



United States Department of the Interior

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FISH AND WILDLIFE SERVICE
Asheville Field Office
330 Ridgefield Court
Asheville, North Carolina 28806

August 3, 1995

Mr. Nicholas L. Graf, P.E.
Division Administrator
U.S. Department of Transportation
Federal Highway Administration
310 New Bern Avenue, Suite 410
Raleigh, North Carolina 27601

Dear Mr. Graf:

This letter represents the Biological Opinion of the U.S. Fish and Wildlife Service (Service) concerning the effects of construction of three North Carolina Department of Transportation (NCDOT) projects in Catawba County on the federally threatened dwarf-flowered heartleaf (Hexastylis naniflora). It is provided pursuant to Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (Act), and is in response to your July 20, 1995, request to initiate formal consultation. This Opinion does not address requirements of environmental laws other than the Act. A complete record of this consultation is maintained and available for your review at this office.

Project Descriptions

The NCDOT is proposing the following three construction projects in Catawba County, all of which involve populations of Hexastylis naniflora:

- (1) Replacement of Bridge Number 152 on SR 1003 over Ball's Creek in the village of Murray's Mill, a historic district (B-2119). The purpose of the project is to replace a one-lane bridge to improve safety and facilitate traffic flow. The NCDOT evaluated three alternatives, each of which involved replacing the existing 24 meter (m) long, 6.1 m wide bridge with a 73 m long, 8.5 m wide bridge. The proposed right-of-way width is 24 m and the project length is 152 m. The preferred alternative involves replacing the existing bridge with a new structure approximately 200 feet downstream. The proposed project will result in the loss of 0.4 hectare (ha) of mesic oak-hickory and 0.1 ha of alluvial forest communities. In addition, construction activities will result in partial removal of the streamside canopy, and may contribute to increased sedimentation into Ball's Creek with concurrent local

changes in temperature and decreases in dissolved oxygen, respectively. The project will not impact any jurisdictional wetland communities. Environmental impacts for the proposed project were evaluated in a November 16, 1993, Natural Resources Technical Report prepared by NCDOT (NCDOT 1993). A Categorical Exclusion document was completed on July 26, 1995. The project is scheduled for construction in 1997.

- (2) Construction of the Hickory East Side Thoroughfare, a multi-lane facility (U-2307). The Thoroughfare would extend approximately 7 miles, primarily on new location, and would connect NC 127 north of Hickory to US 70 in the vicinity of Startown Road. The project will involve construction of a new interchange at I-40. The purpose of this project is to reduce traffic congestion on existing roadways and to improve roadway safety on the east side of Hickory. Ten Build Alternatives were examined and the preferred alternative was believed to be the least environmentally damaging with regards to wetlands, forest lands, and important farmlands. Construction of the preferred alternative will result in impacts to 0.72 acres of wetlands and 2.57 acres of surface waters (associated with stream crossings). The project will involve the relocation of a portion of Clarks Creek. Environmental impacts associated with this project were evaluated in a January 10, 1992, draft Environmental Impact Statement (EIS) and the December 3, 1992, final EIS (Federal Highway Administration 1992). This project is scheduled to be let for construction in September 1995.
- (3) Construction of a new interchange at SR 1124 and I-40 near the Airport Road/Longview area (U-2528AA). This project is in the conceptual stage, but is proposed to involve the construction of a new interchange at I-40 at the existing grade separation at SR 1124. A basic diamond configuration is presently proposed, and the project length is approximately 4,200 feet long with a 68 foot roadway width. The purpose of this project is to provide a direct link from I-40 to the airport in Hickory (check with Wayne?)

Consultation History

Surveys for federally listed endangered and threatened species were conducted by NCDOT biologists on April 4, 1994, for Project B-2119 (Bridge Replacement at Murray's Mill); on May 4, 1995, for Project U-2307 (Hickory East Side Thoroughfare); and on March 21, 1995, for Project U-2528AA (new interchange at I-40) which resulted in the discovery of populations of Hexastylis naniflora within the right-of-way of the proposed projects. An earlier rare species inventory was conducted for Project U-2307 by a consulting firm but no specimens of Hexastylis naniflora were located.

