

**DEPARTMENT OF THE INTERIOR**

**Fish and Wildlife Service**

**50 CFR Part 17**

**[Docket No. FWS-R4-ES-2010-0003]**

**[MO 92210-0-0009-B4]**

**RIN 1018-AW55**

**Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat  
for *Carex lutea* (Golden Sedge)**

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Final rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), designate critical habitat for the *Carex lutea* (golden sedge) under the Endangered Species Act of 1973, as amended. In total, approximately 202 acres (82 hectares) in 8 units located in Onslow

and Pender Counties, North Carolina fall within the boundaries of the critical habitat designation.

**DATES:** This final rule becomes effective on [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE **FEDERAL REGISTER**].

**ADDRESSES:** This final rule and the associated final economic analysis are available on the Internet at *http://www.regulations.gov*. Comments and materials received, as well as supporting documentation used in preparing this final rule, are available for public inspection, by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Raleigh Fish and Wildlife Office, 551-F Pylon Drive, Raleigh, NC 27636; telephone 919-856-4520; facsimile 919-856-4556.

**FOR FURTHER INFORMATION CONTACT:** Pete Benjamin, Field Supervisor, U.S. Fish and Wildlife Service, Raleigh Fish and Wildlife Office (see **ADDRESSES**). If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800-877-8339.

**SUPPLEMENTARY INFORMATION:**

**Background**

It is our intent to discuss in this final rule only those topics directly relevant to the development and designation of critical habitat for *Carex lutea* under the Act (16 U.S.C. 1531 *et seq.*). For more information on the taxonomy, biology, and ecology of *Carex lutea*, refer to the final listing rule published in the **Federal Register** on January 23, 2002 (67 FR 3120). Information on the associated draft economic analysis (DEA) for the proposed rule to designate critical habitat was published in the **Federal Register** on August 3, 2010 (75 FR 45592).

#### *Species Description, Life History, Distribution, Ecology and Habitat*

*Carex lutea* is a perennial member of the sedge family (Cyperaceae). Fertile culms (stems) may reach 39 in (1 m) or more in height. The yellowish green leaves are grass-like, with those of the culm mostly basal and up to 11 in (28 cm) in length, while those of the vegetative shoots reach a length of 25.6 in (65 cm).

The species is endemic to Onslow and Pender Counties in the Black River section of the Coastal Plain Province of North Carolina. The North Carolina Natural Heritage Program (NCNHP) recognizes eight populations made up of 17 distinct locations or element occurrences. All of the locations occur within a 16- by 5-mile (26- by-8-kilometer) area, extending southwest from the community of Maple Hill.

*Carex lutea* generally occurs on fine sandy loam, loamy fine sands, and fine sands with a pH of 5.5 to 7.2, and with a mean of 6.7. These soils are moist to saturated to periodically inundated. *Carex lutea* occurs in the Pine Savanna (Very Wet Clay Variant) natural community type (Schafale 1994, p. 136). Community structure is characterized

by an open to sparse canopy dominated by pond pine (*Pinus serotina*), and usually with some longleaf pine (*P. palustris*) and pond cypress (*Taxodium ascendens*).

*Carex lutea* is threatened by fire suppression; habitat alteration such as land conversion for residential, commercial, or industrial development; mining; drainage for silviculture and agriculture; highway expansion; and herbicide use along utility and highway rights-of-way.

#### *Previous Federal Actions*

*Carex lutea* was listed as endangered under the Act on January 23, 2002 (67 FR 3120). Designation of critical habitat had been found to be not prudent in the proposed listing rule (64 FR 44470, August 16, 1999); however, following a reevaluation of information available for the proposal and new information that came in through the public comment period on the proposal, critical habitat designation was determined to be prudent in the final listing rule (67 FR 3120). However, the development of a designation was deferred due to budgetary and workload constraints.

On December 19, 2007, the Center for Biological Diversity filed a complaint for declaratory and injunctive relief challenging the Service's continuing failure to timely designate critical habitat for this species as well as three other plant species (*Center for Biological Diversity v. Kempthorne*, C-04-3240 JL (N. D. Cal.)). In a settlement agreement dated April 11, 2008, the Service agreed to submit for publication in the

**Federal Register** a proposed designation of critical habitat, if prudent and determinable, on or before February 28, 2010, and a final determination by February 28, 2011.

We affirmed that designation of critical habitat for *Carex lutea* is prudent and determinable, and we published a proposal to designate critical habitat for this species in the **Federal Register** on March 10, 2010 (75 FR 11080). We accepted public comments on this proposal for 60 days, ending May 10, 2010. On August 3, 2010 (75 FR 45592), we announced the reopening of the public comment period for an additional 30 days (ending September 2, 2010); the availability of a DEA; our proposal to enlarge two previously proposed subunits of critical habitat because we discovered that *Carex lutea* occupies an area at these two subunits that is greater than what we believed when we were preparing the March 10, 2010, proposed rule; and an amended required determinations section of the proposal (75 FR 45592).

### **Summary of Comments and Recommendations**

We requested written comments from the public on the proposed designation of critical habitat for *Carex lutea* during two comment periods. The first comment period, following publication of the proposed rule, opened March 10, 2010 (75 FR 11080), and closed May 10, 2010. The second comment period, associated with the availability of the DEA and our revised proposal, opened August 3, 2010 (75 FR 45592), and closed September 2, 2010. We contacted appropriate Federal, State, County, and local agencies; scientific organizations; and other interested parties, and invited them to comment on the

proposed rule and the associated DEA.

During the first comment period (March 10 through May 10, 2010), we received two comment letters directly addressing the proposed critical habitat designation. During the second comment period (August 3 through September 2, 2010), we received one comment letter addressing the proposed critical habitat designation and the DEA. We did not receive any requests for a public hearing, so no public hearing was held. Comments we received, including comments from peer reviewers (see below), are addressed in the following summary and incorporated into the final rule as appropriate.

#### *Peer Review*

In accordance with our peer review policy published in the **Federal Register** on July 1, 1994 (59 FR 34270), we solicited expert opinions from three knowledgeable individuals with scientific expertise including familiarity with the species, the geographic region in which the species occur, and conservation biology principles pertinent to the species. We received responses from all three peer reviewers.

We reviewed all comments we received from peer reviewers for substantive issues and new information regarding critical habitat for *Carex lutea*. With a few exceptions, the peer reviewers generally concurred with our methods and conclusions, indicating the Service had used the most current scientific information available; had accurately described the species, their habitat requirements, the primary constituent

elements (PCEs) for the species, the reasons for their decline, and threats to their habitat; and had done a thorough job of delineating critical habitat using the best available scientific information.

### *Peer Reviewer Comments*

*Comment 1:* One reviewer pointed out that, for those sites that occur on land currently owned by the North Carolina Division of Parks and Recreation (NCDPR) or lands expected to be transferred to it in the near future (Sandy Run Savannas and Haws Run), the savanna restoration plans are unclear because of funding and on-site personnel uncertainties; however prescribed burning has been initiated on the parcels.

*Our Response:* The Service appreciates the work that the NCDPR has done to protect and enhance *Carex lutea* and its habitat, such as the prescribed burns. NCDPR will continue to manage the habitat as resources allow. Additionally, the Service will continue to work with NCDPR to help protect, manage, and enhance *Carex lutea* and its habitat that occurs on the lands as funding becomes available.

*Comment 2:* One reviewer stated that sea level rise, as a consequence of climate change, could have significant long-term impacts on these populations because the elevation range is only 6.0 ft (1.83 m) to 14.0 ft (4.27 m) for all Sandy Run and Haws Run properties. Additionally, rising water tables may result in shifts of savanna species to higher landscape positions within the natural area.

*Our Response:* The Service is concerned about global climate change and how sea level rise will affect federally listed species. We will continue to monitor rising water tables and consider actions to protect *Carex lutea*.

*Comment 3:* Another reviewer summarized that the greatest threats are inadequate fire and the consequences thereof to *Carex lutea* habitat at protected sites. The reviewer further stated that climate change may exacerbate some of the problems associated with this threat.

*Our Response:* The Service will continue to monitor threats to *Carex lutea* and its habitat and will work with land owners, as appropriate, to encourage prescribed fires and other beneficial management activities. We are not aware of any populations that have been affected by or may be affected by climate change in the future. We will also monitor and work to address potential effects if they occur.

*Comment 4:* One reviewer commented that fire suppression allows critical habitat to be invaded by nonindigenous plants and animals that are not fire-adapted.

*Our Response:* The Service agrees with the reviewer's statement, and we included a sentence stating this in the *Special Management Considerations or Protections* section of this rule.

*Comment 5:* One reviewer pointed out that Baymeade and possibly Mandarin soils are too dry for *Carex lutea* and indicated that if *Carex lutea* is known from an area mapped as Baymeade that it likely occurs on a wetter soil type that is too small to map.

*Our Response:* The Service reviewed the characteristics for Baymeade and Mandarin soils. Baymeade soil is considered a well-drained soil with rapid permeability, and Mandarin soil is considered somewhat poorly drained. We agree with the commenter and have made changes in the *Food, Water, Air, Light, Minerals, or Other Nutritional or Physiological Requirements (Soil)* section. We removed Baymeade from the list of soil types where *Carex lutea* may occur. Because Mandarin soils are somewhat poorly drained, we made no changes to this soil type in this final rule.

*Comment 6:* One reviewer clarified that perigynia frequently detach individually or a few together from the spikes and rarely, if ever, reach the ground while still attached to the spike and culm.

*Our Response:* The Service agrees with the reviewer's statement, and we made the appropriate changes in the *Sites for Breeding, Reproduction, or Rearing (or Development) of Offspring* section.

*Comment 7:* One reviewer commented that while drainage ditches may have suitable wetland soils and are able to support *Carex lutea*, their hydrologic regimes are

not natural and it is likely that seeds produced from ditch populations are transported off site to unsuitable habitat during precipitation events.

*Our Response:* The Service agrees with this statement, and we included a sentence clarifying this in the *Food, Water, Air, Light, Minerals, or Other Nutritional or Physiological Requirements (Water)* section.

*Comment 8:* One reviewer asked if it was possible for the final rule to refer to the U.S. Department of Agriculture's (USDA) National Agriculture Imagery Program aerial photos that would show the critical habitat as it existed on the date the photos were taken in order to resolve any conflicts regarding the beginning date of any development within the critical habitat area's boundaries.

*Our Response:* Our regulations require us to provide textual descriptions of the boundaries of critical habitat for a species. These descriptions are most commonly provided using latitude – longitude or Universal Transverse Mercator (UTM) coordinate pairs. The USDA National Agriculture Imagery Program maps do not satisfy this requirement. However, the USDA National Agriculture Imagery Program aerial photos will be made available for viewing at the office listed in the **ADDRESSES** section of this rule.

*Comment 9:* One reviewer noted that Unit 6, subunit A, The Neck Savanna has the additional significance of being the type locality for *Carex lutea*.

*Our Response:* The Service agrees with this statement, and we have added language in the unit description to acknowledge this.

*Comment 10:* One reviewer pointed out that the locations of subunits within Unit 7 were not adequately described.

*Our Response:* We agree and have amended the location description in the **Final Critical Habitat Designation** section of this final rule.

*Comment 11:* One reviewer mentioned that the map for Unit 7 is unclear as subunits 7A and 7B appear as only one polygon.

*Our Response:* The Service agrees with this comment; however, it is difficult to show subunits 7A and 7B as separate polygons at the resolution required for **Federal Register** publication. Subunits 7A and 7B are only separated by approximately 25 feet (7.6 meters), the width of a gravel road through the site. The boundaries are properly identified in the **Final Critical Habitat Designation** and **Regulation Promulgation** sections of this rule. More detailed maps that show the separation of subunits 7A and 7B are available from the Raleigh Fish and Wildlife Office. See the **ADDRESSES** section of this final rule for contact information.

*Public Comments*

*Comment 12:* One commenter asked that his family property not be considered a part of the critical habitat area because the family's intent is to continue farming and provide the family's dependent children the opportunity to develop the property as desired.

*Our Response:* We carefully inspected updated aerial imagery of the proposed critical habitat area. We also conducted a site visit to the commenter's property to determine if the area in question provides the essential physical and biological features for *Carex lutea*. We determined that a small area along the edge of the commenter's property does contain the essential physical and biological features for *Carex lutea* and a small population occurs in the critical habitat area. We are not able to exclude areas that currently provide the essential physical and biological features for the species from critical habitat designation on the basis of anticipated future development, nor do such development plans form the basis for an exclusion from critical habitat under the provisions of the Act. The total amount of designated critical habitat in this subunit is 0.1 acre (ac) (0.04 hectare (ha)).

The designation of critical habitat, in and of itself, has no legal effect on property rights or constitutes a physical or regulatory "taking" of real estate property. See the "Takings—Executive Order 12630" discussion below.

*Comment 13:* One commenter mentioned that *Muhlenbergia expansa* (cutover muhly) is the most abundant grass in relatively undisturbed, specific locations of *Carex lutea*.

*Our Response:* The Service agrees with this statement, and we incorporated this species in the habitat description in the *Habitats Protected from Disturbance or Representative of the Historic, Geographical, and Ecological Distributions of the Species* section.

*Comment 14:* One commenter noted that Shaken Creek Savanna is owned and managed by The Nature Conservancy (TNC) and that hunting rights are separately owned by private individuals and are tied to a hunt club.

