Biological Opinion

NC 24/27 Widening from NC 740 to East of Pee Dee River in Stanly and Montgomery Counties, North Carolina (STIP No. R-2530B)

FWS Log #: 42420-2008-F-0240

Prepared by:

U.S. Fish and Wildlife Service
Raleigh Field Office
P.O. Box 33726
Raleigh, NC 27636-3726

Tom Augspurger / Deputy Field Supervisor — 12-12-2018

[NAME, TITLE] — Date

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CONSULTATION HISTORY

This section lists key events and correspondence during the course of this consultation. A complete administrative record of this consultation is on file in the Service's Raleigh Field Office.

2012-06-12 – The Service met with NCDOT staff on-site to discuss the need for Section 7 consultation.

2018-03-06 – The Service received a draft biological assessment (BA) for review.

2018-03-07 – The Service provided comments on the draft BA to NCDOT.

2018-08-15 to 2018-10-04 – The Service provided technical assistance in development of conservation measures to minimize adverse effects.

2018-10-11 – The Service received the final BA (dated 2018-09-00) and a letter from the Federal Highway Administration (FHWA) requesting initiation of formal Section 7 consultation.

2018-10-31 – The Service sent a letter to the FHWA stating that all information required for initiation of consultation was either included with their 2018-10-31 letter or was otherwise available.

2018-11-26 – The Service provided the FHWA and NCDOT with a draft Biological Opinion.

BIOLOGICAL OPINION

1. INTRODUCTION

A biological opinion (BO) is the document that states the opinion of the U.S. Fish and Wildlife Service (Service) under the Endangered Species Act of 1973, as amended (ESA), as to whether a Federal action is likely to:

- jeopardize the continued existence of species listed as endangered or threatened; or
- result in the destruction or adverse modification of designated critical habitat.

The Federal action addressed in this BO is the Federal Highway Administration (FHWA) proposed NC 24/27 widening from NC 740 to east of Pee Dee River in Stanly and Montgomery Counties, North Carolina (the Action). This BO considers the effects of the Action on Schweinitz's sunflower. The Action does not affect designated critical habitat; therefore, this BO does not further address critical habitat.

A BO evaluates the effects of a Federal action along with those resulting from interrelated and interdependent actions, and from non-Federal actions unrelated to the proposed Action (cumulative effects), relative to the status of listed species and the status of designated critical habitat. A Service opinion that concludes a proposed Federal action is *not* likely to jeopardize species and is *not* likely to destroy or adversely modify critical habitat fulfills the Federal agency's responsibilities under §7(a)(2) of the ESA. In this BO, only the jeopardy definition is relevant, because the Action does not affect designated critical habitat. "*Jeopardize the continued existence*" means to engage in an action that reasonably would be expected, directly or indirectly, to 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 that species (50 CFR §402.02). The basis of our opinion for Schweinitz's sunflower is developed by considering the status of the species, its environmental baseline, the effects of the Action, and cumulative effects.

This BO uses hierarchical numeric section headings. Primary (level-1) sections are labeled sequentially with a single digit (e.g., 2. PROPOSED ACTION). Secondary (level-2) sections within each primary section are labeled with two digits (e.g., 2.1. Action Area), and so on for level-3 sections.

2. PROPOSED ACTION

The North Carolina Department of Transportation (NCDOT), in cooperation with the FHWA, proposes to widen the existing two-lane NC 24/27 from NC 740 in Stanly County to a point approximately 800 feet west of River Road (SR 1150) in Montgomery County (STIP No. R-2530B). The Action also includes the rehabilitation of the existing bridge over the Pee Dee River. The Action will be deconstructed into two components: 1) road widening and bridge rehabilitation and 2) conservation measures.

2.1. Action Area

For purposes of consultation under ESA §7, the action area is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the

action" (50 CFR §402.02). The "Action Area" for this consultation includes the NC 24/27 corridor from NC 740 in the City of Albemarle, Stanly County, to a point approximately 800 feet west of River Road (SR 1150) in Montgomery County – a distance of approximately 7.1 miles (Figure 2.1).

