorporation of the conservation measures outlined above should greatly reduce the potential impacts to Okaloosa darters present in the work area, however sedimentation and habitat instability is reasonably certain to occur within a 122-m (400-ft) corridor surrounding the project and may extend further, especially in the downstream direction.

Beneficial effects: No long-term benefits are expected from the road project itself. However, the conservation measures include the restoration of approximately 47.6 m (156 ft) of stream channel that reconnects habitat for the Okaloosa darter. The restoration project is listed under the Conservation Measures above to improve stream habitat and the long-term survival of the Okaloosa darter. The Service considers this restoration as contributing significantly to the recovery of this species.

Species response to a proposed action

Effects to Okaloosa Darter and its Occupied Habitat

The temporary loss of habitat and disturbance due to construction activities may result in the mortality or displacement of individuals. The proposed action would result in a prolonged (over 3 years total), temporary disturbance to the Okaloosa darters within the Action Area. Direct impacts are expected to be greatest during the construction phase of the project, which is expected to take 2 years to complete for each segment with a stream crossing. In FY 2007, Eglin AFB restored portions of Mill Creek within the Falcon and Eagle golf courses. Within one year of completion, Okaloosa darters had colonized the entire restoration project. As evidenced by this rapid recolonization following restoration work on Mill Creek, habitat in the Action Area is likely to be recolonized within days or weeks if restored to suitable conditions. Spawning within the 122-meter (400-foot) corridor may be absent or reduced during the construction phase, but should re-occur in the spring/summer following recolonization.

The applicants have committed to restoring habitat at the unnamed tributary to Turkey Creek which benefits Okaloosa darters both within the Action Area and range-wide. This restoration project is a focus of the Recovery Plan which calls for restoration of habitat in the six Okaloosa darter stream watersheds.

Interrelated and Interdependent Actions

Along with the effects of the action, we must consider the effects of other federal activities that are interrelated to, or interdependent with, the proposed action (50 CFR sect. 402.02). Interrelated actions are part of a larger action and depend on the larger action for their justification. Interdependent actions have no independent utility apart from the proposed action. At this time, the Service is unaware of actions that satisfy the definitions of interrelated and

interdependent actions that will not themselves undergo section 7 in the future, or that are not already included in the Baseline.

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 that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The Service is not aware of any specific plans within the Action Area that would not be covered under section 7.

CONCLUSION

After reviewing the current status of the Okaloosa darter, the environmental baseline for the action area, the effects of the action, and the cumulative effects, it is the Service's biological opinion that the proposed widening of SR 123 from SR85S to SR 85N is not likely to jeopardize the continued existence of the Okaloosa darter. No critical habitat has been designated for this species; therefore, none will be affected.

Most direct and indirect effects will occur within the 122-meter (400-foot) study corridor and are considered temporary and reversible. Effects are expected to be greatest in the Toms Creek basin (up to 1.88% fish affected) due to its small size and the location of impacts. However, these temporary loss rates are relatively low for a moderate-fecundity small-bodied fish with a brief (less than 5 years) lifespan. Up to 0.19% of the entire population of Okaloosa darters may be affected. Given the two large and increasing subpopulations of Turkey Creek and Rocky Creek, the probability of species extinction is low (Service 2007).

Using a bridge to replace the existing culvert on the unnamed tributary to Turkey Creek and restoring that section of stream channel will improve degraded habitat conditions in the Turkey Creek basin. Our analysis is based on current activities within the range of the Okaloosa darter.

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. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering [50 CFS §17.3]. Incidental take is defined as take that is incidental to, and not the purpose 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 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 below are non-discretionary, and must be undertaken by FHWA so that they become binding conditions of any contract, grant or permit issued by FHWA, as appropriate, for the exemption in section 7(o)(2) to apply. FHWA has a continuing duty to regulate the activity covered by this incidental take statement. If FHWA: (1) fails to assume and implement the terms and conditions or, (2) fails to require any contracted group 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, FHWA must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR §402.14(I)(3)]

AMOUNT OR EXTENT OF TAKE ANTICIPATED

As described above (Effects of the Action), we estimate that up to 1562 Okaloosa darters will be impacted by construction activities for widening SR 123 (**Table 4**). The incidental take is expected to be in the form of temporary direct and indirect impacts resulting from construction activities, impaired water quality, and habitat degradation. While injury or mortality of individuals is possible, the risk will be reduced by the use of environmentally-sensitive bridge construction techniques, and conservation measures that minimize erosion and ground disturbance at each stream crossing and maintain stream channel stability. Our estimate is based on a: 1) 122-m (400-ft) corridor for direct and indirect impacts; 2) population density estimates for each stream crossed; and 3) knowledge of the response of the Okaloosa darter during previous in-stream projects. Injury or mortality would occur either from the direct impact of the operation of heavy equipment within the stream, or smothering by sediment dislodged from banks during construction operations. By designing the bridges to maintain natural stream geomorphology, stabilization of stream banks, and the use of erosion control measures along the stream, we do not anticipate take resulting from long-term erosion and degradation of darter habitat.

Table 4. The number of individuals affected by the proposed project, based on the best available commercial and scientific information.