*Our Response:* We made the appropriate clarification in the **Final Critical Habitat Designation** section.

*Comment 15:* One commenter noted that he is aware of populations of *Carex lutea* at subunits 7A and 7B, but that he is not aware of any *Carex lutea* population at subunit 7C.

*Our Response:* We contacted the species expert at North Carolina Natural Heritage Program and confirmed that *Carex lutea* and the necessary physical and

biological features for this species do occur in subunit 7C. Therefore, we did not make any changes to this part of the critical habitat designation.

*Comment 16:* One commenter noted that subunit 8C appears to have many acres (hectares) of suitable habitat for *Carex lutea* and suggested that this subunit should be greatly expanded.

*Our Response:* We conducted a site visit to the property to determine if the area in question provides the essential physical and biological features for *Carex lutea*. Our findings concur with the commenter's suggestions. The actual extent of *Carex lutea* at this site was greater than we previously believed. Based on this new information, we expanded the critical habitat area to incorporate a larger area that contains the essential physical and biological features for *Carex lutea*. On August 3, 2010, we published in the **Federal Register** (75 FR 45592) our proposal to increase the area of subunit 8C, as well as the area of subunit 5D. The total amount of proposed critical habitat in subunit 8C increased by 8.2 ac (3.3 ha), from 1.6 ac (0.6 ha) in our March 10, 2010, proposed rule (75 FR 11080) to 9.8 ac (4.0 ha) in our August 3, 2010, revised proposed rule (75 FR 45592).

*Comment 17:* One commenter expressed concern over the potential negative impacts of listing the Maple Hill School Road Savanna (Unit 3) as critical habitat. He mentioned that the site consists of several small parcels owned by approximately 12 private individuals. He is concerned that the critical habitat designation may result in

reactive actions by these landowners that may destroy good habitat and the small population that was known to occur there at the time of listing.

*Our Response:* The Service respects the commenter's opinions on this matter because of his extensive involvement with the protection of many of the conservation lands associated with *Carex lutea*. However, we are not able to exclude areas that currently provide the essential physical and biological features for the species from critical habitat designation on this basis. Further, when we published the proposed rule in March 2010, we contacted all of the property owners that might be affected by the designation. In our correspondence we included a letter that explained the proposed rule and provided a copy of the **Federal Register** notice along with information about how to provide public comments. We did not receive any public comments from any property owner in the vicinity of Unit 3.

#### *Summary of Changes from the Proposed Rule*

We thoroughly evaluated all comments received on the proposed designation of critical habitat. As a result of the comments we received on the proposed rules, as well as additional field observations during the 2010 field season, we have made the following changes to our proposed designation.

- We adjusted the boundary of Unit 5, subunit D (Sandy Run Savannas), in Onslow County. We expanded the critical habitat area from 0.3 ac (0.1 ha) to 4.9 ac (2.0

ha), an increase of 4.6 ac (1.9 ha). Unit 5 is in conservation ownership by the NCDPR and managed as the Sandy Run Savannas State Natural Area. The proposed expansion of Unit 5, subunit D (Sandy Run Savannas), was described in our August 3, 2010, revised proposed rule (75 FR 45592).

- We adjusted the boundary of Unit 8, subunit C (McLean Savanna) in Pender County. We expanded the critical habitat area from 1.6 ac (0.6 ha) to 9.8 ac (4.0 ha), for an increase of 8.2 ac (3.3 ha). Subunit 8C is owned by TNC and a private company; however, TNC anticipates acquiring the privately owned section in the next 12 months and managing the entire site as a nature preserve. The proposed expansion of Unit 8, subunit C (McLean Savanna), was described in our August 3, 2010, revised proposed rule (75 FR 45592).

All of the additional areas included within the critical habitat boundaries contain all of the PCEs that were identified in the March 10, 2010, proposed rule (75 FR 11080) to designate critical habitat for *Carex lutea*. Because the areas where we increased the size of the critical habitat units are in current or impending conservation ownership, we determined that including these areas within the critical habitat designation will not impact any development, silviculture, or other activities of economic importance; therefore, this decision will not alter the economic analysis of the designation.

With the inclusion of these additional areas, the Service is designating 8 units (21 subunits) totaling approximately 201.8 ac (81.7 ha) in Onslow and Pender Counties, North Carolina, as critical habitat for *Carex lutea*.

We are finalizing the following critical habitat designation in accordance with section 4 of the Act.

TABLE 1. Critical habitat unit changes in acres (hectares) for *Carex lutea*.

[Area estimates reflect all land within critical habitat unit boundaries.]

Unit	Subunit	Proposed Rule ac (ha)	Final Rule ac (ha)	Change ac (ha)
1	A	1.2 (0.5)	1.2 (0.5)	...
1	B	2.0 (0.8)	2.0 (0.8)	...
1	C	0.6 (0.2)	0.6 (0.2)	...
2	N/A	27.1 (11.0)	27.1 (11.0)	...
3	N/A	27.7 (11.2)	27.7 (11.2)	...
4	A	2.3 (0.9)	2.3 (0.9)	...
4	B	1.0 (0.4)	1.0 (0.4)	...
5	A	2.6 (1.1)	2.6 (1.1)	...
5	B	4.3 (1.7)	4.3 (1.7)	...
5	C	0.3 (0.1)	0.3 (0.1)	...
5	D	0.3 (0.1)	4.9 (2.0)	+ 4.6 (1.9)
5	E	13.1 (5.3)	13.1 (5.3)	...
6	A	3.6 (1.5)	3.6 (1.5)	...
6	B	0.7 (0.3)	0.7 (0.3)	...

6	C	0.1 (0.04)	0.1 (0.04)	...
7	A	6.9 (2.8)	6.9 (2.8)	...
7	B	24.7 (10.0)	24.7 (10.0)	...
7	C	26.1 (10.6)	26.1 (10.6)	...
8	A	42.3 (17.1)	42.3 (17.1)	...
8	B	0.5 (0.2)	0.5 (0.2)	...
8	C	1.6 (0.6)	9.8 (4.0)	+ 8.2 (3.3)
Total*		189.0 (76.5)	201.8 (81.7)	+ 12.8 (5.2)

\*Note: Area sizes may not sum due to rounding.

### **Critical Habitat**

Critical habitat is defined in section 3 of the Act as:

(1) The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(a) Essential to the conservation of the species, and

(b) Which may require special management considerations or protection; and

(2) Specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Conservation, as defined under section 3 of the Act, means to use and the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided under the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and translocation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies insure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner seeks or requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) of the Act would apply, but even in the event of a destruction or adverse modification finding, the obligation of the Federal action agency and the landowner is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

To be included in a critical habitat designation, the habitat within the geographical area occupied by the species at the time it was listed must contain the physical or biological features essential to the conservation of the species, and be included only if those features may require special management considerations or protection. Critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical and biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat), focusing on the principal biological or physical constituent elements (primary constituent elements) within an area that are essential to the conservation of the species (such as roost sites, nesting grounds, seasonal wetlands, water quality, tide, soil type). Primary constituent elements are the elements of physical and biological features that, when laid out in the appropriate quantity and spatial arrangement to provide for a species' life-history processes, are essential to the conservation of the species.

Under the Act, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed only upon a determination that such areas are essential for the conservation of the species. We designate critical habitat in areas outside the geographical area occupied by a species only when a designation limited to its range would be inadequate to ensure the conservation of the species. When the best available scientific data do not demonstrate that the conservation needs of the species require such additional areas, we will not designate critical habitat in areas outside the geographical area occupied by the species. An area currently occupied by the

species but that was not occupied at the time of listing may, however, be essential to the conservation of the species and may be included in the critical habitat designation.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific and commercial data available. Further, our Policy on Information Standards Under the Endangered Species Act (published in the **Federal Register** on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines, provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information developed during the listing process for the species. Additional information sources may include the recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, or other unpublished materials and expert opinion or personal knowledge.

Habitat is dynamic, and species may move from one area to another over time. Climate change will be a particular challenge for biodiversity because the interaction of

additional stressors associated with climate change and current stressors may push species beyond their ability to survive (Lovejoy 2005, pp. 325–326). The synergistic implications of climate change and habitat fragmentation are the most threatening facet of climate change for biodiversity (Hannah *et al.* 2005, p. 4). Current climate change predictions for terrestrial areas in the Northern Hemisphere indicate warmer air temperatures, more intense precipitation events, and increased summer continental drying (Field *et al.* 1999, pp. 1–3; Hayhoe *et al.* 2004, p. 12422; Cayan *et al.* 2005, p. 6; Intergovernmental Panel on Climate Change (IPCC) 2007, p. 1181). Climate change may lead to increased frequency and duration of severe storms and droughts (Golladay *et al.* 2004, p. 504; McLaughlin *et al.* 2002, p. 6074; Cook *et al.* 2004, p. 1015). According to the America's Longleaf Regional Working Group (2009, p. 19), the U.S. Department of Agriculture concluded that longleaf pine may extend its range northward, but will likely lose very little of its southern range. The Hadley Centre model suggests that savanna and grasslands may expand and replace southeastern pine forests at some sites in the coastal plain due to increased moisture stress (America's Longleaf Regional Working Group 2009, p. 19). While the effects of climate change on longleaf ecosystem plant communities have not been well studied, one report concluded that while longleaf pine might perform well with increased carbon dioxide, the herbaceous species may not compete as well (America's Longleaf Regional Working Group 2009, p. 19).

The information currently available on the effects of global climate change and increasing temperatures does not make sufficiently precise estimates of the location and magnitude of the effects. Nor are we currently aware of any climate change information

specific to the habitat of *Carex lutea* that would indicate what areas may become important to the species in the future. Therefore, as explained in our March 10, 2010, proposed rule (75 FR 11080), we are unable to determine what additional areas, if any, may be appropriate to include in the final critical habitat for this species to address the effects of climate change.

We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be required for recovery of the species. Areas that are important to the conservation of the species, both inside and outside the critical habitat designation, will continue to be subject to: (1) Conservation actions implemented under section 7(a)(1) of the Act, (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to insure their actions are not likely to jeopardize the continued existence of any endangered or threatened species, and (3) the prohibitions of section 9 of the Act if actions occurring in these areas may affect the species. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation tools will continue to contribute to recovery of this species. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species

conservation planning efforts if new information available at the time of these planning efforts calls for a different outcome.

### *Physical and Biological Features*

In accordance with section 3(5)(A)(i) and 4(b)(1)(A) of the Act and regulations at 50 CFR 424.12, in determining which areas within the geographical area occupied at the time of listing to designate as critical habitat, we consider the physical and biological features essential to the conservation of the species and which may require special management considerations or protection. These include, but are not limited to:

- (1) Space for individual and population growth and for normal behavior;
- (2) Food, water, air, light, minerals, or other nutritional or physiological requirements;
- (3) Cover or shelter;
- (4) Sites for breeding, reproduction, or rearing (or development) of offspring; and
- (5) Habitats that are protected from disturbance or are representative of the historical, geographical, and ecological distributions of a species.

We derived the specific physical and biological features required for *Carex lutea* from studies of this species' habitat, ecology, and life history as described in the proposed rule to designate critical habitat published in the **Federal Register** on March 10, 2010 (75 FR 11080), the **Background** section of this final rule, and the information presented

below. Additional information can also be found in the final listing rule published in the **Federal Register** on January 23, 2002 (67 FR 3120).

We have determined that *Carex lutea* requires the following physical and biological features.

*Space for Individual and Population Growth and for Normal Behavior*

Clonal Growth

*Carex lutea* is a caespitose, or clumping perennial. New shoots develop from a central point, forming a tufted clump of vegetation that is genetically identical to the parent plant. The full extent to which a plant can expand has not been determined.

Therefore, based on the information above, we identify bare soil areas immediately adjacent to existing clumps of mature *Carex lutea* plants to allow room for expansion of the clump to be a physical and biological feature required for this species.

*Food, Water, Air, Light, Minerals, or Other Nutritional or Physiological Requirements*

Water

Although the specific water needs of the species are unknown, *Carex lutea* is found in wet to saturated to periodically inundated soils. The largest populations are found in the wet to saturated ecotones of savannas and hardwood forests. At a few sites, the plants are most abundant in wet to saturated soils adjacent to drainage ditches, and in the saturated to inundated ditches themselves. The occurrence of individuals in ditches is likely due to the wetter soils of the ditches, or the washing of seeds into the ditches from adjacent habitat or both. It should be noted that seeds produced from populations located in ditches may be transported to unsuitable habitat during precipitation events.

Sometimes *Carex lutea* occurs in very wet soil in areas of savanna habitat characterized by an open to absent canopy, suggesting that its abundance in the savanna-wet hardwood ecotone is strongly influenced by hydrologic conditions as well as by edaphic (influenced by factors inherent in the soil rather than by climatic factors) or light conditions or both. The annual average precipitation in Wilmington, NC, (which is approximately 25 mi (40 km) south-southwest of the epicenter of *Carex lutea*) is 54.3 inches (138 cm) (<http://www.weatherpages.com/variety/precip.html>).

## Light

Most *Carex lutea* plants occur in the partially tree-shaded ecotone between savannas and hardwood swamps, with scattered shrubs and a moderate to dense herb layer. The savanna/hardwood swamp ecotone is subject to frequent fires, which favor an herbaceous ground layer and suppress shrub dominance. There is evidence that increased

shading and shrub competition from fire suppression has resulted in the reduction in the number of individuals observed.