2.2. Road Widening and Bridge Rehabilitation

The Stanly County portion of NC 24/27 will be widened to a four-lane divided facility with a 23-foot raised median from NC 740 in the City of Albemarle east to SR 1731 (Sweet Home Church Road). Between SR 1731 and the eastern terminus, NC 24/27 will be widened to a four-lane divided facility with a 46-foot depressed median. The existing Bridge No. 51 over the Pee Dee River will also be rehabilitated.

2.3. Conservation Measures

To minimize effects to the species, a plan is being developed, in coordination with the Service, to relocate all affected Schweinitz's sunflowers to a more protected site with appropriate habitat within Stanly County (a tentative relocation site has been selected but not yet finalized). All affected Schweinitz's sunflowers will be dug up and relocated prior to project let. Seeds from the plants will also be collected and transferred to a Service approved facility for storage and future restoration efforts. A NC Plant Conservation Program permit will be obtained prior to any transplant activities. A monitoring plan will be developed and reports detailing results and management activities will be supplied to the Service.

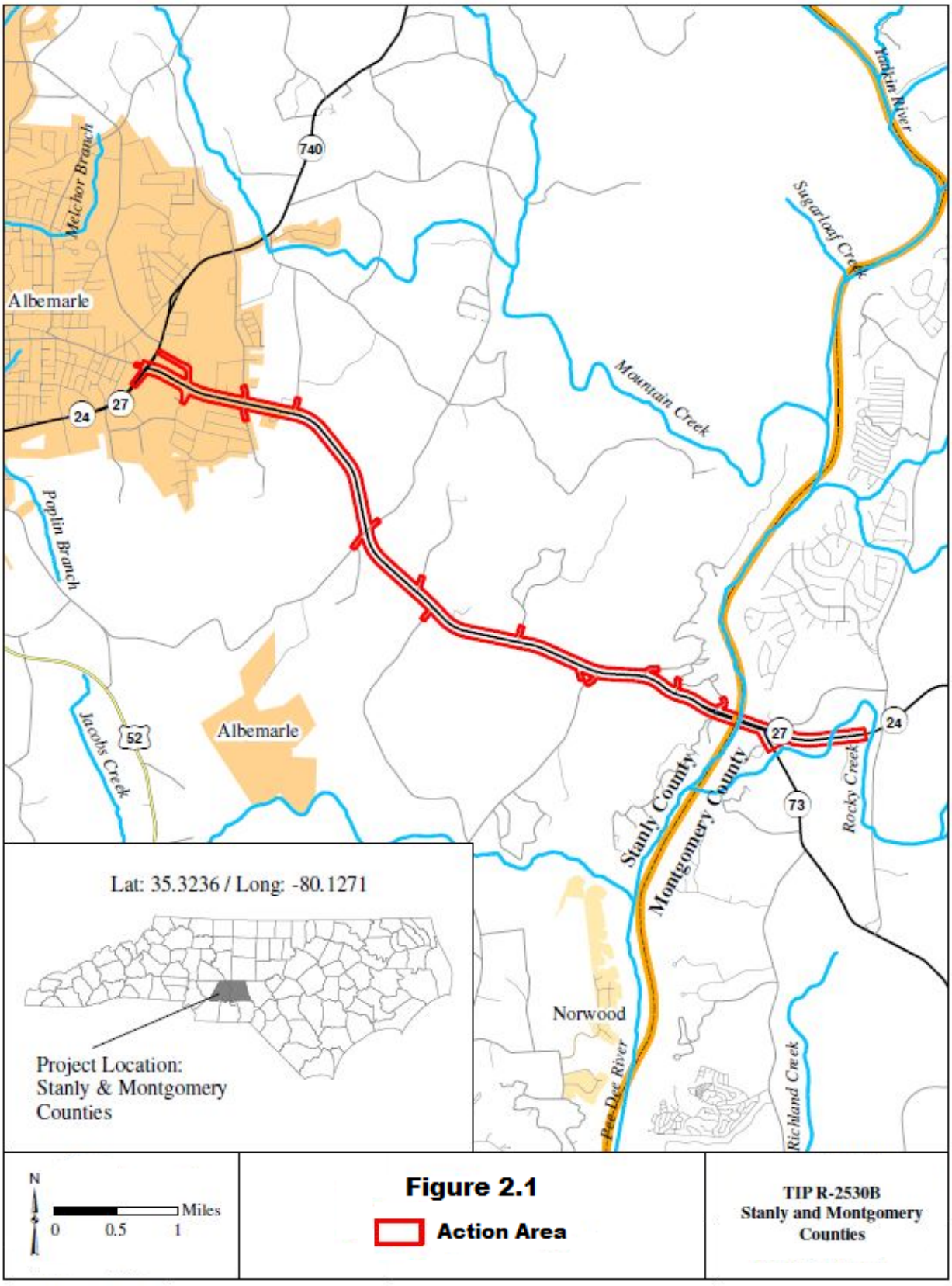
2.4. Interrelated and Interdependent Actions

