



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

May 22, 2002

William D. Gilmore, P.E., Manager
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Mr. Gilmore:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion (opinion) based on our review of the North Carolina Department of Transportation's (NCDOT) proposed Interstate 40 (I-40) Connector, located in New Hanover and Pender counties, North Carolina, and its effects on the federally-listed endangered *Lysimachia asperulaefolia* (rough-leaf loosestrife) in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Your February 12, 2002 request for formal consultation was received on February 12, 2002.

This opinion is based on information provided in the February 2002 biological assessment (BA), telephone conversations, field investigations and other sources of information. A complete administrative record of this consultation is on file at this office.

Consultation History:

July 25, 2001 - NCDOT provided the Service with a report: *I-40 Connector Rough-Leaf Loosestrife Survey, New Hanover and Pender Counties, North Carolina (R-2405A)*.

October 2001 - NCDOT provided a draft document *Potential Conservation Measures for Rough-Leaved Loosestrife on the I-40 Connector (T.I.P. No. R-2405A) New Hanover and Pender Counties, North Carolina*.

October 29, 2001 - The Service, NCDOT and their environmental consultants visited the rough-leaf loosestrife sub-populations that will be impacted and/or protected by the proposed project.

January 18, 2002 - Meeting between Service staff (Dale Suiter, John Hammond and Tom McCartney) and NCDOT staff (Hal Bain and Gordon Cashin) to discuss the project and project related impacts to rough-leaf loosestrife. NCDOT provided the Service with a draft BA for the subject project impacts.

February 5, 2002 - The Service (Dale Suiter) provided comments by phone to NCDOT (Gordon Cashin) on a draft BA.

February 12, 2002 - The Service received a letter (dated February 12, 2002) and an attached BA from NCDOT requesting formal consultation on the I-40 Connector project.

February 21, 2002 - The Service received an electronic version of the BA.

March 14, 2002 - The Service responded by letter to NCDOT's February 12, 2002 letter by initiating formal consultation.

April 22, 2002 - The Service requested (by fax) further information related to the conservation measures proposed in the BA.

April 30, 2002 - The Service received (by fax) an update to the BA as requested on April 22, 2002.

BIOLOGICAL OPINION

I. DESCRIPTION OF THE PROPOSED ACTION

A. Project Description and Location

The NCDOT proposes to construct a four-lane, divided, access-controlled facility on new location connecting I-40 and US Highway 17 (US 17) from approximately 4.67 miles east of an interchange at I-40 located south of Sidbury Road (SR 1336) to an interchange on US 17 near Porter's Neck Road (SR 1402) (Figure 1). In addition, the NCDOT is proposing improvements to approximately 2.75 miles of US 17 from approximately 0.13 miles south of SR 1402 in New Hanover County, northward to approximately 0.13 miles northeast of Scott's Hill Loop Road (SR 1571) in Pender County. A temporary detour adjacent to US 17 extends an additional 0.28 miles north of Scott's Hill Loop Road. This project, including the new location alignment and US 17 improvements, is referred to as the I-40 Connector (T.I.P. R-2405A). This project, as designed, will impact part of a population of rough-leaf loosestrife. For the purposes of this opinion, the action area for rough-leaf loosestrife is the area within the construction limits of the proposed NCDOT project described above.

B. Conservation Measures

When used in the context of the Act, "conservation measures" represent actions pledged in the project description that the action agency or applicant will implement to further the recovery of the species under review. Since conservation measures are part of the proposed action, their implementation is required under the terms of the consultation. The NCDOT has proposed several actions which will reduce impacts to this species and its habitat in the project vicinity:

1. The NCDOT will complete a feasibility study for the several alternative wetland mitigation strategies for the 621.8-acre (251.6-ha) Corbett Tract Mitigation Site as an on-site wetland mitigation area.
2. The NCDOT will contract additional survey work for rough-leaf loosestrife to be conducted during the optimal survey period and will consider the presence of rough-leaf loosestrife within this area during the evaluation of this site as a wetland mitigation area.
3. The NCDOT may consider some form of site preparation to open up potential habitat areas and will also identify the best management strategy for rough-leaf loosestrife at this site.
4. The NCDOT will coordinate with the Service concerning viability of incorporating rough-leaf loosestrife issues into any wetland mitigation possibilities, including:
 - a. habitat maintenance protocols;
 - b. vegetation monitoring for rough-leaf loosestrife; and,
 - c. dispensation of the property to a responsible party who will continue maintaining the area for rough-leaf loosestrife as well as wetlands.
5. The NCDOT will acquire sixteen (16) parcels totaling approximately 89.9 acres (36.4 ha) that are referred to in the BA as the Plantation Road Site and will evaluate this area for rough-leaf loosestrife habitat as well as for wetland mitigation purposes and will coordinate with the Service to determine a responsible party for dispensation.
6. The NCDOT will retain the Corbett Strip to act as a buffer between the I-40 Connector and adjacent rough-leaf loosestrife clusters.
7. The NCDOT may consider the 34 acre residual site for wetland mitigation purposes and will contract additional survey work for rough-leaf loosestrife to be conducted during the optimal survey period. If found, the NCDOT will consider the presence of rough-leaf loosestrife within this area during the evaluation of this site as a wetland mitigation area.
8. The NCDOT may consider the 22 acre residual site for wetland mitigation purposes and will contract additional survey work for rough-leaf loosestrife to be conducted during the optimal survey period, particularly along the Murville/Leon transitional areas. If found, NCDOT will consider the presence of rough-leaf loosestrife within this area during the evaluation of this site as a wetland mitigation area.

II. STATUS OF THE SPECIES

A. Species/Critical Habitat Description

Rough-leaf loosestrife (*Lysimachia asperulaefolia*) is a perennial herb of the Primrose family (Primulaceae). The species was listed as endangered on June 12, 1987, due to imminent threats and long-term vulnerability (*Federal Register* 52(113):22585-22589). No critical habitat for rough-leaf loosestrife has been designated. This species is endemic to the Coastal Plain and Sandhills regions of North Carolina and South Carolina. Typical habitat for rough-leaf loosestrife is the ecotone between high pocosin and longleaf pine (or oak) savannas that contain sandy or peaty soils and full sunlight. Rough-leaf loosestrife sometimes occurs in low pocosin openings where light is abundant at ground level. Fire is the principal factor that naturally maintains the low vegetation. Other habitats where this species is found include ecotones of stream-head pocosins in the Sandhills and Sandhill Seeps where wet sands are underlain by clay, allowing water to seep to the surface along slopes (USFWS 1995).

B. Life History

Rough-leaf loosestrife grows from 30-60 cm (12-24 in) tall. Its sessile leaves, in whorls of three to four, are broadest at the base and have three prominent veins. The leaves are entire, slightly revolute (rolled under along the margins), yellow-green or blue-green in color and lustrous. Rough-leaf loosestrife flowers from May to June. The yellow flowers are formed in a loose, cylindrical, terminal raceme that is 3-10 cm (1.2-3.9 in) long. Each corolla is 1.5 cm (0.6 in) across and contains five dotted or streaked petals. Fruits in the form of a capsule are formed by August but do not dehisce (open to disperse seeds) until October. Rough-leaf loosestrife depends on rhizomatous growth rather than sexual reproduction for short term survival. The leaves turn a reddish color in fall and the plant overwinters in a dormant stage. Stipitate glands are found on most parts of the plant (USFWS 1995).

C. Population Dynamics

Urban development, conversion of land to agricultural and silvicultural practices and associated drainage and fire suppression allows growth of shrubs and trees that shade out this species. Plowing firebreaks along ecotones could also negatively impact rough-leaf loosestrife (USFWS 1995).