## Soil

*Carex lutea* occurs on a wide variety of mapped soil types, including fine sands (Mandarin and Pactolus), loamy sands (Stallings), loamy fine sands (Foreston and Grifton), fine sandy loams (Torhunta and Woodington), and loams (Muckalee). The soils are formed from marine sediments and have a range of permeability (from rapid to moderately rapid) and drainage class (from well drained to very poorly drained). Soil tests at the type site (The Neck Savanna) indicate that microsites not supporting *Carex lutea* regularly test at lower pH levels than those supporting *Carex lutea*, with values at inhabited sites ranging from a pH of 5.5 to 7.2, with a mean of 6.7 (Glover 1994, p. 7). This finding may indicate a preference to soils with a high base saturation or low aluminum saturation or both. The extent of the soils with these chemical characteristics is usually limited within the Coastal Plain and, therefore, is normally not mapped as separate soil map units due to the scale of mapping.

## Temperature

The outer southeastern coastal plain of North Carolina experiences hot and humid subtropical summers and cool temperate winters with subfreezing periods. Persistent snow accumulation is rare. The average crop growing season (daily minimum

temperature higher than 32 degrees Fahrenheit (0 degrees Celsius)) for Onslow County is 162 days (Barnhill 1992, p. 99) and for Pender County is 185 days (Barnhill 1990, p. 105). We have no information about the tolerance of *Carex lutea* to temperature extremes.

In summary, based on the information above, we identify wet to completely saturated loamy fine sands, fine sands, fine sandy loams, and loamy sands soils with a pH of 5.5 to 7.2, in sunny to partially tree-shaded areas or ecotones between savannas and hardwood forests to be a physical and biological feature required for this species.

#### *Sites for Breeding, Reproduction, or Rearing (or Development) of Offspring*

The reproductive biology of *Carex lutea* is unknown; however, due to the observation of ample mature seed production, we can confidently surmise that *Carex lutea* reproduces both sexually, involving gravity and wind-dispersed pollen, as well as vegetatively (LeBlond 1996, p. 19). Perigynia (a special bract that encloses the achene of a *Carex* species) are dispersed when they detach individually or a few at a time from the spikes, thereby depositing the fruits on the substrate adjacent to the maternal parent (LeBlond 1996, p. 19; LeBlond pers. comm. 2010). Seeds have been observed in ditches adjacent to colonies, indicating dispersal by precipitation sheet flow. Animals may also be seed dispersers; the perigynia beaks are minutely serrulate (minutely serrated), perhaps for attachment to fur (LeBlond 1996, p. 19). Survival rates of individual plants are

unknown. Based on observation of the larger known populations, it appears that *Carex lutea* is a successful colonizer of suitable newly disturbed areas (LeBlond 1996, p. 19).

In summary, based on the information above, we identify areas of bare soil immediately adjacent (within 12 inches (30 cm)) to mature *Carex lutea* plants where seeds may fall and germinate to be a physical and biological feature required for this species.

*Habitats Protected from Disturbance or Representative of the Historic, Geographical, and Ecological Distributions of the Species*

The area supporting the *Carex lutea* populations is located in the Black River section of the Coastal Plain Province, and within the Northeast Cape Fear River watershed. The land surface is characterized by large areas of broad, level flatlands and shallow stream basins. The broad flatlands support longleaf pine forests, pond pine woodlands, shrub swamp pocosins, pine plantations, and cropland. The geology is characterized by unconsolidated sand overlying layers of clayey sand and weakly consolidated marine shell deposits (coquina limestone). These sediments were deposited and reshaped during several cycles of coastal emergence and submergence from the Cretaceous period to the present (LeBlond *et al.* 1994, p. 159).

More specifically, *Carex lutea* occurs in the Very Wet Clay Variant of the Pine Savanna community (Schafale 1994, p. 136) or its ecotones. Community structure is

characterized by an open to sparse canopy dominated by pond pine (*Pinus serotina*), and usually with some longleaf pine (*Pinus palustris*) and pond cypress (*Taxodium ascendens*). The shrub layer typically is sparse to patchy, with wax myrtle (*Morella carolinensis*), ti-ti (*Cyrilla racemiflora*), ink berry (*Ilex glabra*), myrtle dahoon (*Ilex myrtifolia*), and black highbush blueberry (*Vaccinium fuscatum*) prominent. Juvenile red maple (*Acer rubrum* var. *trilobum*) and swamp tupelo (*Nyssa biflora*) are often present. The herb layer is dense, and dominated by combinations of toothache grass (*Ctenium aromaticum*), cutover muhly (*Muhlenbergia expansa*), Carolina dropseed (*Sporobolus pinetorum*), and several *Rhynchospora* taxa (e.g., globe beaksedge (*R. globularis* var. *pinetorum*), sandswamp whitetop (*R. latifolia*), and Thorne's beakrush (*R. thornei*)). National vegetation type classification places this natural community in the *Pinus palustris* - *Pinus serotina* / *Sporobolus pinetorum* - *Ctenium aromaticum* - *Eriocaulon decangulare* var. *decangulare* (Tenangle pipewort) Woodland association of the *Pinus palustris* - *Pinus* (*P. elliotii*, *P. serotina*) Saturated Woodland Alliance (NatureServe 2010). This association is equivalent to the Pine Savanna (Very Wet Clay Variant), a natural community type with fewer than 10 occurrences globally (Schafale 1994, p. 136). The Pine Savanna Very Wet Clay Variant is known only from the Maple Hill area near the Onslow/Pender County line and north and west of Holly Shelter Game Land, and from the Old Dock area of the Waccamaw River watershed along the Brunswick/Columbus County line.

In summary, based on the information above, we identify areas containing the natural plant community that would be identified as the Pine Savanna (Very Wet Clay

Variant) according to methodology used in Schafale (1994, p. 136) to be essential for this species. The structure of this community is characterized by an open to sparse canopy dominated by pond pine, and usually with some longleaf pine and pond cypress.

#### Primary Constituent Element for *Carex lutea*

Under the Act and its implementing regulations, we are required to identify the physical and biological features essential to the conservation of *Carex lutea* in areas occupied at the time of listing, focusing on the features' primary constituent elements. We consider primary constituent elements to be the elements of physical and biological features that, when laid out in the appropriate quantity and spatial arrangement to provide for a species' vital life-history functions, are essential to the conservation of the species. Areas designated as critical habitat for *Carex lutea* contain only occupied areas within the species' historical geographic range, and contain the primary constituent element which supports the species' life-history functions.

Based on the above needs and our current knowledge of the life history, biology, and ecology of the species and the habitat requirements for sustaining the essential life-history functions of the species, we have determined that the single primary constituent element for *Carex lutea* is a Pine Savanna (Very Wet Clay Variant) natural plant community or ecotones that contain:

- (1) Moist to completely saturated loamy fine sands, fine sands, fine sandy loams, and loamy sands soils with a pH of 5.5 to 7.2;
- (2) Open to relatively open canopy that allows full to partial sunlight to penetrate to the herbaceous layer between savannas and hardwood forests; and
- (3) Areas of bare soil immediately adjacent (within 12 inches (30 centimeters)) to mature *Carex lutea* plants where seeds may fall and germinate or existing plants may expand in size.

#### *Criteria Used To Identify Critical Habitat*

As required by section 4(b)(1)(A) of the Act, we used the best scientific and commercial data available to designate critical habitat. We reviewed available information pertaining to the habitat requirements of this species. In accordance with the Act and its implementing regulations at 50 CFR 424.12(e), we considered whether designating additional areas—outside those currently occupied as well as those occupied at the time of listing—are necessary to ensure the conservation of the species.

In order to determine which sites were occupied at the time of listing, we used the NCNHP database of rare species (NCNHP 2009). If an element occurrence (EO) record or site was first observed after the species was listed (effective on February 22, 2002), then we considered that those sites were unknown at the time of listing. Five subunits were first observed after February 22, 2002. However, given what we know about the biology of this species and the habitats where it occurs, those five subunits were likely

occupied at the time the species was listed. The occurrence at Watkins Savannah (O'Berry Tract C) (Element Occurrence (EO) 5.19) was found during surveys for *Carex lutea* in 2006. The two sites on Ashes Creek at the Southwest Ridge Savanna (EO 11) were found during surveys for *Carex lutea* in 2002, just 3 months after the species was listed. In 2007, surveys for *Carex lutea* at the McLean Savanna yielded two new subpopulations of *Carex lutea* (EOs 24.22 and 24.23). *Carex lutea* was already known from a site nearby, and all three of these subpopulations are now considered to be part of one population. Subunits 5D and 8C were expanded after field work in 2010 indicated that the populations were larger than previously believed. To the best of our knowledge, these areas had not been surveyed for *Carex lutea* previously, and we have no reason to believe that the plant was imported or had dispersed into these areas from other areas after *Carex lutea* was listed in 2002. Based on the biology of this species and its limited ability for the seeds to move and colonize new areas, the occurrences identified since listing likely were in existence for many years prior to listing and were only recently detected due to increased awareness of this species.

We have also reviewed available information that pertains to the habitat requirements of this species including NCNHP data, the original species description (LeBlond *et al.* 1994, pp. 159-160), the status survey (LeBlond 1996, pp. 11-13), the Service's draft Recovery Plan and the 5-Year Review, regional Geographic Information System (GIS) coverages, survey reports, and other relevant information.

We identified critical habitat based on areas that are currently occupied by *Carex*

*lutea*. These areas occur on rare or unique habitat (the Very Wet Clay Variant of the Pine Savanna community, remnant savannas, or ecotones thereof) within the species' range and contain all of the PCEs. Because so few populations are known to exist, they are all important to the long-term survival and recovery of the species. We are designating eight units (21 subunits) based on sufficient quantity and arrangement of the PCEs being present to support *Carex lutea*'s life processes.

When determining critical habitat boundaries, we made every effort to avoid including developed areas, such as lands covered by buildings, roads, and other structures, because such lands lack the physical and biological features for *Carex lutea*. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this rule have been excluded by text in the rule and are not designated. Therefore, if the critical habitat is finalized, a Federal action involving these lands would not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the physical and biological features in the adjacent critical habitat.

To the best of our knowledge, there are no areas that were not occupied by the species at the time it was listed that are essential to the conservation of *Carex lutea*. All of the areas designated as critical habitat for *Carex lutea* are currently occupied by the species and contain the essential physical and biological features. All of the areas

designated as critical habitat are also within the known historical range of the species. Therefore, we are not designating any areas outside the geographical area occupied by the species at the time of listing. We believe that the occupied areas are sufficient for the conservation of the species.

### *Special Management Considerations or Protections*

When designating critical habitat, we assess whether the specific areas within the geographical area occupied by the species at the time of listing contain features that are essential to the conservation of the species and which may require special management considerations or protection.

The major threats to the features in the areas identified as critical habitat for *Carex lutea* include: Habitat alteration; conversion of its limited habitat for residential, commercial, or industrial development; mining; drainage activities associated with silviculture and agriculture; suppression of fire; highway expansion; and herbicide use along utility and highway rights-of-way. Through our review of the existing data on *Carex lutea*, we conclude that these threats, which were also listed in the final listing rule (67 FR 3120, January 23, 2002), continue to impact this species and its essential physical and biological features.

The destruction of habitat or conversion of habitat for residential, commercial, or industrial development can change the topography, soils, and general character of the

site, making it uninhabitable for *Carex lutea*. These activities can remove the primary constituent element by removing soil (by grading) and changing *Carex lutea* habitat to developed land, which is unsuitable for the species.

Drainage activities associated with silviculture and agriculture may alter the hydrology, which can change the groundwater levels and the amount of moisture in the soil, creating conditions under which *Carex lutea* may not be able to survive. Further, removal of existing vegetation or the planting of trees for silviculture may change the existing conditions such that *Carex lutea* plants no longer receive optimal amounts of sunlight.

The close proximity of roadways and power line corridors to populations of *Carex lutea* may affect the species. Herbicide treatment to maintain vegetation in rights-of-ways has the potential to kill non-target plant species such as *Carex lutea*. Highway expansion may change the local topography and affect water runoff making the site drier or wetter than is optimal for *Carex lutea*.

Mining has been documented in close proximity to one *Carex lutea* population. Mining activities may alter many aspects of *Carex lutea* habitat. Heavy equipment can compact or remove the appropriate soils. The grading of areas adjacent to *Carex lutea* habitat can change the hydrology of those areas and make them more susceptible to invasion by nonnative plant species.

Regular fire in areas where *Carex lutea* occurs helps to maintain the open savanna habitat that is conducive to *Carex lutea* growth. Fire reduces competition and allows seeds to germinate in open, bare soil areas. Fire suppression in areas where *Carex lutea* occurs may result in the growth of shrubs and trees that will eventually shade out herbaceous species such as *Carex lutea*. Fire suppression also allows the invasion of nonindigenous plants and animals that are not fire-adapted.

All of these activities may in turn lead to the disruption of the growth and reproduction of *Carex lutea*.

In summary, we find that the areas we are designating as critical habitat contain the features essential to the conservation of *Carex lutea*, and that these features may require special management considerations or protection. Special management considerations or protection may be required to eliminate, or reduce to negligible level, the threats affecting each unit or subunit and to preserve and maintain the essential features that the critical habitat units and subunits provide to *Carex lutea*. Additional discussions of threats facing individual sites are provided in the individual unit and subunit descriptions.