Project B-2119: Representatives from the NCDOT held an on site meeting to notify the Service's Asheville Field Office of the discovery of a

Hexastylis naniflora population within the general project area for Project B-2119 and to initiate informal consultation. On January 11, 1995, another meeting was held at the NCDOT Catawba Maintenance Facility in Newton to seek concurrence on a preferred alternative for the bridge replacement project. Representatives from the NCDOT, the Catawba County Historical Association, the State Historic Preservation Office, Federal Highway Administration (FHWA), and the Service were in attendance. The meeting focused on identifying measures to minimize impacts to the historic district and the Hexastylis naniflora population. The idea of establishing a preserve to protect a portion of the Hexastylis naniflora population was proposed. The Catawba County Historical Association expressed interest in the proposal because a preserve, if established adjacent to the historic district, would provide a aesthetic buffer to the historic district from future development activities in the general area.

Projects U-2307 and U-2528AA: On June 23, 1995, a Service biologist met with representatives from the NCDOT on a field review of three projects in the greater Hickory area in Catawba County that contained Hexastylis naniflora populations--Projects U-2307, U-2528AA and U-2414 (the Tate Boulevard Extension). The latter project was dropped from further discussion because it was determined that construction activities would likely avoid direct impacts to the existing Hexastylis naniflora population. Mitigation options were discussed and the idea of conducting one combined consultation for Projects U-2307, U-2528AA, and B-2119 was presented. A Section 7 consultation combining the above mentioned three projects would not only increase consultation efficiency and predictability, but would likely enhance conservation options (such as the establishment of a larger and more meaningful preserve at the Murray's Mill site versus several small preserves at each project location).

A meeting was held at the NCDOT office in Raleigh on June 27, 1995, to further discuss the combined consultation proposal. This meeting resulted in an agreement to proceed with a combined consultation for the three projects in Catawba County. NCDOT agreed to collect plant population data (population estimates, plant densities, and geographical extent of the populations) at each of the project sites and to complete a biological assessment.

On July 20, 1995, the Federal Highway Administration provided a Biological Assessment which documented that the proposed three projects may adversely affect Hexastylis naniflora and requested initiation of formal consultation with the Service.

Species Status

Hexastylis naniflora is a rare, low-growing herbaceous plant species in the birthwort family (Aristolochiaceae). The species is currently known from a small portion of the upper piedmont of North Carolina and South Carolina (nine counties). The species was officially listed as threatened on April 14, 1989, due to imminent threats and long-term

vulnerability. At the time of listing, only 24 populations were known to exist (U.S. Fish and Wildlife Service 1989) in eight counties.

In the past few years, at least 26 additional populations have been found in South Carolina and at least 10 new populations have been located in North Carolina. While seemingly more secure due to the increase in known populations, all of the populations exist on private lands and only a few are afforded long-term protection. Presently, only five to six populations in North Carolina (two to three in Catawba County, three in Rutherford County) are protected either through verbal agreement, Natural Heritage registry, or as part of a previous Section 7 consultation (the US 321 project in Catawba County). In South Carolina, approximately four populations are afforded some degree of protection. Several of the existing sites in North and South Carolina have been degraded due to residential and industrial development, conversion of habitat to pasture or ponds, timber harvesting, and cattle grazing.

Hexastylis naniflora grows in acidic soils along bluffs and adjacent slopes, in boggy areas next to streams and creekheads, and along the slopes of nearby hillsides and ravines (Gaddy 1980, 1981). It often occurs in stands of mixed hardwoods with an understory of mountain laurel (Kalmia latifolia) or rhododendron (Rhododendron sp.) and other acidiphiles. Hexastylis naniflora grows in Pacolet sandy loams (not on heavy clays typical of the Piedmont), Madison gravelly sandy loam and Musella fine sandy loam. Soil type is believed to be important, as is moisture and acidity. This species appears to be self-maintaining where shrubs are rare and light gaps are present.

Effects of the Action

Potential direct impacts resulting from these three projects would be the complete or partial destruction of portions of three Hexastylis naniflora populations/occurrences. The population at Project B-2119 occurs on approximately 6.3 ha (15.6 acres); at Project U-2307 the plants are distributed in two separate populations (historically, this may have represented one population) which encompass approximately 2.1 ha (5.2 acres) in total, and the plants at Project U-2528AA are also distributed in two separate populations (separated by I-40) and occur on a total of 1.9 ha (3.5 acres). All three of the sites contain thousands of individual plants; the population at Project B-2119 is the largest in total area and density of plants, and is the least fragmented (appears to be one contiguous population). Both Project B-2119 and U-2528AA contain relatively undisturbed, high quality habitat; Project U-2307 consists of somewhat degraded habitat (encroaching development, appears to have been logged in the not too distant past).