D. Status and Distribution

There were nine extant populations when the species was listed. At the time the recovery plan was written, there were 58 known populations in North Carolina and one known population in South Carolina (USFWS 1995). The species has been collected from 14 counties in North Carolina (Beaufort, Bladen, Brunswick, Carteret, Columbus, Cumberland, Harnett, Hoke, New Hanover, Onslow, Pamlico, Pender, Richmond and Scotland) and two counties in South Carolina

(Richland and Darlington). In North Carolina, the species has not been found in Columbus and Richmond counties since 1938 and 1935, respectively. In South Carolina, it is presently known to occur only in Richland County. Extensive searches have been conducted in the sandhills region of South Carolina, but no other populations were found. According to the North Carolina Natural Heritage Program (NCNHP), there are currently 74 extant rough-leaf loosestrife sites in North Carolina and one site in South Carolina. Many of the North Carolina sites are on publicly owned land, such as Holly Shelter Game Land, Sandhills Game Land, Fort Bragg, Camp Lejeune, Croatan National Forest and Sunny Point Army Terminal. The sole South Carolina population is also located on public land at Fort Jackson (Jame Amoroso, pers. comm. and Julie Holling, pers. comm.).

In addition to rough-leaf loosestrife populations occurring on land owned or managed by state game lands and the United States military, The Nature Conservancy protects one naturally occurring population at McIntosh Bay and five naturally occurring populations at the Green Swamp.

E. Analysis of the Species/Critical Habitat Likely to be Affected

The proposed action has the potential to negatively affect rough-leaf loosestrife within the proposed project area. The effects of the proposed action on rough-leaf loosestrife will be considered further in the remaining sections of this opinion. Potential effects include the destruction of plants by land clearing activities and the permanent destruction of habitat by regrading the site and paving the roadway.

III. ENVIRONMENTAL BASELINE

A. Action Area

Considering the biology of rough-leaf loosestrife and the extent of the proposed actions, the Service defines the action area for the proposed project to include the entire footprint of the project as defined in the BA. The areas include the Corbett Tract Mitigation Site, Plantation Road Site and three right-of-way residual properties. Each site is described in detail in the BA. The Corbett Tract Mitigation Site, is an approximately 621.8-acre (251.6-ha) parcel purchased by NCDOT for on-site wetlands mitigation for the I-40 Connector. The parcel is bisected by the western section of the I-40 Connector. The Plantation Road Site is located south of the proposed alignment and between the Corbett Strip and the 34 Acre Residual Property. Residual properties include the Corbett Strip Residual Site, the 34-Acre Residual Site and 22-Acre Residual Site. The Corbett Strip Residual Site (Corbett Strip) has been identified as an area of land approximately 6.0 to 84.0 feet (1.8 to 25.6 m) wide adjacent to the I-40 Connector right-of-way southern boundary. The 34-Acre Residual Site is located adjacent to the northern boundary of the I-40 Connector right-of-way northeast of the Plantation Road Site. The 22-Acre Residual Site is located in the northwest corner of the intersection of the proposed I-40 Connector and US Highway 17. Figure 1 shows the location of the Action Area.

B. Status of the Species Within the Action Area

In 1996, during the course of a jurisdictional delineation of the I-40 Connector corridor, a specimen of rough-leaf loosestrife was identified in the vicinity of the US 17 terminus. At the time of the discovery, rough-leaf loosestrife had not been previously identified within New Hanover County. Rough-leaf loosestrife plants at this site have since been destroyed by logging operations.

According to data collected in 2000 and 2001, at least 354 stems in two subpopulations are located in the proposed alignment. The NCDOT proposes to protect several properties adjacent to the I-40 Connector right-of-way to minimize overall impacts to this species as a result of this project.

Corbett Tract Mitigation Site - Eighteen (18) separate clusters of rough-leaf loosestrife were documented within the Corbett Tract Mitigation Site during evaluations conducted 1-4 October 2001; one of these is located within the I-40 Connector right-of-way. Most rough-leaf loosestrife clusters were identified along cleared lanes that had been established through the dense vegetation prevalent throughout most of the site. Stem counts were not conducted in all clusters identified; however, a minimum of over 100 stems were identified within Corbett Tract Mitigation Site. Based on field observations, five (5) areas of potential rough-leaf loosestrife habitat are present within the Corbett Tract Mitigation Site.