## **Final Critical Habitat Designation**

We are designating 8 units (21 subunits) totaling approximately 202 ac (82 ha) as critical habitat for *Carex lutea*. They constitute our current best assessment of areas that meet the definition of critical habitat for *Carex lutea*. The eight areas designated as critical habitat, which are described below, are: (1) Unit 1: Watkins Savanna, (2) Unit 2: Haws Run Mitigation Site, (3) Unit 3: Maple Hill School Road Savanna, (4) Unit 4: Southwest Ridge Savanna, (5) Unit 5: Sandy Run Savannas, (6) Unit 6: The Neck Savanna, (7) Unit 7: Shaken Creek Savanna, and (8) Unit 8: McLean Savanna. All units were occupied at the time of listing and are currently occupied.

The name, ownership information, and approximate size of each designated critical habitat unit and subunit are shown in Table 2. As described above, we assessed all areas we are designating as critical habitat to ensure that they provide the requisite primary constituent element as defined in this final rule.

TABLE 2. Designated critical habitat units for *Carex lutea*. Area estimates reflect all land within critical habitat unit boundaries.

Unit	Subunit	Land Ownership by Type	Size of Unit Acres (Hectares)
1	A	NCDPR	1.2 (0.5)
1	B	Private, NCDPR	2.0 (0.8)
1	C	NCDPR	0.6 (0.2)
2	N/A	NCDOT	27.1 (11.0)
3	N/A	Private	27.7 (11.2)
4	A	NCWRC with Progress Energy, Right-of-way (ROW)	2.3 (0.9)
4	B	NCWRC with Progress Energy,	1.0 (0.4)

		ROW	
5	A	NCDPR with Progress Energy, ROW	2.6 (1.1)
5	B	NCDPR	4.3 (1.7)
5	C	NCDPR	0.3 (0.1)
5	D	NCDPR	4.9 (2.0)
5	E	NCDPR with Progress Energy, ROW	13.1 (5.3)
6	A	NCDPR	3.6 (1.5)
6	B	Private	0.7 (0.3)
6	C	Private with Powerline ROW	0.1 (0.04)
7	A	Private (TNC)	6.9 (2.8)
7	B	Private (TNC)	24.7 (10.0)
7	C	Private (TNC)	26.1 (10.6)
8	A	Private (TNC)	42.3 (17.1)
8	B	Private	0.5 (0.2)
8	C	Private (TNC), Private	9.8 (4.0)
Total*			201.8 (81.7)

\*Note: Area sizes may not sum due to rounding.

We present brief descriptions of each unit and reasons why they meet the definition of critical habitat below.

*Unit 1: Watkins Savanna, Pender County, North Carolina*

Unit 1 consists of 3.8 ac (1.5 ha) and includes three subunits in Pender County, NC. This critical habitat unit includes habitat for *Carex lutea* that is under private and State ownership. This unit contains three element occurrences, two of which were known at the time of listing. All three subunits contain the primary constituent element identified for *Carex lutea*; however, they are all very fire-suppressed and have been

altered by timber management. The NCDPR is currently negotiating with the NCNHP to designate this site as a Dedicated Nature Preserve.

Subunit A (EO 5.12) consists of 1.2 ac (0.5 ha) and was known to be occupied at the time of listing. It is owned by NCDPR and is managed as part of the Sandy Run Savannas State Natural Area.

Subunit B (EO 5.13) consists of 2.0 ac (0.8 ha) and was known to be occupied at the time of listing. It is owned by private entities and NCDPR. NCDPR plans to manage their portion of the subunit as part of the Sandy Run Savannas State Natural Area.

Subunit C (EO 5.19) consists of 0.6 ac (0.2 ha) and was not known to be occupied at the time of listing. This *Carex lutea* site was discovered in 2006; however, based on the habitat conditions at this site and the biology of the species, we believe that this site was occupied in 2002, when the species was listed. It is in conservation ownership by NCDPR and is managed as part of the Sandy Run Savannas State Natural Area.

*Unit 2: Haws Run Mitigation Site, Onslow County, North Carolina*

Unit 2 (EO 7) consists of 27.1 ac (11.0 ha) in Onslow County, NC. This critical habitat unit includes habitat for *Carex lutea* and was occupied at the time of listing. It is owned by the NC Department of Transportation and is managed by the NC Ecosystem Enhancement Program. This site was purchased as mitigation for wetland impacts from

nearby transportation projects. Although the site is somewhat fire-suppressed and has been altered by timber management, it contains the primary constituent element identified for *Carex lutea*. The land managers conducted a prescribed fire in the vicinity of the *Carex lutea* plants during the summer of 2009 and will continue restoration efforts there. The population at this site appears to be stable and not vulnerable to extirpation. Managers are considering designating this site as a Dedicated Nature Preserve by the NCNHP.

*Unit 3: Maple Hill School Road Savanna, Pender County, North Carolina*

Unit 3 (EO 10) consists of 27.7 ac (11.2 ha) in Pender County, NC. This site is privately owned and has not been revisited since it was discovered in 1998. It was occupied at the time of listing. Although three clumps of *Carex lutea* were discovered here in 1998, the full extent of the population is unknown and the habitat is vulnerable to land use changes. This site contains the primary constituent element identified for *Carex lutea*.

*Unit 4: Southwest Ridge Savanna, Pender County, North Carolina*

Unit 4 (EO 11) consists of 3.3 ac (1.3 ha) in two subunits in Pender County, NC. This unit is owned by NC Wildlife Resources Commission and is managed for conservation purposes. These two subpopulations were discovered in May 2002, shortly after the species was listed as endangered (effective February 22, 2002). Because the

species is nearly impossible to identify unless it is flowering, and plants less than 3 months old would not be expected to flower in May, it seems reasonable to assume that the plants discovered in May 2002 were present prior to the 2002 growing season and that the site was occupied at the time of listing. The *Carex lutea* plants occur in a power line right-of-way easement that is managed by Progress Energy. The utility company entered into a Registry Agreement with the NCNHP and agreed not to use herbicides or mow during critical *Carex lutea* growth periods. This population is relatively small in size compared to some of the other populations, but appears to be stable. The subunits contain the primary constituent element identified for *Carex lutea*.

Subunit A is 2.3 ac (0.9 ha) in size and is located southwest of Ashes Creek.

Subunit B is 1.0 ac (0.4 ha) in size and is located northeast of Ashes Creek.

*Unit 5: Sandy Run Savannas, Onslow County, North Carolina*

Unit 5 consists of 25.2 ac (10.2 ha) in Onslow County, NC, and is divided into five subunits. This critical habitat unit is owned by NCDPR and managed as part of the Sandy Run Savannas State Natural Area. All five *Carex lutea* sites were known at the time of listing. This unit is a remnant pine savanna, and the subunits contain the primary constituent element identified for *Carex lutea*; however, the subunits are all fire-suppressed and have been altered by timber management, including bedding and ditching. The NCDPR is currently negotiating the designation of a Dedicated Nature Preserve with the NCNHP.

Subunit A (EO 15.3) consists of 2.6 ac (1.1 ha) and occurs on the east side of NC 50. Progress Energy has a transmission line right-of-way through this subunit and has entered into a Registry Agreement with the NCNHP in which they have agreed not to use herbicides or mow during critical *Carex lutea* growth periods.

Subunit B (EO 15.4) consists of 4.3 ac (1.7 ha) and occurs contiguous to and along the north side of a private sand road through the property.

Subunit C (EO 15.4) consists of 0.3 ac (0.1 ha) and occurs along the south side of a private sand road through the property and on the west side of a small stream swamp. The plants are growing in an old, wet road bed.

Subunit D (EO 15.4) consists of 4.9 ac (2.0 ha) and occurs along the south and north sides of a private sand road through the property and on the east side of a small stream swamp. The *Carex lutea* plants are growing in a roadside ditch and along a fire break and in associated low, moist areas. The private sand road is not considered part of this critical habitat designation.

Subunit E (EO 15.14) consists of 13.1 ac (5.3 ha) and occurs contiguous to and on the west side of NC 50. Progress Energy has a transmission line right-of-way through this subunit and has entered into a Registry Agreement with the NCNHP in which they have agreed not to use herbicides or mow during critical *Carex lutea* growth periods.

*Unit 6: The Neck Savanna, Pender County, North Carolina*

Unit 6 consists of 4.4 ac (1.8 ha) in Pender County, NC, and is divided into three subunits. This critical habitat unit includes habitat for *Carex lutea* that is under private and State ownership. This unit contains three element occurrences, two of which were known at the time of listing. The subunits contain the primary constituent element identified for *Carex lutea*; however, they are all very fire-suppressed and have been altered by timber management. The NCDPR is currently negotiating the designation of a Dedicated Nature Preserve with the NCNHP. Privately owned portions of this property are threatened by fire suppression, timber harvesting, and herbicide use. Drainage ditches impact the hydrology of the soils in this area.

Subunit A (EO 18.1) consists of 3.6 ac (1.5 ha), is the type locality for *Carex lutea*, and was known to be occupied at the time of listing. It is owned by NCDPR and will become part of the Sandy Run Savannas State Natural Area.

Subunit B (EO 18.16) consists of 0.7 ac (0.3 ha) and is privately owned. It is currently threatened by fire suppression, but the managers are hopeful that they will be able to burn this tract within the next year or two.

Subunit C (EO 18.17) consists of 0.1 ac (0.04 ha), is privately owned, and occurs in a small power-line corridor along a roadside. It is vulnerable to woody growth and

herbicide use in the power line. There has been little management of the site with prescribed fire due to difficult land ownership patterns.

*Unit 7: Shaken Creek Savanna, Pender County, North Carolina*

Unit 7 consists of 57.7 ac (23.4 ha) in Pender County, NC, and is divided into three subunits. This critical habitat unit includes habitat for *Carex lutea* that is under private ownership. This area is owned and managed by TNC. The hunting rights are separately owned by private individuals and are tied to a hunt club. This unit contains three element occurrences, all of which were known at the time of listing. This savanna complex contains the highest quality natural habitat and the largest population of *Carex lutea* known. With continued fire management, this site should remain stable. The subunits all contain the primary constituent element identified for *Carex lutea*.

Subunit A (EO 21.8) consists of 6.9 ac (2.8 ha) immediately south of Flo Road and east of Alligator Lake Road.

Subunit B (EO 21.8) consists of 24.7 ac (10.0 ha) immediately south of Flo Road and west of Alligator Lake Road.

Subunit C (EO 21.20) consists of 26.1 ac (10.6 ha) immediately south of Flo Road and approximately 1,800 feet (549 meters) west of Alligator Lake Road.

*Unit 8: McLean Savanna, Pender County, North Carolina*

Unit 8 consists of 52.6 ac (21.3 ha) and includes three subunits in Pender County, NC. This site is known as McLean Savanna or McLean Family Farms and has been kept open for hunting through the use of prescribed burning. *Carex lutea* occurs over an extensive area, and it is one of the larger populations known. Each of the three subunits contains the primary constituent element identified for *Carex lutea*.

Subunit A (EO 24.9) is 42.3 ac (17.1 ha) in size and is owned by TNC. *Carex lutea* occupied this area at the time of listing.

Subunit B (EO 24.22) is 0.5 ac (0.2 ha) in size and is privately owned. This *Carex lutea* population was discovered in June 2007, after the species was listed; however, based on what we know about the biology of the species, we believe that this site was occupied at the time of listing.

Subunit C (EO 24.23) is 9.8 ac (4.0 ha) in size and is owned by both private entities and TNC. This *Carex lutea* population was also discovered in June 2007, after the species was listed. In 2010, we discovered that the extent of the population was much greater than we originally thought. Based on what we know about the biology of the species, we believe that this site was occupied at the time of listing.

Because the savannas on the McLean Family Farms have been managed by fire for many years to facilitate hunting, and one subpopulation (Subunit A) has been known on this property since 1997, it is reasonable to believe that these other subpopulations (Subunits B and C) have also occurred there for many years and were just undetected because those areas had not been surveyed specifically for *Carex lutea* until 2007.

The Service believes that all critical habitat units and subunits are currently occupied by *Carex lutea*. In addition, based on our knowledge of the species and our best professional judgment, we believe that these critical habitat units and subunits were occupied at the time the species was listed.

## **Effects of Critical Habitat Designation**

### *Section 7 Consultation*

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to insure that actions they fund, authorize, or carry out are not likely to destroy or adversely modify critical habitat. Decisions by the Courts of Appeals for the Fifth and Ninth Circuits have invalidated our definition of “destruction or adverse modification” (50 CFR 402.02) (see *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F.3d 1059 (9<sup>th</sup> Cir. 2004) and *Sierra Club v. U.S. Fish and Wildlife Service*, 245 F.3d 434 (5<sup>th</sup> Cir. 2001)), and we do not rely on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat. Under the statutory provisions of

the Act, we determine destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would remain functional (or retain the current ability for the primary constituent elements to be functionally established) to serve its intended conservation role for the species.