A BO evaluates the effects of a proposed Federal action. For purposes of consultation under ESA §7, the effects of a Federal action on listed species or critical habitat include the direct and indirect effects of the action, plus the effects of interrelated or interdependent actions. "Indirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration" (50 CFR §402.02).

Utilities along NC 24/27 include telephone, power, gas, cable television, water, and sewer lines. Power, telephone, and cable television lines are suspended from utility poles, while other utility lines are buried along the road shoulder. Utilities within the construction footprint will likely be relocated prior to road construction.

3. STATUS OF SPECIES

This section summarizes best available data about the biology and current condition of Schweinitz's sunflower (*Helianthus schweinitzii*) throughout its range that are relevant to formulating an opinion about the Action. The Service published its decision to list Schweinitz's sunflower as endangered on May 7, 1991 (56 FR 21087-21091).


740
Melchor Branch
Albemarle
27
24
Poplin Branch
Jacobs Creek
52
Albemarle
Mountain Creek
Sugarloaf Creek
Tradkin River
27
24
73
Stanly County
Montgomery County
Rocky Creek
Norwood
Pee Dee River
Richland Creek
Lat: 35.3236 / Long: -80.1271
Project Location:
Stanly & Montgomery
Counties
N
Miles
0
0.5
1
Figure 2.1
Action Area
TIP R-2530B
Stanly and Montgomery
Counties

3.1. Species Description

Schweinitz's sunflower is a perennial plant that generally grows to approximately 6.5 feet tall. It has thickened roots that are used by the plant to store starch. The stem is purplish in color, and the upper third bears secondary branches at 45-degree angles. The leaves are arranged in pairs on the lower part of the stem but usually occur singly (or alternate) on the upper parts. Leaves are attached to the stem at right angles, and the tips of the leaves tend to droop. The leaves are thick and stiff with a rough upper surface. The upper leaf surfaces have broad spiny hairs that are directed toward the tip, and soft white hairs cover the underside. The plant produces small yellow flowers from late August until frost (USFWS 2017).

3.2. Life History

Schweinitz's sunflower is able to colonize through the dispersal of seeds that readily germinate without a dormant period. Presently, this species occurs in relatively open habitats such as roadsides, power line clearings, early successional fields, forest ecotone margins or forest clearings. It thrives in full sun but also grows in the light shade of open stands of oak-pine-hickory. The species is known from a variety of soil types but is generally found growing on shallow, poor, clayey and/or rocky soils, especially those derived from mafic rocks (USFWS 1994). The species also benefits from routine soil disturbance, most notably along roadsides which receive regular right-of-way (ROW) maintenance (Smith 2008).

3.3. Numbers, Reproduction, and Distribution

Schweinitz's sunflower is endemic to the Piedmont physiographic province of North Carolina and South Carolina. It is believed that the species historically occupied prairie areas and open woodlands. However, with fire suppression and increasing development, these habitats have either succeeded into oak-pine-hickory forests or have been severely degraded and fragmented (USFWS 1994).