Species	Individuals	Take Type
Okaloosa darter	Estimated at 1562 individuals due to: <ul style="list-style-type: none"> • Injury, mortality, or harassment from use of heavy equipment; • Injury, mortality, or harassment from sedimentation during construction. 	Harm, Harass, or Kill

EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take will not result in jeopardy to the species. Measures to reduce potential impacts to the Okaloosa darter have been incorporated into the plans for this road construction project.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures (RPM) are necessary and appropriate to minimize the incidental take of the Okaloosa darter and its habitat as a result of road and bridge construction for widening SR 123. Each RPM will be implemented by associated terms and conditions given in the section to follow. FHWA, as the lead federal agency, shall assure that the following reasonable and prudent measures, with their associated terms and conditions are implemented by the FDOT and their contractor. As described in the BO, this project will be completed in three segments. Because segment FPID #4111024 (north of Turkey Creek to SR 85N) does not cross any darter streams, these RPMs do not apply in this segment. Unless otherwise noted, all RPMs and their associated terms and conditions apply in both of the remaining two segments (FPID # 4111022 and FPID # 4111023).

RPM 1: Okaloosa darter protection and monitoring, as well as habitat protection, monitoring, and restoration procedures to minimize impacts from all the construction activities shall be implemented.

RPM 2: It shall be ensured that the stream crossing structures are designed and constructed to protect the streams' natural channel design, thereby reducing the long-term loss of the Okaloosa darter and their habitat.

RPM 3: It shall be ensured that the terms and conditions are accomplished and completed as detailed in this incidental take statement including completion of reporting requirements.

TERMS AND CONDITIONS

In order to be exempt from the prohibition of section 9 of the Act, FHWA must ensure that the FDOT and their contractors comply with the following terms and conditions, which implement the preceding reasonable and prudent measures. All conservation measures described in the BA and listed above are hereby incorporated by reference as terms and conditions within this document pursuant to 50 CFR § 402.14(I) with the addition of the following terms and conditions. The terms and conditions listed below are non-discretionary.

RPM 1

- 1.1 An erosion and sediment control plan shall be submitted and approved by the Service prior to the start of construction. This plan is to include re-vegetation of stream banks and riparian areas within the limit of construction, as needed.
- 1.2 Stream restoration plans for the unnamed tributary of Turkey Creek shall be approved by the Service prior to construction. The restoration plan shall include annual monitoring of the Okaloosa darter population at the unnamed tributary for two years post-construction. It should further define the methods to be used within the two-year period. This term and condition only applies to segment FPID # 4111023.

- 1.3 Contractors for the road construction shall be informed about the presence of the Okaloosa darter and the importance of thorough implementation of protection measures, especially for erosion control.

RPM 2

- 2.1 Monitoring for physical changes in stream channel stability shall be implemented at all crossings to assess the response of impacted streams to bridge construction. A separate monitoring plan shall be approved by the Service prior to construction. Monitoring should be conducted prior to construction and annually for two years post-construction and the plan should further define the methods to be used during this period.

RPM 3

- 3.1 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, Groveland, Florida at (352) 429-1037 within 24 hours. Additional notification must be made to the Fish and Wildlife Services Field Office at Panama City, Florida at (850) 769-0552 and Eglin Natural Resource Section at (850) 882-4164 within 48 hours. 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.
- 3.2 A report describing the actions taken to implement the terms and conditions of this incidental take statement shall be submitted to the Project Leader, U.S. Fish and Wildlife Service, 1601 Balboa Avenue, Panama City, Florida, 32405, within 60 days of the completion of construction. This report shall include the dates of work, assessment and actions taken to address impacts to the Okaloosa darter, if they occurred.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed actions at the development. The Service believes that up to 1562 Okaloosa darters may be incidentally taken directly by construction activities and indirectly by degraded water quality and habitat alteration.

REINITIATION NOTICE

This concludes formal consultation on the action(s) outlined in the BA. 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 shows that the action may affect listed species in a manner or to an extent not considered in this opinion; (3) the action is subsequently modified in a manner that causes an effect to the listed species 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 reinitiation.

FISH AND WILDLIFE COORDINATION ACT CONSIDERATIONS

In accordance with the Fish and Wildlife Conservation Act, the Service recommends that fencing be installed to encourage wildlife to cross the road under the bridge. Fencing would minimize wildlife road kill, especially for the Florida black bear (*Ursus americanus floridanus*), which is listed as threatened by the State of Florida. The fencing should meet the standards of the FDOT and FWA. FWC staff is available to provide technical assistance on fence design; contact Theodore Hoehn at 850-488-8792 or by email at ted.hoehn@myfwc.com.

We appreciate the cooperation of the FHWA, Eglin staff, FDOT and their consultants in preparing this Biological Opinion. We look forward to working closely with you in implementing its provisions and other conservation actions for the Okaloosa darter. Please contact Ms. Mary Mittiga at ext. 236 for questions/comments on this consultation, or Ms. Karen Herrington at ext. 250 for information on the Okaloosa darter.

Sincerely,

/s/ Donald W. Imm

Dr. Donald W. Imm
Project Leader

cc: (electronic copies)
ACOE, Panama City, FL (Andy Kizlauskas)
Eglin AFB, Niceville, FL (Bob Miller)
FDOT, District 3, Chipley, FL (Alan Vann)
FWC, Tallahassee, FL (Ted Hoehn, David Cook)
FWS, Atlanta, GA (Ken Graham)
FWS, Niceville, FL (Bill Tate)
HDR Engineering, Pensacola, FL (Mick Garrett)
USGS, Gainesville, FL (Howard Jelks)

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