If a species is listed or critical habitat is designated, section 7(a)(2) of the Act requires Federal agencies to insure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. As a result of this consultation, we document compliance with the requirements of section 7(a)(2) through our issuance of:

(1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or

(2) A biological opinion for Federal actions that may affect, but are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to result in jeopardy to a listed species or the destruction or adverse modification of critical habitat, we also provide reasonable and prudent alternatives to the project, if any are identifiable, to avoid these outcomes. We define “reasonable and prudent alternatives” at 50 CFR 402.02 as alternative actions identified during consultation that:

- (1) Can be implemented in a manner consistent with the intended purpose of the action,
- (2) Can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction,
- (3) Are economically and technologically feasible, and
- (4) Would, in the Director's opinion, avoid jeopardizing the continued existence of the listed species or destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where a new species is listed or critical habitat is subsequently designated that may be affected and the Federal agency has retained discretionary involvement or control over the action (such discretionary involvement or control over the action is authorized by law). Consequently, Federal agencies may need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions with discretionary involvement or control may affect subsequently listed species or designated critical habitat.

Federal activities that may affect *Carex lutea* or its designated critical habitat require section 7 consultation under the Act. Activities on State, Tribal, local, or private

lands requiring a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from us under section 10 of the Act) or involving some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency) are subject to the section 7(a)(2) consultation process. Federal actions not affecting listed species or critical habitat, and actions on State, Tribal, local, or private lands that are not federally funded, authorized, or permitted do not require section 7 consultations.

*Application of the “Adverse Modification” Standard*

In making the adverse modification determination, the key factor is whether, with implementation of the Federal action, the affected critical habitat would continue to serve its intended conservation role for the species. Activities that may destroy or adversely modify critical habitat are those that alter the physical and biological features to an extent that appreciably reduces the conservation value of critical habitat for *Carex lutea*. As discussed above, the role of critical habitat units is to support life-history needs of the species and provide for the conservation of the species.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe, in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such designation.

Activities that may affect critical habitat, when carried out, funded, or authorized by a Federal agency, should result in consultation for *Carex lutea*. These activities include, but are not limited to:

(1) Actions that would result in ground disturbance to sunny to partially tree-shaded areas or ecotones between savannas and hardwood forests. Such activities could include, but are not limited to: Residential, commercial, or recreational development; ORV activity; dispersed recreation; silviculture practices (including timber harvest); new road construction or widening; existing road and utility maintenance; and mining. These activities could cause direct loss of *Carex lutea* occupied areas, and affect ecotones by damaging or eliminating habitat, altering soil composition due to increased erosion, and increasing densities of nonnative plant species.

In addition, changes in soil composition may lead to changes in the vegetation composition, such as growth of shrub cover resulting in decreased density or vigor of individual *Carex lutea* plants. These activities may also lead to changes in water flows and inundation periods that would degrade, reduce, or eliminate the habitat necessary for the growth and reproduction of *Carex lutea*.

(2) Actions that would significantly alter the hydrological regime of sunny to partially tree-shaded areas or ecotones between savannas and hardwood forests. Such activities could include residential or recreational development adjacent to savanna and

hardwood forest ecotones, timber harvest and other silviculture practices, ORV activity, dispersed recreation, new road construction or widening, existing road and utility line maintenance, and mining. These activities could alter surface soil layers and hydrological regimes in a manner that promotes loss of soil matrix components and moisture necessary to support the growth and reproduction of *Carex lutea*.

(3) Actions that would significantly reduce pollination or seed set (reproduction). Such activities could include, but are not limited to, residential or recreational development, and mowing or herbiciding prior to seed set. These activities could prevent reproduction by reducing the numbers of pollinators, or by removal or destruction of reproductive plant parts.

## **Exemptions**

### *Application of Section 4(a)(3) of the Act*

The Sikes Act Improvement Act of 1997 (Sikes Act) (16 U.S.C. 670a) required each military installation that includes land and water suitable for the conservation and management of natural resources to complete an integrated natural resources management plan (INRMP) by November 17, 2001. An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found on the base.

The National Defense Authorization Act for Fiscal Year 2004 (Pub. L. 108-136) amended the Act to limit areas eligible for designation as critical habitat. Specifically, section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: “The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.”

There were no Department of Defense lands with a completed INRMP within our proposed critical habitat designation. Therefore, we are not exempting any lands from this final designation of critical habitat for *Carex lutea* under section 4(a)(3)(B)(i) of the Act.

## **Exclusions**

### *Application of Section 4(b)(2) of the Act*

Section 4(b)(2) of the Act states that the Secretary shall designate and make revisions to critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the

benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, the statute on its face, as well as the legislative history, are clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor.

Under section 4(b)(2) of the Act, the Secretary may exclude an area from designated critical habitat based on economic impacts, impacts on national security, or any other relevant impacts. In considering whether to exclude a particular area from the designation, we must identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, and determine whether the benefits of exclusion outweigh the benefits of inclusion. If based on this analysis, we make this determination, then the Secretary can exert his discretion to exclude the area only if such exclusion would not result in the extinction of the species.

#### Economic Impacts

Under section 4(b)(2) of the Act, we consider the economic impacts of specifying any particular area as critical habitat. In order to consider economic impacts, we prepared a draft economic analysis (DEA), which we made available for public review on August 3, 2010 (75 FR 45592), based on the March 10, 2010, proposed rule (75 FR 11080). We opened a comment period on the DEA until September 2, 2010; however, we received no comments on the DEA. Following the close of the comment period, a

final analysis of the potential economic effects of the designation was developed, taking into consideration any new information.

The intent of the final economic analysis (FEA) is to quantify the economic impacts of all potential conservation efforts for *Carex lutea*. Some of these costs will likely be incurred regardless of whether we designate critical habitat (baseline). The economic impact of the final critical habitat designation is analyzed by comparing scenarios both “with critical habitat” and “without critical habitat.” The “without critical habitat” scenario represents the baseline for the analysis, considering protections already in place for the species (e.g., under the Federal listing and other Federal, State, and local regulations). The baseline, therefore, represents the costs incurred regardless of whether critical habitat is designated. The “with critical habitat” scenario describes the incremental impacts associated specifically with the designation of critical habitat for the species. The incremental conservation efforts and associated impacts are those not expected to occur absent the designation of critical habitat for the species. In other words, the incremental costs are those attributable solely to the designation of critical habitat above and beyond the baseline costs; these are the costs we consider in the final designation of critical habitat. The analysis looks retrospectively at baseline impacts incurred since the species was listed (2002), and forecasts both baseline and incremental impacts likely to occur with the designation of critical habitat.

The FEA also addresses how potential economic impacts are likely to be distributed, including an assessment of any local or regional impacts of habitat

conservation and the potential effects of conservation activities on government agencies, private businesses, and individuals. The FEA measures lost economic efficiency associated with residential and commercial development and public projects and activities, such as economic impacts on water management and transportation projects, Federal lands, small entities, and the energy industry. Decision-makers can use this information to assess whether the effects of the designation might unduly burden a particular group or economic sector. Finally, the FEA looks retrospectively at costs that were incurred since January 23, 2002, when we listed *Carex lutea* under the Act (67 FR 3120) and considers those costs that may occur in the 20 years following the designation of critical habitat, which was determined to be the appropriate period for analysis because limited planning information was available for most activities to forecast activity levels for projects beyond a 20-year timeframe. The FEA did not identify any economic impacts of *Carex lutea* conservation efforts associated with development activities.

The FEA estimates that no economic impacts are likely to result from the designation of critical habitat for *Carex lutea*. This determination is based primarily on the fact that more than 80 percent of the lands we are designating as critical habitat is already subject to conservation measures that benefit the plant. Economic impacts are unlikely in the remaining 20 percent, given the limited potential for future economic activity and the low probability of a Federal nexus that would require consultation with the Service.

Consequently, the Secretary has determined not to exercise his discretion to exclude any areas from this designation of critical habitat for *Carex lutea* based on economic impacts. A copy of the FEA with supporting documents may be obtained by contacting the Raleigh Fish and Wildlife Office (see **ADDRESSES**) or for downloading from the Internet at <http://www.regulations.gov>.

#### National Security Impacts

Under section 4(b)(2) of the Act, we consider whether there are lands owned or managed by the Department of Defense where a national security impact might exist. In preparing this rule, we have determined that the lands within the designation of critical habitat for *Carex lutea* are not owned or managed by the Department of Defense, and therefore, there are no impacts to national security. Consequently, the Secretary has determined not to exercise his discretion to exclude any areas from this designation based on impacts on national security.

#### Other Relevant Impacts

Under section 4(b)(2) of the Act, in addition to economic impacts and impacts on national security, we consider any other relevant impacts. In determining what other impacts may be relevant, we consider a number of factors including whether the landowners have developed any habitat conservation plans (HCPs) or other management plans for the area, or whether there are conservation partnerships that would be

encouraged by designation of, or exclusion from, critical habitat. In addition, we look at any Tribal issues, and consider the government-to-government relationship of the United States with Tribal entities. We also consider any social impacts that might occur because of the designation.

In preparing this rule, we have determined that there are currently no HCPs or other management plans for *Carex lutea*. Additionally, the designation does not include any Tribal lands or trust resources. We anticipate no impact to Tribal lands, partnerships, or HCPs or other management plans from this critical habitat designation. Consequently, the Secretary has determined not to exercise his discretion to exclude any areas from this designation based on other relevant impacts.

## **Required Determinations**

### *Regulatory Planning and Review—Executive Order 12866*

The Office of Management and Budget (OMB) has determined that this rule is not significant under Executive Order 12866 (E.O. 12866). OMB bases its determination upon the following four criteria:

(1) Whether the rule will have an annual effect of \$100 million or more on the economy or adversely affect an economic sector, productivity, jobs, the environment, or other units of the government.

(2) Whether the rule will create inconsistencies with other Federal agencies' actions.

(3) Whether the rule will materially affect entitlements, grants, user fees, loan programs, or the rights and obligations of their recipients.

(4) Whether the rule raises novel legal or policy issues.

Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*)

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended RFA to require Federal agencies to provide a statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities. In this final rule, we are certifying that the critical habitat designation for *Carex lutea* will not have a significant economic impact on a substantial number of small entities. The following discussion explains our rationale.

According to the Small Business Administration, small entities include small organizations, such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents; as well as small businesses (13 CFR 121.201). Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than \$5 million in annual sales, general and heavy construction businesses with less than \$27.5 million in annual business, special trade contractors doing less than \$11.5 million in annual business, and agricultural businesses with annual sales less than \$750,000. To determine if potential economic impacts to these small entities are significant, we consider the types of activities that might trigger regulatory impacts under this rule, as well as the types of project modifications that may result. In general, the term significant economic impact is meant to apply to a typical small business firm's business operations.

To determine if the critical habitat designation for *Carex lutea* could significantly affect a substantial number of small entities, we consider the number of small entities affected within particular types of economic activities, such as residential and commercial development. We apply the “substantial number” test individually to each industry to determine if certification is appropriate. However, the SBREFA does not explicitly define “substantial number” or “significant economic impact.” Consequently, to assess whether a “substantial number” of small entities is affected by this designation, this analysis considers the relative number of small entities likely to be impacted in an area. In some circumstances, especially with critical habitat designations of limited

extent, we may aggregate across all industries and consider whether the total number of small entities affected is substantial. In estimating the number of small entities potentially affected, we also consider whether their activities have any Federal involvement.

Designation of critical habitat only affects activities authorized, funded, or carried out by Federal agencies. Some kinds of activities are unlikely to have any Federal involvement and so will not be affected by critical habitat designation. In areas where the species is present, Federal agencies already are required to consult with us under section 7 of the Act on activities they authorize, fund, or carry out that may affect *Carex lutea*. Federal agencies also must consult with us if their activities may affect critical habitat. Designation of critical habitat, therefore, could result in an additional economic impact on small entities due to the requirement to reinitiate consultation for ongoing Federal activities (see *Application of the “Adverse Modification” Standard* section).

In our FEA of the critical habitat designation, we evaluated the potential economic effects on small entities resulting from conservation actions related to the designation of critical habitat for *Carex lutea*. The analysis is based on the estimated impacts associated with the rulemaking as described in Chapters 4 through 6 of the FEA, and evaluated the potential for economic impacts related to development and silvicultural activities. The economic analysis additionally considered the potential economic impacts of the designation on transportation and utilities projects, but concluded that these activities were not likely to incur measurable economic impacts.

As discussed in Chapter 4 and Appendix A, the FEA did not identify any incremental costs resulting from the critical habitat designation. This determination is based on the fact that more than 80 percent of the critical habitat we are designating in this rule is already subject to conservation measures that benefit the plant. Economic impacts are unlikely in the remaining 20 percent, given the limited potential for future economic activity and the low probability of a Federal nexus that would require consultation with the Service. Therefore, based on this analysis, we do not expect this regulation to have a significant impact on any small businesses.

In summary, we considered whether this designation will result in a significant economic impact on a substantial number of small entities, and we determined that we do not expect this regulation to have a significant impact on any small entities. Therefore, we are certifying that the designation of critical habitat for *Carex lutea* will not have a significant economic impact on a substantial number of small entities, and a regulatory flexibility analysis is not required.

#### *Energy Supply, Distribution, or Use—Executive Order 13211*

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare Statements of Energy Effects when undertaking certain actions. The OMB has provided guidance for implementing this Executive Order that outlines nine outcomes that may constitute “a

significant adverse effect” when compared to no regulatory action under consideration. As discussed in Appendix A, the FEA finds that none of these criteria are relevant to this analysis. The economic analysis concludes that because no modifications are anticipated to result from the designation of critical habitat, energy-related impacts are not expected. Because no incremental impacts associated specifically with this rulemaking on the production, distribution, or use of energy are forecast, designation of critical habitat for *Carex lutea* is not expected to lead to any adverse outcomes (such as a reduction in electricity production or an increase in the cost of energy production or distribution). A Statement of Energy Effects is not required.

*Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)*

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*), we make the following findings:

(1) This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or Tribal governments, or the private sector, and includes both “Federal intergovernmental mandates” and “Federal private sector mandates.” These terms are defined in 2 U.S.C. 658(5)-(7). “Federal intergovernmental mandate” includes a regulation that “would impose an enforceable duty upon State, local, or Tribal governments” with two exceptions. It excludes “a condition of Federal assistance.” It also excludes “a duty arising from participation in a voluntary Federal program,” unless

the regulation “relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and Tribal governments under entitlement authority,” if the provision would “increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal Government’s responsibility to provide funding,” and the State, local, or Tribal governments “lack authority” to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.”

The designation of critical habitat does not impose a legally binding duty on non-Federal government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not jeopardize the continued existence of the species, or destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted

because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply; nor would critical habitat shift the costs of the large entitlement programs listed above onto State governments.

(2) As discussed in the FEA of the designation of critical habitat for *Carex lutea*, we do not believe that this rule will significantly or uniquely affect small governments because it will not produce a federal mandate of \$100 million or greater in any year; that is, it is not a “significant regulatory action” under the Unfunded Mandates Reform Act. The lands we are designating as critical habitat are owned by private individuals, The Nature Conservancy, and the State of North Carolina (Division of Parks and Recreation, Department of Transportation and Wildlife Resources Commission). None of these government entities fit the definition of “small governmental jurisdiction.” The economic analysis also identified no cost resulting from the critical habitat designation. Because no incremental costs are anticipated, no small entities are expected to be affected by the rule. Therefore, a Small Government Agency Plan is not required.

#### Takings—Executive Order 12630

In accordance with E.O. 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we have analyzed the potential takings implications of designating critical habitat for *Carex lutea* in a takings implications assessment. Critical habitat designation does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of

habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. The takings implications assessment concludes that this designation of critical habitat for *Carex lutea* does not pose significant takings implications for lands within or affected by the designation.

*Federalism—Executive Order 13132*

In accordance with E.O. 13132 (Federalism), this rule does not have significant Federalism effects. A Federalism assessment is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of this critical habitat designation with, appropriate State resource agencies in North Carolina. The designation of critical habitat for *Carex lutea* will impose no additional restrictions to those currently in place and, therefore, will have little incremental impact on State and local governments and their activities. The designation of critical habitat may have some benefit to these governments because the areas that contain the features essential to the conservation of the species are more clearly defined, and the essential features themselves are specifically identified. While making this definition and identification does not alter where and what federally sponsored activities may occur, it may assist local governments in long-range planning (rather than having them wait for case-by-case section 7 consultations to occur).

Where State and local governments require approval or authorization from a Federal agency for actions that may affect critical habitat, consultation under section

7(a)(2) of the Act will be required. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

*Civil Justice Reform—Executive Order 12988*

In accordance with E.O. 12988 (Civil Justice Reform), the Office of the Solicitor has determined that this rule does not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Order. We are designating critical habitat in accordance with the provisions of the Act. This final rule uses standard property descriptions and identifies the physical and biological features essential to the conservation of *Carex lutea* within the designated areas to assist the public in understanding the habitat needs of the species.

*Paperwork Reduction Act of 1995*

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or

sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

### *National Environmental Policy Act*

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses as defined by National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

### Government-to-Government Relationship with Tribes

In accordance with the President's memorandum of April 29, 1994, Government-to-Government Relations with Native American Tribal Governments (59 FR 22951), E.O. 13175, and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 "American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act," we readily acknowledge our responsibilities to work directly with Tribes in developing programs for healthy ecosystems, to acknowledge that

tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to Tribes.

We have determined that there are no tribal lands occupied at the time of listing that contain the features essential for the conservation, and no tribal lands that are essential for the conservation, of *Carex lutea*. Therefore, we are not designating critical habitat for *Carex lutea* on tribal lands.

### **References Cited**

A complete list of references cited in this rulemaking is available upon request from the Field Supervisor, Raleigh Fish and Wildlife Office (see **ADDRESSES**) or from <http://www.regulations.gov>.

### **Authors**

The primary authors of this package are the staff members of the Raleigh Fish and Wildlife Office.

### **List of Subjects in 50 CFR Part 17**

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

## Regulation Promulgation

Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

### **PART 17—[AMENDED]**

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1544; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.

2. In § 17.12(h), revise the entry for “*Carex lutea*” under “Flowering Plants” in the List of Endangered and Threatened Plants to read as follows:

#### **§ 17.12 Endangered and threatened plants.**

\* \* \* \* \*

(h) \* \* \*

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						

FLOWERING PLANTS

\* \* \* \* \*

<i>Carex lutea</i>	Golden sedge	U.S.A. (NC)	Cyperaceae	E	721	17.96(a)	NA
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\* \* \* \* \*

3. In § 17.96(a), amend paragraph (a) by adding an entry for “*Carex lutea* (golden sedge),” in alphabetical order under the family Cyperaceae, to read as follows:

**§ 17.96 Critical habitat—plants.**

(a) *Flowering plants.*

\* \* \* \* \*

Family Cyperaceae: *Carex lutea* (golden sedge)

(1) Critical habitat units are depicted for Onslow and Pender Counties, NC, on the maps below.

(2) The primary constituent element of the physical and biological features essential to the conservation of *Carex lutea* is Pine Savanna (Very Wet Clay Variant) natural plant community or ecotones that contain:

(i) Moist to completely saturated loamy fine sands, fine sands, fine sandy loams, and loamy sands soils with a pH between 5.5 and 7.2;

(ii) Open to relatively open canopy that allows full to partial sunlight to penetrate to the herbaceous layer between savannas and hardwood forests; and

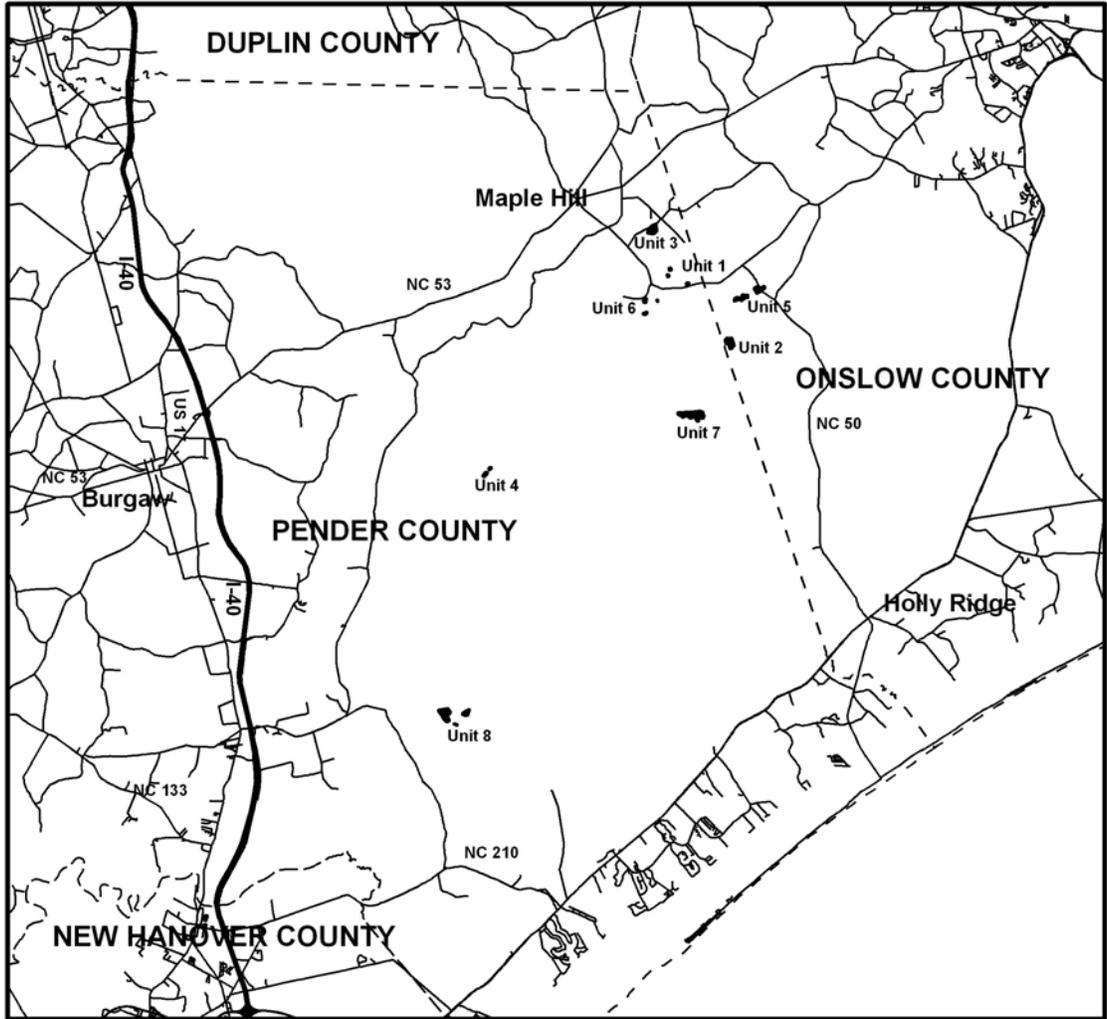
(iii) Areas of bare soil immediately adjacent (within 12 inches (30 centimeters)) to mature *Carex lutea* plants where seeds may fall and germinate or existing plants may expand in size.

(3) Critical habitat does not include manmade structures existing on the effective date of this rule and not containing the primary constituent element, such as buildings, aqueducts, runways, roads, and other paved areas, and the land on which such structures are located.

(4) Critical habitat map units. Data layers defining map units were created using a base of aerial photographs (USDA National Agriculture Imagery Program; NAIP 2008). Critical habitat units were then mapped using Universal Transverse Mercator (UTM) zone 18 North American Datum (NAD) 1983 coordinates. These coordinates establish the vertices and endpoints of the boundaries of the units and subunits.

(5) Note: Index Map (Map 1) for critical habitat for *Carex lutea* in Onslow and Pender Counties, NC, follows:

Index Map  
 Critical Habitat for *Carex lutea* (golden sedge), Pender and Onslow Counties, North Carolina



**LEGEND**

- Critical Habitat
- Interstate Highway
- Secondary Roads
- County Boundary

N

Miles

Kilometers



(6) Unit 1, subunits A, B, and C, for *Carex lutea*: Watkins Savanna, Pender County, NC.

(i) Unit 1, subunits A, B, and C, for *Carex lutea* comprises 3.8 acres (ac) (1.5 hectares (ha)) of somewhat overgrown Pine Savanna habitat. Unit 1 is located approximately 5.1 miles (mi) (8.2 kilometers (km)) southeast of the intersection of NC 50 and NC 53, and all three subunits are on the north side of NC 50.

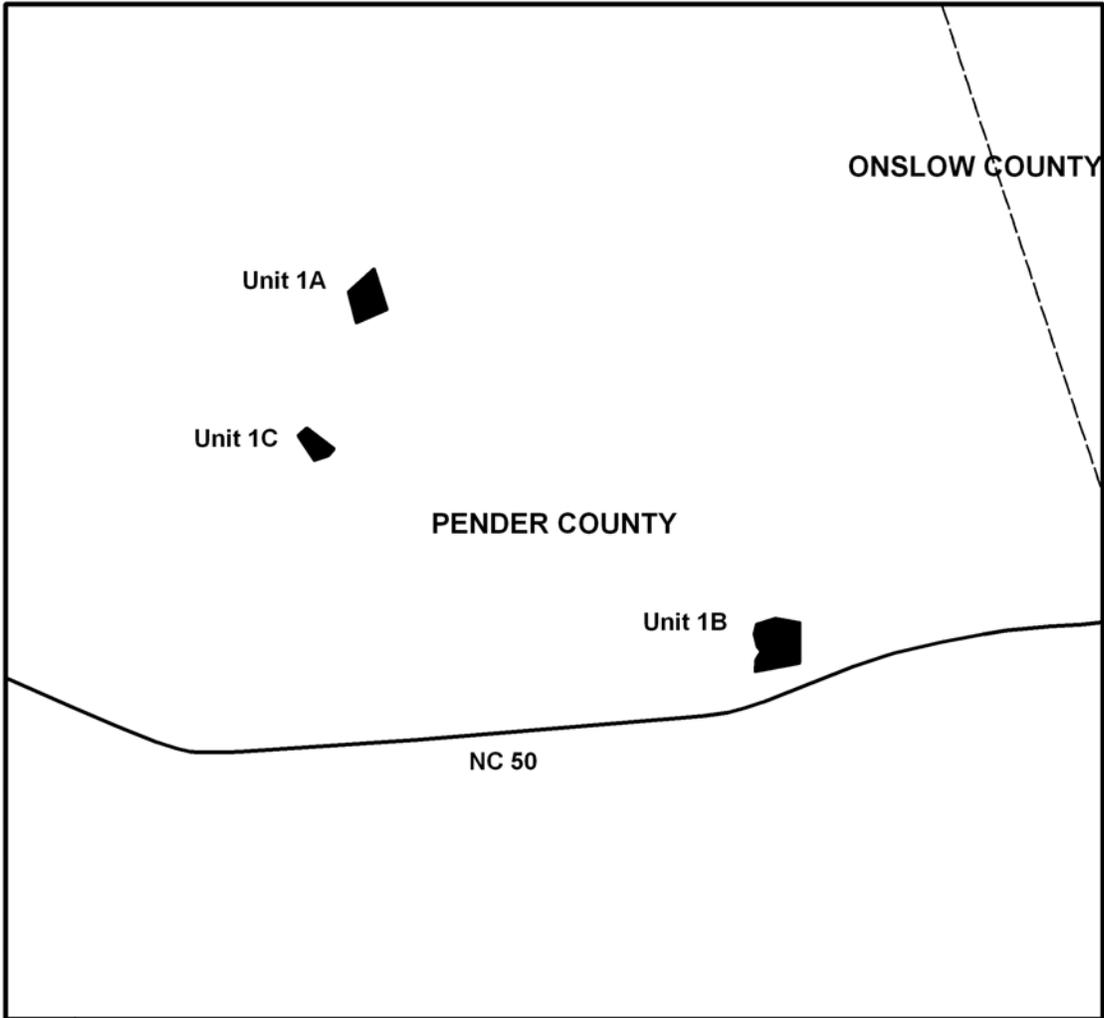
(ii) Subunit 1A. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 732264, 99984; 732203, 99954; 732184, 100016; 732234, 100065; 732264, 99984.