When the species was listed in 1991, there were a total of 13 extant populations (eight in NC and five in SC) distributed across five NC counties (Cabarrus, Mecklenburg, Rowan, Stanly and Union) and one county (York) in SC (USFWS 1991). In recent years, several additional populations have been found in both NC and SC. As of 2010, there were approximately 78 geographically distinct populations of the species in NC distributed across 13 counties (the original five plus Anson, Davidson, Gaston, Montgomery, Randolph, Richmond, Stokes and Surry) (USFWS 2006, USFWS 2010). A new population in Guilford County, NC was discovered in 2018 (Dale Suiter, USFWS, personal communication). In SC, there are eight geographically distinct areas which appear to approximate populations in two counties (Lancaster and York) (Houk 2003). Therefore, the total known range consists of approximately 86 populations (USFWS 2010).

The 1991 listing rule did not state the number of plants contained within the 13 known populations extant at that time. However, supporting information from the Service's files on this species suggest that these sites were collectively and conservatively estimated to contain some 2,805 stems. Data suggests that, as of 2010, those sites with some potential to provide a role in

the species' recovery in NC contain over 40,000 stems (USFWS 2010). According to Houk (2003), all of the SC sites (regardless of their protection or recovery potential) contained some 27,740 stems in 2002. However, due to annual variability in stem counts, it is important to note that stem counts derived from single observations may provide limited value in assessing the actual abundance of the species in a given location or across its range.

3.4. Conservation Needs and Threats

Schweinitz's sunflower is endangered by the loss of historic levels of natural disturbance from fire and grazing by native herbivores, residential and industrial development, encroachment by exotic species, highway construction and improvement, and roadside and utility ROW maintenance (USFWS 1994).

While seemingly more secure due to the increase in known populations, most populations remain extremely vulnerable. A large majority of the known sites containing the species (over 90%) occur within road or utility ROW. Many of these ROW occurrences are along existing roads which are subject to widening and improvement projects which disturb the existing adjacent ROW. The NCDOT has a program designed to sign roadside rare plant populations and manage these areas with mowing and/or herbicides applied during the dormant season. Despite these efforts, some of the roadside populations have been impacted through herbicide applications or mowing during the wrong time of year. Current recovery efforts are focused upon relocating plants from vulnerable ROW habitats to more protected areas with the potential for adequate management (USFWS 2010).

Portions of 24 extant populations (distributed across eight NC counties and two SC counties) have been identified as having a potential to meet some of the recovery criteria for the species. Of the 24 extant populations with some protection potential, 22 (distributed across seven NC counties and one SC county) are in some form of ownership and management that could provide permanent protection to the species. Portions of ten of these 22 populations have written management plans with components explicit to Schweinitz's sunflower. However, implementation of these plans is a challenge at all locations due to lack of resources (i.e. funding and staff). Management plans are in draft for portions of the remaining 12 other populations whose current ownership may provide (or has indicated willingness to provide) permanent protective ownership (USFWS 2006, USFWS 2010).

As of the last 5-Year Review (USFWS 2010), the status of this species was listed as uncertain. The majority of sites are not monitored annually, or in a way that allows one to assess year-to-year fluctuations in status and trends.

4. ENVIRONMENTAL BASELINE

This section is an analysis of the effects of past and ongoing human and natural factors leading to the current status of the Schweinitz's sunflower, its habitat, and ecosystem within the Action Area. The environmental baseline is a "snapshot" of the species' health in the Action Area at the time of the consultation, and does not include the effects of the Action under review.

4.1. Action Area Numbers, Reproduction, and Distribution

The Action Area contains two NC Natural Heritage Program element occurrences (EO) for Schweinitz's sunflower – EO 14 and EO 243. No Schweinitz's sunflowers have been observed at EO 14 since 1991, with the most recent survey occurring on October 3, 2017. At EO 243, an October 3, 2017 survey revealed 212 stems with 51 being in flower. This is an increase in number from previous surveys in 2011 (55 stems) and 2012 (110 stems). The 212 Schweinitz's sunflower stems from the 2017 survey comprise 0.021 acre separated into four subpopulations stretching over approximately 0.11 mile of road right-of-way (Figure 4.1). Subpopulations A and B represent a recent increase in the boundaries of EO 243.