Plantation Road Site - A total of seven (7) clusters comprised of a minimum of 645 rough-leaf loosestrife stems were identified at two sites during the initial survey conducted in 1996. Six of these clusters are located in a series of parcels north of Plantation Road and these clusters along with five (5) additional clusters subsequently located in this area in 2001 are collectively designated as the Plantation Road Site. Two of these clusters are located within the I-40 Connector right-of-way and are discussed in Section 2.4.1 of the BA. During the original population surveys in 1996, a minimum of 640 rough-leaf loosestrife stems was noted within the Plantation Road Site. During the 2001 population survey, a minimum of 623 stems was noted, exclusive of the clusters in the I-40 Connector right-of-way.

Right-of-Way Residual Properties - Right-of-Way residual properties include the Corbett Strip Residual Site, the 34-Acre Residual Site and the 22-Acre Residual Site.

The Corbett Strip Residual Site strip extends approximately 8200 feet (2500 m) eastward from the Corbett Tract Mitigation Site. The eastern end of the Corbett Strip is adjacent to the northern boundary of the Plantation Road Site and the 34-Acre Residual Site. No rough-leaf loosestrife were identified within the Corbett Strip during surveys in October 2001. Rough-leaf loosestrife cannot be ruled out as potentially occurring within this strip based on the proximity of rough-leaf loosestrife subpopulations to this property.

The 34-Acre Residual Site was surveyed for rough-leaf loosestrife or potential habitat for the species in October 2001. No rough-leaf loosestrife has been identified at the site. Rough-leaf loosestrife cannot be ruled out as potentially occurring within the area. Portions of the 34-Acre Residual Site should be considered as potential rough-leaf loosestrife habitat.

The evaluation of the 22-Acre Residual Site included a survey to determine whether rough-leaf loosestrife is present, an evaluation of habitat potential for supporting rough-leaf loosestrife, and an evaluation of wetlands mitigation potential. No rough-leaf loosestrife were identified on the 22-Acre Residual Site during surveys of potential habitat in October 2001. The recent clear-cutting has opened up the habitat within the Murville fine sand and Leon sand areas, but severe rutting and land disturbance has occurred. This area may still offer potential rough-leaf loosestrife habitat.

C. Factors Affecting Species Environment within the Action Area

Private activities in the action area that may adversely impact the species include mowing, herbicide use and trampling to provide access and clearings for hunting purposes. Past mowing within the action area has actually had a positive affect on rough-leaf loosestrife by clearing the shrubs and opening up the ground, allowing herbaceous species like rough-leaf loosestrife to flourish.

In addition, timbering operations have impacted rough-leaf loosestrife plants within the action area. In 1996, one rough-leaf loosestrife cluster (L-4) was located north of the proposed US 17 interchange, west of existing US 17. This cluster was comprised of five (5) rough-leaf loosestrife stems at the edge of a tire rut. In 2000, the area was searched with North Carolina Plant Conservation Program (NCPCP) personnel as part of a species status review. Recent timbering operations had been undertaken in this area. Severe rutting was documented at the cluster location and no evidence of rough-leaf loosestrife was noted. The NCPCP personnel determined that L-4 had been eliminated through the clearing activities. In June 2001, the area was again searched for the presence of rough-leaf loosestrife. No evidence of rough-leaf loosestrife was found.

The areas where rough-leaf loosestrife are found immediately adjacent to the project area are threatened by the above mentioned activities related to hunting and silviculture as well as ditching and the encroachment of residential areas.

IV. EFFECTS OF THE ACTION

A. Factors to be considered

Proximity of the Action: The proposed project is in the immediate vicinity of habitat important for rough-leaf loosestrife. Specifically the project will potentially impact approximately 354 stems of rough-leaf loosestrife within two subpopulations.

Distribution: Project construction will impact rough-leaf loosestrife plants that occur in the project alignment just north of the Plantation Road Site and in the portion of the road alignment that is located within the Corbett Tract Wetland Mitigation Site.

Timing: At this time, it is not possible to determine when project construction will occur. Project construction will begin once all unresolved issues have been worked out and all of the appropriated permits have been obtained. The timing of project construction will not affect the type or amount of impacts to rough-leaf loosestrife.

Nature of the Effect: The effects of the action could destroy existing rough-leaf loosestrife by crushing, uprooting or burying the plants or seeds.

Duration: Project related impacts to rough-leaf loosestrife will be permanent.

Disturbance Frequency: The construction of the I-40 Connector is a one-time event. The negative impacts that will occur from the project will be permanent.