(iii) Subunit 1B. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 733143, 99288; 733053, 99268; 733055, 99291; 733065, 99309; 733055, 99320; 733048, 99344; 733053, 99364; 733090, 99377; 733140, 99370; 733143, 99288.

(iv) Subunit 1C. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 732155, 99677; 732128, 99667; 732093, 99716; 732109, 99732; 732166, 99692; 732155, 99677.

(v) Map of Unit 1 (Watkins Savanna) follows:

Unit 1  
Critical Habitat for *Carex lutea* (golden sedge), Pender County, North Carolina



**LEGEND**

-  Critical Habitat
-  Interstate Highway
-  Secondary Roads
-  County Boundary

N



 Miles  
0 0.05 0.1 0.2

 Kilometers  
0 0.1 0.2 0.4



**North Carolina**

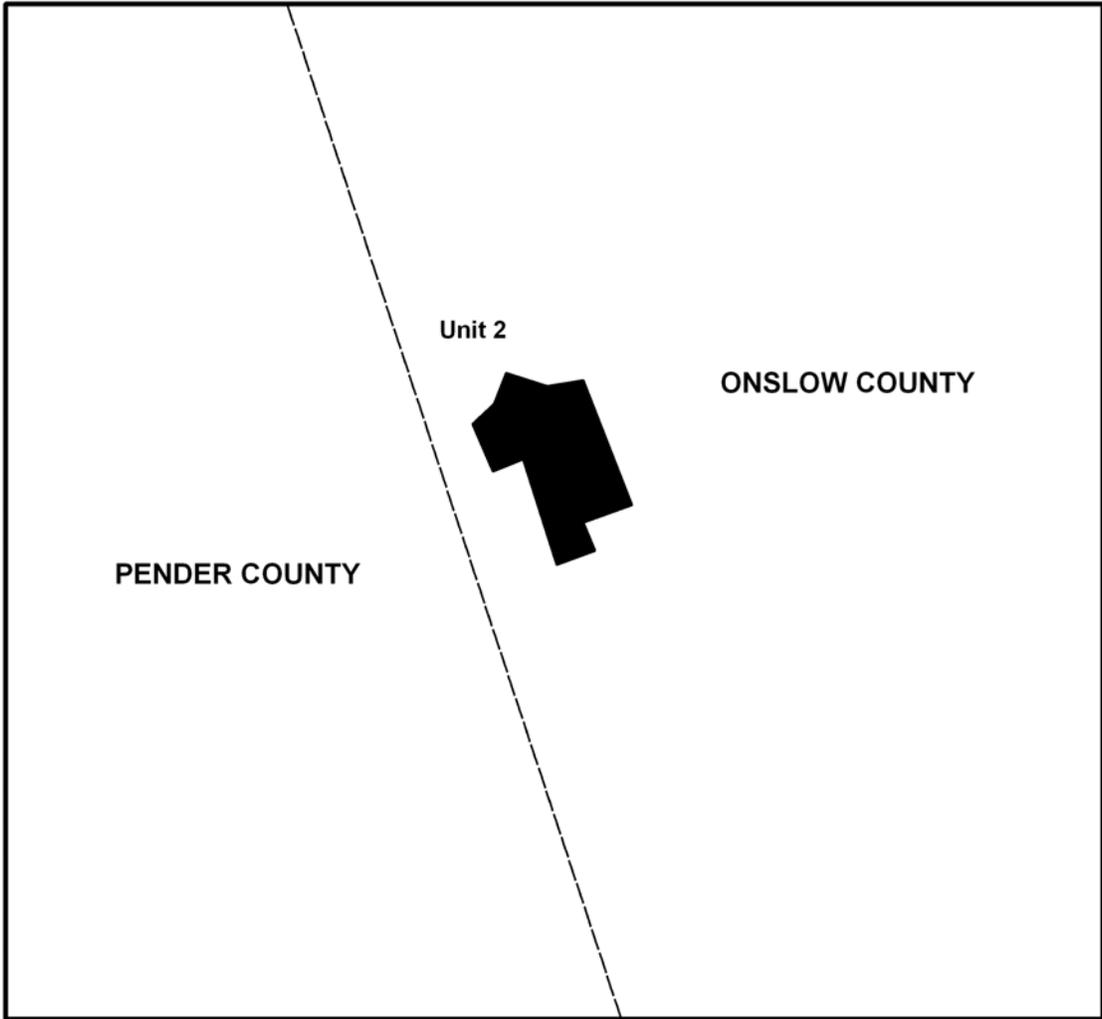
(7) Unit 2 for *Carex lutea*: Haws Run Mitigation Site, Onslow County, NC.

(i) Unit 2 for *Carex lutea* comprises 27.1 ac (11.0 ha) of Pine Savanna. Unit 2 is located approximately 7.6 mi (12.2 km) southeast of the intersection of NC 50 and NC 53, on the south side of NC 50.

(ii) Unit 2. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N):  
735078, 96823; 735188, 96794; 735282, 96812; 735423, 96489; 735296, 96437; 735329, 96364;  
735233, 96324; 735132, 96601; 735053, 96564; 734996, 96686; 735049, 96740; 735078, 96823.

(iii) Map of Unit 2 (Haws Run Mitigation Site) follows:

Unit 2  
Critical Habitat for *Carex lutea* (golden sedge), Onslow County, North Carolina



**LEGEND**

- Critical Habitat
- Interstate Highway
- Secondary Roads
- County Boundary

N

Miles

Kilometers

North Carolina

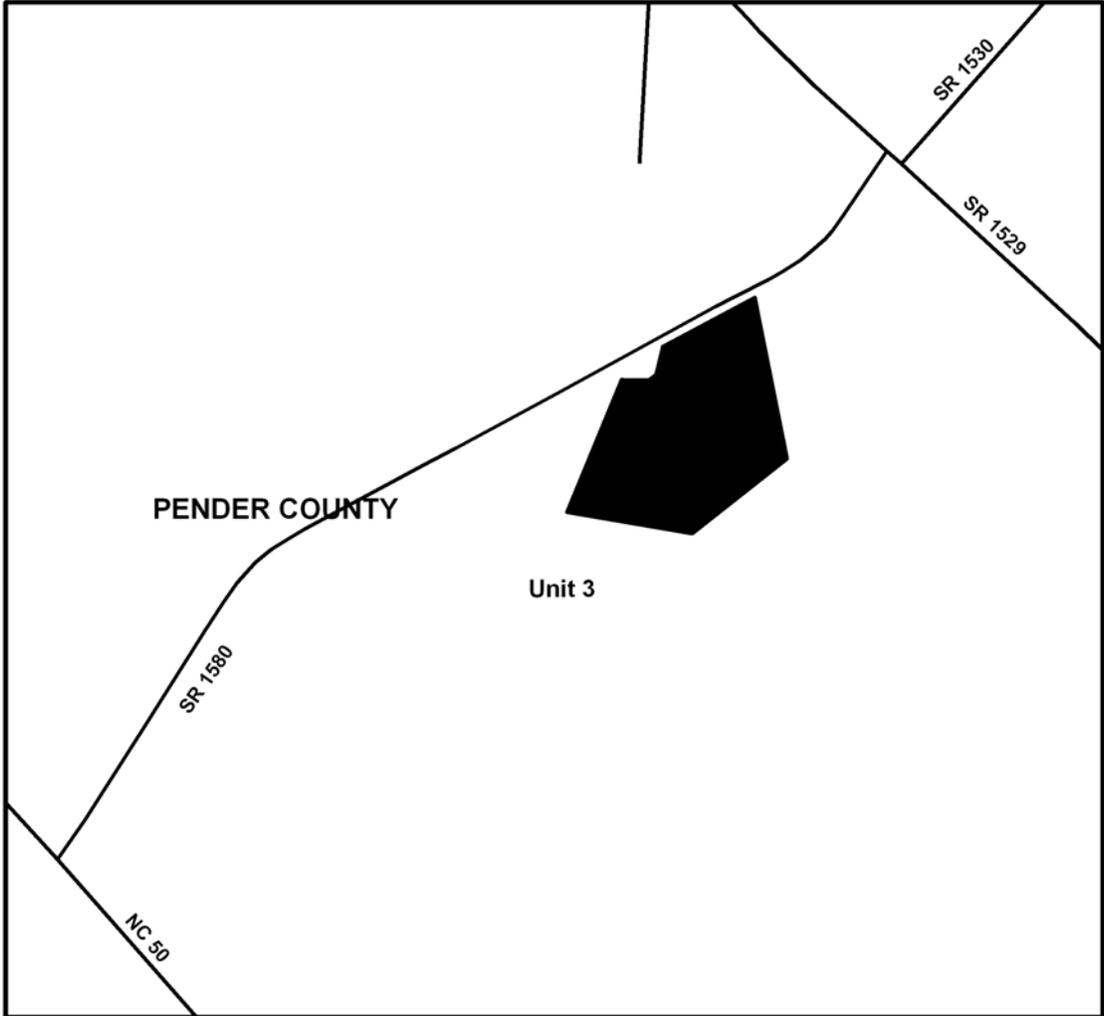
(8) Unit 3 for *Carex lutea*: Maple Hill School Road Savanna, Pender County, NC.

(i) Unit 3 for *Carex lutea* comprises 27.7 ac (11.2 ha) of Pine Savanna. Unit 3 is located approximately 3.7 mi (6.0 km) southeast of the intersection of NC 50 and NC 53, east of SR 1580 and north of NC 50.

(ii) Unit 3. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 731509, 101826; 731333, 101675; 731094, 101706; 731187, 101962; 731239, 101964; 731253, 101975; 731264, 102030; 731435, 102129; 731509, 101826.

(iii) Map of Unit 3 (Maple Hill School Road Savanna) follows:

Unit 3  
Critical Habitat for *Carex lutea* (golden sedge), Pender County, North Carolina



**LEGEND**

-  Critical Habitat
-  Interstate Highway
-  Secondary Roads
-  County Boundary

N


Miles



Kilometers



(9) Unit 4, subunits A and B, for *Carex lutea*: Southwest Ridge Savanna, Pender County, NC.