The Biological Assessment provided a summary of the estimated percent of the existing Hexastylis naniflora populations that were within the project footprint: Project B-2119 will directly impact approximately 2 percent of the population; Project U-2307 will directly impact approximately 50 percent of the combined two populations; and Project U-2528AA will directly impact 36 percent of the combined two populations.

Other direct and indirect impacts from this project that may degrade Hexastylis naniflora habitat include disturbance from construction activities that may lead to subtle changes in moisture/shading regimes favoring invasive exotic species such as Japanese honeysuckle (Lonicera japonica). Additionally, the effects of population fragmentation on genetic interchange, while poorly understood, may be another indirect impact to remaining plant populations.

Cumulative effects are those effects of future non-Federal (State, local government, private, or any other non-Federal entity) activities on endangered or threatened species that are reasonably certain to occur in the action area. Future actions in the project areas, particularly in association with Projects U-2307 and U-2528AA, will likely include increased private residential and commercial development, which will likely lead to further losses in the remaining Hexastylis naniflora populations. The Service believes that the entire populations at Projects U-2307 and U-2528AA will be eventually eliminated to secondary development facilitated by the proposed road projects.

Alignment shifts, to avoid or minimize impacts to the plant populations, were discussed, but design changes were decided to be either not feasible or cost prohibitive. Thus, the Biological Assessment outlined the following environmental commitment that is to be part of the combined project plans: the NCDOT will pursue purchasing land in fee title (or conservation easement) from willing sellers to establish a preserve of approximately 11.9 ha (29.4 acres) in the Murray's Mill area. Acquisition efforts will begin as soon as consultation with the Service is completed. The preserve size and configuration was determined based on an examination of ownership patterns (the goal is to include a portion of one privately owned tract and all of another tract) and the extent of the known Hexastylis naniflora population. The preserve, if established, will encompass a majority of the plant population (4.7 ha out of 6.3 ha, or 75 percent) including some buffer land (7.2 ha or 17.7 acres). The preserve will be conveyed to another responsible entity (such as the Catawba County Historical Association or Catawba County) with an accompanying agreement or deed restriction that the existing plant population be protected in perpetuity.

The NCDOT and FHWA have also agreed that if establishing a preserve in the Murray's Mill area is not feasible, they will pursue establishing a preserve of similar size and quality (with regards to plant population density and size) at another location in North Carolina, as agreed upon by the Service. In addition, if the entire 11.9 ha area, as committed in the Assessment, is not protected through fee title or conservation easement, then Project U-2528AA will be dropped from this combined consultation and will need to be addressed in a separate consultation at a future date.

Similarly, the Service has agreed that if the above mentioned preserve is established, and Project U-2528AA is dropped (not constructed), the NCDOT may substitute another project involving Hexastylis naniflora contingent

upon Service approval. The Service will evaluate such criteria as plant population size, habitat quality, landscape context (e.g., rural, urban), proposed impacts to the plant population, etc. in making a decision on substituting another NCDOT project.

These three projects combined will involve the direct loss of numerous Hexastylis naniflora individuals. In a previous consultation with NCDOT and FHWA (US 321 project) involving this species, a large percentage of the individuals to be impacted were transplanted to protected areas. While transplanting was considered as part of this combined consultation, the Service decided it would not be a major focus of the agreed upon conservation efforts. Transplanting endangered or threatened plant species from project impact areas, while minimizing impacts to individuals, is generally not recommended. The intent of the Act is to protect the ecosystems upon which these federally listed species depend. Thus, protecting habitat is considered to be a key factor for ensuring survival and recovery of listed species. The three NCDOT projects will involve the establishment of a preserve of approximately 29.0 acres of relatively high quality habitat. This site, and the Hexastylis naniflora population will be protected through a written agreement (or deed restriction) with the ultimate owner. Some transplanting of individuals to protected sites, or possibly even the collecting of individuals for Center for Plant Conservation approved botanical gardens, may be carried out, but will be the sole responsibility of the Service. Any transplanting efforts will be conducted with prior coordination with NCDOT.