Disturbance Intensity and Severity: The construction of the I-40 Connector will destroy all plants within the proposed alignment.

B. Analyses for effects of the action

When considering the entire proposal, including project construction and the resulting destruction of plants, as well as measures to preserve rough-leaf loosestrife habitat, the overall effects of the proposed activities in the I-40 Connector construction corridor are anticipated to result in the destruction of at least 354 plants, but to protect 711.7 acres of rough-leaf loosestrife habitat, in perpetuity.

Beneficial Effects: Beneficial effects include the perpetual protection of 711.7 acres of rough-leaf loosestrife habitat and the associated populations that include a minimum of 723 stems. In addition, the proper management of this habitat will likely enhance the rough leaf loosestrife populations already present in these areas.

Direct Effects: Direct effects to rough-leaf loosestrife plants include destruction by crushing or uprooting the plants by heavy equipment, regrading the land and road construction directly where plants currently exist.

Indirect Effects: Indirect adverse effects to rough-leaf loosestrife may occur as a result of project construction. Increased competition from other plant species or establishment of invasive exotic plant species may result from the removal of natural areas within or adjacent to a rough-leaf loosestrife population. Altering the natural hydrology often occurs during road construction and has the potential to negatively impact this species over time. This change in the landscape has the potential to increase the number of exotic plant species.

C. Species Response to the Proposed Action

The BA identifies two main subpopulations of rough-leaf loosestrife that are within the proposed project alignment. The construction of the proposed roadway will destroy all plants that occur within the impact area and will prevent the germination of any seeds that may be in the soil.

V. CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future federal actions 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. No other State activities affecting rough-leaf loosestrife are reasonably certain to occur within the action area.

As stated in the BA, private activities in the project vicinity which may impact rough-leaf loosestrife include land clearing occurring for the construction of private residences and businesses as well as clearing of utility easements. Other private land clearing activities noted in the project vicinity which may impact rough-leaf loosestrife include activities associated with normal silvicultural practices, including ditch maintenance and timber harvesting, as well as more limited clearing associated with hunting activities.

New residential development has occurred on individual lots along Crooked Pine Road and Plantation Road since 1996. Other lots in this vicinity have been cleared for horse pastures. Business development has occurred along US 17 in the vicinity of the I-40 Connector interchange. The frontage along US 17 in the vicinity of the I-40 Connector right-of-way is nearly built out and little natural habitat remains. Clearing of utility easements for transmission lines in potential rough-leaf loosestrife habitat provides an open ecotone beneficial to rough-leaf loosestrife by reducing the dense, competing shrub canopy prevalent across the area.

Timber harvesting has been documented in and around the I-40 Connector right-of-way, including areas containing potential rough-leaf loosestrife habitat. One known rough-leaf loosestrife cluster identified in 1996 near existing US 17 was confirmed destroyed in 2000 due to severe ground disturbance associated with timber harvesting activities.

Subsequent to the original investigation in 1996, a series of drainage features were established or maintained in and around the I-40 right-of-way as well as across the project region. The drainage features north of and adjacent to the I-40 Connector right-of-way were established for the purpose of enhancing site potential for pine production. The drainage features may affect hydrology, which is a threat to this species. Elsewhere, the altered hydrology may be a precursor to increased urbanization within the project region.

Fire suppression has been actively pursued in this area for at least 30 years. Suppression of fire has resulted in dense shrub development in areas of potential rough-leaf loosestrife habitat.

Clearing of trails through dense vegetation, typically by bush-hogging, has occurred on the Corbett Tract and individual parcels off Plantation Road for the purpose of providing hunter access and shooting lanes. Regular maintenance of these trails and lanes provides an open ecotone beneficial to rough-leaf loosestrife by reducing the dense, competing shrub canopy prevalent across the area. The majority of the rough-leaf loosestrife clusters documented in the project vicinity are found in association with cleared trails and lanes.