4.2. Action Area Conservation Needs and Threats

Like all roadside populations of Schweinitz's sunflowers, the population within the Action Area is vulnerable to future road improvements and maintenance activities. Although NCDOT has posted *Do Not Mow* signs and maintains a policy of only mowing such sites during the winter, the site is still vulnerable to mowing during the growing season by contractors who disregard the signs (as has happened at other roadside populations).

5. EFFECTS OF THE ACTION

This section analyzes the direct and indirect effects of the Action on the Schweinitz's sunflower, which includes the direct and indirect effects of interrelated and interdependent actions. Direct effects are caused by the Action and occur at the same time and place. Indirect effects are caused by the Action, but are later in time and reasonably certain to occur. Our analyses are organized according to the description of the Action in section 2 of this BO.

5.1. Effects of Road Widening and Bridge Rehabilitation

The entire Schweinitz's sunflower EO 243 lies within the construction footprint of the Action. The construction area will incur excavation, grading, and fill placement. Therefore, it is assumed that all of the current Schweinitz's sunflower habitat within this EO will either be lost or permanently modified. This will directly affect all 212 stems and their habitat, but the sunflowers will be salvaged (see Section 5.2 below). Although the current roadside habitat will be either lost or permanently modified, the clearing and soil disturbance associated with the Action will likely create new habitat within the Action Area adjacent to the affected area. Due to the persistence of seeds in the soil and the species' generally positive response to tree removal and soil disturbance, the species may recolonize the disturbed area after clearing occurs for newly established right-of-way boundaries.

Figure 4.1: EO 243

5.2. Effects of Conservation Measures

All of the known Schweinitz's sunflowers within EO 243 (212 stems as of October 2017) will be relocated to a more protected location within Stanly County (a tentative relocation site has been selected but not yet finalized). Although past efforts of transplanting the species have had mixed success, there is good potential that many of the relocated sunflowers will survive to establish a new population that will have more protection and greater opportunities for management.

5.3. Effects of Interrelated and Interdependent Actions

The existing utilities located within the construction footprint of the Action will likely be relocated prior to road construction. Although the Schweinitz's sunflowers will have been previously moved, the utility relocations will disturb the species habitat within EO 243 through excavation and clearing. The soil disturbance associated with these activities may create conditions for recolonization of the species from seeds persisting in the soil. Furthermore, the newly cleared and maintained utility rights-of-way may provide new habitat.

6. CUMULATIVE EFFECTS

For purposes of consultation under ESA §7, cumulative effects are those caused by future state, tribal, local, or private actions that are reasonably certain to occur in the Action Area. Future Federal actions that are unrelated to the proposed action are not considered, because they require separate consultation under §7 of the ESA.

There are no known cumulative effects related to this Action.

7. CONCLUSION

In this section, we summarize and interpret the findings of the previous sections (status, baseline, effects, and cumulative effects) relative to the purpose of a BO under §7(a)(2) of the ESA, which is to determine whether a Federal action is likely to:

a) jeopardize the continued existence of species listed as endangered or threatened; or
b) result in the destruction or adverse modification of designated critical habitat.

"Jeopardize the continued existence" means to engage in an action that reasonably would be expected, directly or indirectly, to 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 that species (50 CFR §402.02).

Schweinitz's sunflower is endemic to the Piedmont physiographic province of North Carolina and South Carolina. As of 2010, there were approximately 86 populations of the species in the two states – up from 13 populations known when the species was listed in 1991. The species is endangered by the loss of historic levels of natural disturbance from fire and grazing by native herbivores, residential and industrial development, encroachment by exotic species, highway construction and improvement, and roadside and utility ROW maintenance. At least 22 populations are in some form of ownership and management that could provide permanent protection to the species.