Biological Opinion

The discovery of these three additional occurrences of Hexastylis naniflora, in addition to the 36 new populations located since the species was listed, is an important consideration in assessing the species' status and the impacts of the three projects. While many of the existing populations are degraded and/or declining for various known and unknown reasons, and only a few of the populations are assured long-term protection, the species does not appear to be nearing endangerment (i.e., moving from threatened to endangered status). In view of this, it is our biological opinion that the proposed action is not likely to jeopardize the continued existence of Hexastylis naniflora.

Incidental Take

Sections 7(b)(4) and 7(o)(2) of the Act do not apply to the incidental take of listed plant species. However, protection of listed plants is provided to the extent that Section 9 of the Act requires a Federal permit for removal or reduction to possession of endangered plants from areas under Federal jurisdiction, or any act that would remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any regulation of any State or in the course of any violation of a State criminal trespass law.

Conservation Recommendations

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

The Service requests that the following conservation recommendations be implemented by the NCDOT as part of the project plans:

- (1) the agreement (or deed restriction) to protect plants on the preserve in perpetuity will include a provision that any management recommendations made by the Service will be implemented if resources are available, and that access into the preserve will be granted for Service representatives and representatives from state resource agencies with prior notification to the owner.
- (2) the deed for the acquired site will identify that this area was purchased for conservation purposes.
- (3) measures to further minimize impacts to the plant populations such as keeping the fill section as narrow as possible and clearing and grubbing to the construction limits will be considered during the final design stage of the projects.
- (4) a pre-bid and pre-construction conference will be held by the NCDOT to notify contractors of the need to abide by any special provisions to protect the Hexastylis populations as identified in Number 3 above. These conferences will be attended by at least one representative from the Planning and Environmental Branch and Roadside Environmental Unit. The Service's Asheville Field Office will be invited to attend.
- (5) the Service's Asheville Field Office will be notified at least one month in advance of the start of construction for all three projects to allow an opportunity to transplant specimens from project impact area. The NCDOT, if resources allow, will provide staff to assist with any transplantation efforts.

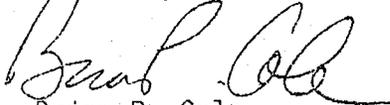
In order for the Service to be kept informed of actions that either minimize or avoid adverse effects or that benefit listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

This concludes formal consultation under Section 7 of the Act. As required in 50 CFR 402.16, reinitiation of formal consultation is required if: (1) new information reveals impacts of this identified action that may affect listed species in a manner not previously considered; (2) this action is subsequently modified in a manner which was not considered in this review; or (3) a new species is listed or

critical habitat determined that may be affected by the identified action.

The Fish and Wildlife Service appreciates the assistance and cooperation of the NCDOT and FHWA, particularly staff members, Mr. Jim Savidge, Mr. Hal Bain, Dr. Charles Bruton, Mr. Wayne Fedora, and Mr. Dan Hinton. Please keep us informed as to the progress of this project. In any future correspondence pertaining to this project, please reference our Log Number 4-2-95-102.

Sincerely,



Brian P. Cole
Field Supervisor

CC:

- Mr. Frank Vick, North Carolina Department of Transportation, Planning and Environmental Branch, P.O. Box 25201, Raleigh, NC 27611-5201
- Ms. Linda Pearsall, Director, North Carolina Natural Heritage Program, P.O. Box 27687, Raleigh, NC 27611
- Mr. Cecil Frost, North Carolina Department of Agriculture, Plant Conservation Program, P.O. Box 27647, Raleigh, NC 27611
- Mr. Bob Johnson, U.S. Army Corps of Engineers, Regulatory Field Office, 151 Patton Avenue, Room 143, Asheville, NC 28806
- Mr. Roy Shelton, Federal Highways Administration, P.O. Box 26806, Raleigh, NC 27611

References

- Federal Highway Administration. 1992. Final Environmental Impact Statement for the Hickory East Side Thoroughfare, Catawba County. 34 pp.
- Gaddy, L.L. 1980. Status report on Hexastylis naniflora. Prepared for the U.S. Fish and Wildlife Service. Unpublished report. 25 pp.
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- North Carolina Department of Transportation. 1993. Replacement of Bridge Number 152 on SR 1003 over Balls Creek. Natural Resources Technical Report. 20 pp.
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