VI. CONCLUSION

After reviewing the current status of rough-leaf loosestrife, the environmental baseline for the action area, effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that project construction and conservation measures, as proposed and implemented, are not likely to jeopardize the continued existence of this species. No critical habitat has been designated for rough-leaf loosestrife, therefore, none will be affected.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and federal regulations pursuant to Section 4(d) of the Act prohibit the taking 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 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 such as 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. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

Sections 7(b)(4) and 7(o)(2) of the Act generally do not apply to listed plant species. However, limited protection of listed plants from take is provided to the extent that the Act prohibits the removal and reduction to possession of federally-listed endangered plants or the malicious damage of such plants on areas under federal jurisdiction, or the destruction of endangered plants on non-federal areas in violation of State law or regulation or in the course of any violation of a State criminal trespass law. Applicable provisions of the North Carolina Plant Protection and Conservation Act (GS 106-202.12 to 202.22) should be followed.

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. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The Service recommends that the NCDOT implement the following conservation recommendations to protect these populations of rough-leaf loosestrife:

1. The NCDOT should cooperate with the following plant conservation agencies in order to allow the transplantation of rough-leaf loosestrife from the project corridor.

United States Fish and Wildlife Service
Raleigh Ecological Services Office
PO Box 33726
Raleigh, NC 27636-3726
contact: Dale Suiter - 919-856-4520 extension 18

North Carolina Plant Conservation Program
North Carolina Department of Agriculture and Consumer Services
PO Box 27647
Raleigh, NC 27611
contact: Moni Bates - 336-643-3344

North Carolina Natural Heritage Program
North Carolina Department of Environment and Natural Resources
1615 Mail Service Center
Raleigh NC 27699-1615
contact: Jame Amoroso - 919-715-8700

North Carolina Botanical Garden
University of North Carolina at Chapel Hill
CB 3375, Totten Center
Chapel Hill, NC 27599-3375
contact: Johnny Randall - 919-962-0522

2. Cooperation includes notifying these agencies as soon as the appropriate parcels of land are acquired to allow transplantation of rough-leaf loosestrife plants to protected areas.
3. The NCDOT should incorporate the perpetual protection of rough-leaf loosestrife into the comprehensive mitigation plan for the Corbett Tract Wetland Mitigation Site.
4. A qualified botanist should monitor the affected populations for three consecutive years after implementation and then every other year for a total of five surveys over the seven years post transplant. The results of these surveys should be reported to the Service.

5. In addition, the Service strongly recommends that the NCDOT continue to protect the known populations of rough-leaf loosestrife that occur on NCDOT rights of way on NC 133 in Brunswick County from maintenance activities. Protection involves the prevention of mowing or herbiciding these populations during the growing season (April 1 through October 31) and occasional (likely every other year) mowing or hand clearing of these populations during the dormant season (November 1 through March 31).

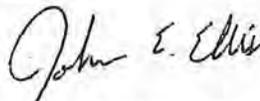
6. In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any of these conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the action outlined in your February 12, 2002 request for formal consultation. 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) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (2) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or, (3) 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.

If you or your staff have any questions concerning this biological opinion, please contact Mr. Dale Suiter, of this office, at (919) 856-4520, extension 18, or via email at Dale_Suiter@fws.gov.

Sincerely,



for Garland Pardue, Ph.D.
Ecological Services Supervisor

cc: USFWS, Atlanta, GA (Joe Johnston)
USFWS, Asheville, NC (Brian Cole)
USFWS, Charleston, SC (Roger Banks)
USACOE, Wilmington, NC (Ken Jolly)
FHWA, Raleigh, NC (Nick Graf)
NCDENR, Natural Heritage Program (Linda Pearsall)
NCDACS, Plant Conservation Program (Dr. Cecil Frost)

LITERATURE CITED

- Amoroso, J. 2002. Personal Communication. Botanist. North Carolina Natural Heritage Program. Raleigh, NC.
- Holling, J. 2002. Personal Communication. Data Manager. South Carolina Heritage Trust Program, Columbia, SC.
- [USFWS] 1987. Endangered and threatened wildlife and plants; determination of endangered status for *Lysimachia asperulaefolia*. *Federal Register* 52(113):22585-22589.
- _____. 1995. Rough-leaf Loosestrife Recovery Plan. U.S. Fish and Wildlife Service. Atlanta, GA. 32 pp.