As of October 3, 2017, approximately 212 Schweinitz's sunflower stems occupying approximately 0.021 acre were located within the Action Area. It is assumed that road construction will directly affect all 212 stems and their habitat. However, these sunflowers will be relocated to a more protected area with greater management opportunities. Assuming a significant level of survival, the relocated sunflowers will establish a new population which will compensate for the loss of habitat through the Action. Although the current roadside habitat will be either lost or permanently modified, the clearing and soil disturbance associated with the Action will likely create new habitat within the Action Area adjacent to the affected area. After the completion of the Action, it is possible that seeds persisting in the soil may recolonize the disturbed area within the new right-of-way.

After reviewing the current status of the species, 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 Action is not likely to jeopardize the continued existence of the Schweinitz's sunflower.

8. INCIDENTAL TAKE STATEMENT

ESA §9(a)(1) and regulations issued under §4(d) prohibit the take of endangered and threatened fish and wildlife species without special exemption. The term "take" in the ESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (ESA §3). In regulations at 50 CFR §17.3, the Service further defines:

- "harass" as "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering;"
- "harm" as "an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering;" and
- "incidental take" as "any taking otherwise prohibited, if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity."

Under the terms of ESA §7(b)(4) and §7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered prohibited, provided that such taking is in compliance with the terms and conditions of an incidental take statement (ITS).

This BO evaluated effects of the Action on the endangered Schweinitz's sunflower. ESA §7(b)(4) and §7(o)(2), which provide the authority for issuing an ITS, do not apply to listed plant species. However, ESA §9(a)(2) prohibits certain acts with respect to endangered plant species, including:

(a) remove and reduce to possession from areas under Federal jurisdiction;
(b) maliciously damage or destroy on areas under Federal jurisdiction; and
(c) remove, cut, dig up, or damage or destroy on any other area in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law.

Regulations issued under ESA §4(d) extend the prohibition under (a) above to threatened plant species (50 CFR §17.71). The damage or destruction of endangered and threatened plants that is incidental to (not the purpose of) an otherwise lawful activity is not prohibited.

9. CONSERVATION RECOMMENDATIONS

§7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by conducting conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary activities that an action agency may undertake to avoid or minimize the adverse effects of a proposed action, implement recovery plans, or develop information that is useful for the conservation of listed species. The Service offers the following recommendations that are relevant to the listed species addressed in this BO and that we believe are consistent with the authorities of the FHWA.

1. NCDOT should endeavor to keep protected roadside populations of Schweinitz's sunflower free of invasive species.
2. NCDOT should improve its roadside plant management program with more emphasis and attention to prevent roadside populations of Federally listed plant species from being treated with herbicides or mowed during the wrong time of the year.
3. NCDOT should provide the Service with a copy of any NCDOT databases used for tracking and monitoring roadside populations of Federally listed plant species. These data should be provided on an annual basis.
4. NCDOT should survey the construction site at EO 243 1-2 years after the site is stabilized to see if Schweinitz's sunflowers have recolonized the new right-of-way.

10.REINITIATION NOTICE

Formal consultation for the Action considered in this BO is concluded. Reinitiating consultation is required if the FHWA retains discretionary involvement or control over the Action (or is authorized by law) when:

a. the amount or extent of incidental take is exceeded;
b. new information reveals that the Action may affect listed species or designated critical habitat in a manner or to an extent not considered in this BO;
c. the Action is modified in a manner that causes effects to listed species or designated critical habitat not considered in this BO; or
d. a new species is listed or critical habitat designated that the Action may affect.

11.LITERATURE CITED

Houk, R. 2003. Status survey and prioritization protection of Schweinitz's sunflower (*Helianthus schweinitzii*) in York and Lancaster Counties, South Carolina. Unpublished report prepared for the U.S. Fish and Wildlife Service, Cooperative Agreement No. 1448-40181-02-J-032. 30 pp.

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