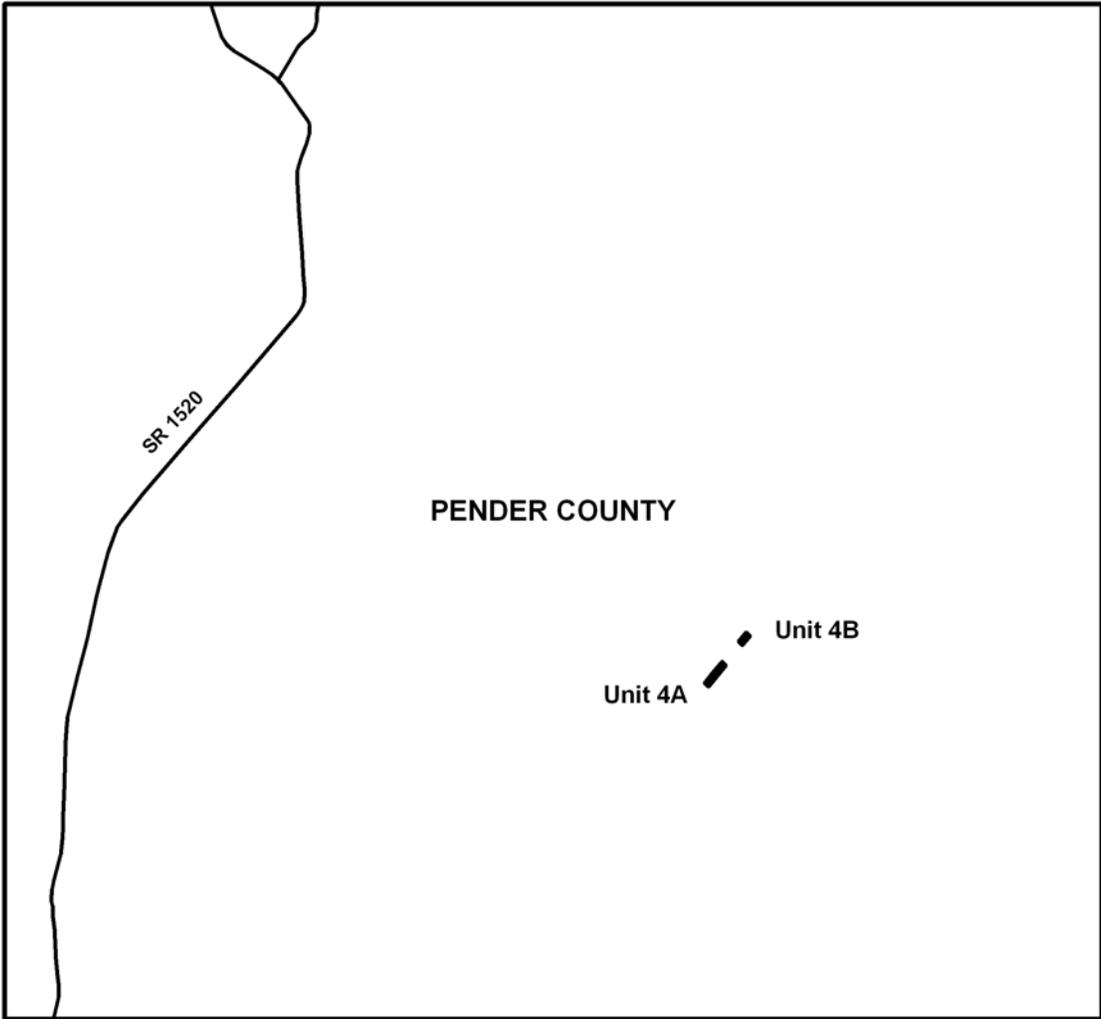
(i) Unit 4, subunits A and B, for *Carex lutea* comprises 3.3 ac (1.3 ha) of maintained power line on the edge of Pine Savanna. Unit 4 is located approximately 9.1 mi (14.7 km) southwest of the intersection of NC 50 and NC 53.

(ii) Subunit 4A. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 723852, 89908; 723720, 89734; 723688, 89761; 723756, 89851; 723820, 89935; 723852, 89908.

(iii) Subunit 4B. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 724036, 90152; 723975, 90075; 723946, 90104; 724004, 90177; 724036, 90152.

(iv) Map of Unit 4 (Southwest Ridge Savanna) follows:

Unit 4  
Critical Habitat for *Carex lutea* (golden sedge), Pender County, North Carolina



**LEGEND**

- Critical Habitat
- Interstate Highway
- Secondary Roads
- County Boundary

N

Miles  
0 0.3 0.6 1.2

Kilometers  
0 0.35 0.7 1.4

**North Carolina**

(10) Unit 5, subunits A, B, C, D and E, for *Carex lutea*: Sandy Run Savannas, Onslow County, NC.

(i) Unit 5, subunits A, B, C, D and E, for *Carex lutea* comprises 25.2 ac (10.2 ha) of power line right-of-way, ecotone and Pine Savanna habitat. Unit 5 is located approximately 7.1 mi (11.4 km) southeast of the intersection of NC 50 and NC 53. Subunit A is located in a power line corridor east of NC 50, and subunits B, C, D, and E are west of NC 50.

(ii) Subunit 5A. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 736771, 99308; 736625, 99178; 736587, 99216; 736737, 99350; 736771, 99308.

(iii) Subunit 5B. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 735365, 98631; 735349, 98617; 735348, 98651; 735379, 98706; 735452, 98755; 735543, 98767; 735619, 98723; 735502, 98683; 735365, 98631.

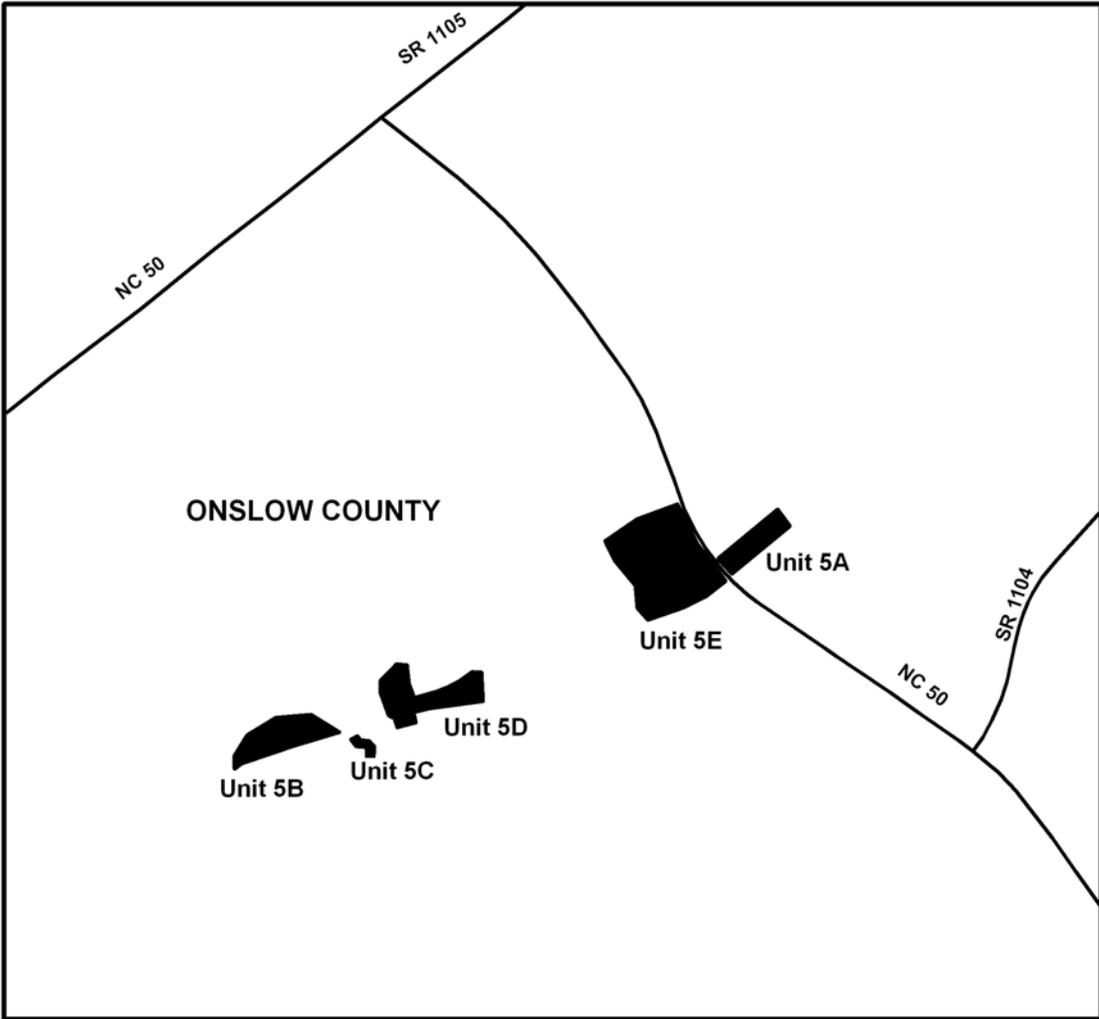
(iv) Subunit 5C. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 735711, 98665; 735692, 98664; 735692, 98680; 735687, 98688; 735664, 98688; 735650, 98706; 735666, 98715; 735673, 98706; 735697, 98704; 735711, 98689; 735711, 98670; 735711, 98665.

(v) Subunit 5D. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 735817, 98757; 735769, 98743; 735761, 98762; 735812, 98776; 735817, 98757; and, 735756, 98767; 735745, 98774; 735722, 98827; 735720, 98863; 735761, 98907; 735787, 98905; 735795, 98859; 735810, 98821; 735864, 98838; 735899, 98854; 735928, 98871; 735958, 98894; 735983, 98894; 735990, 98820; 735850, 98795; 735756, 98767.

(vi) Subunit 5E. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 736501, 99084; 736411, 99048; 736382, 99079; 736375, 99137; 736318, 99202; 736292, 99251; 736374, 99312; 736476, 99354; 736532, 99252; 736610, 99159; 736559, 99115; 736501, 99084.

(vii) Map of Unit 5 (Sandy Run Savannas) follows:

Unit 5  
Critical Habitat for *Carex lutea* (golden sedge), Onslow County, North Carolina



**LEGEND**

-  Critical Habitat
-  Interstate Highway
-  Secondary Roads
-  County Boundary

N



 Miles  
 0 0.1 0.2 0.4

 Kilometers  
 0 0.15 0.3 0.6



**North Carolina**

(11) Unit 6, subunits A, B, and C, for *Carex lutea*: The Neck Savanna, Pender County, NC.

(i) Unit 6, subunits A, B, and C, for *Carex lutea* comprises 4.4 ac (1.8 ha) of power line right-of-way, Pine Savanna habitat. Unit 6 is located approximately 5.3 mi (8.5 km) southeast of the intersection of NC 50 and NC 53. All three subunits are located south of NC 50. Subunits 6A and 6B are located in remnant Pine Savanna ecotones southeast of SR 1532, and Subunit 6C is located along a power line right-of-way adjacent to Williams Road.

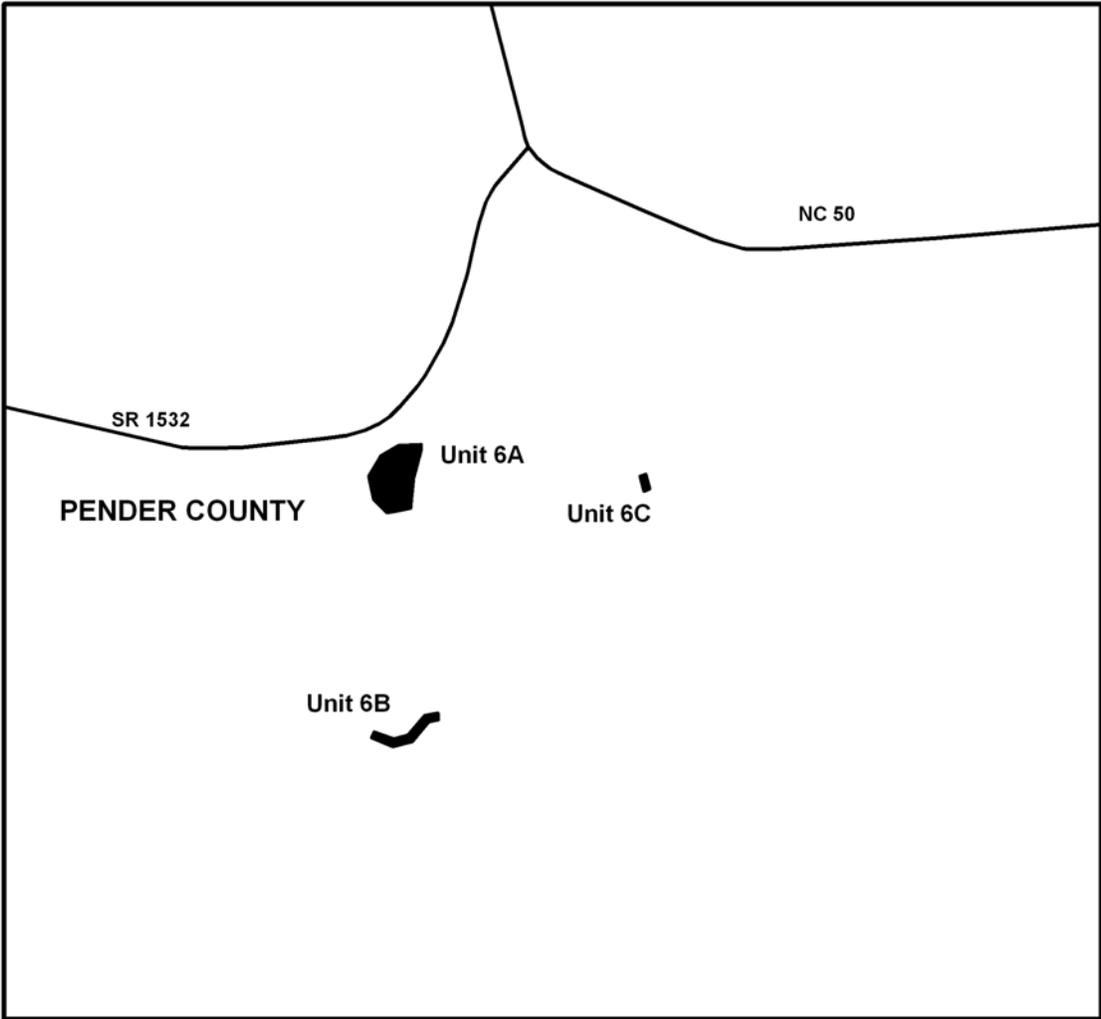
(ii) Subunit 6A. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 731077, 98383; 731055, 98378; 731023, 98410; 731008, 98465; 731036, 98516; 731078, 98542; 731132, 98546; 731132, 98531; 731117, 98465; 731114, 98417; 731112, 98391; 731077, 98383.

(iii) Subunit 6B. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 731177, 97874; 731139, 97824; 731093, 97810; 731042, 97830; 731047, 97843; 731094, 97828; 731130, 97839; 731168, 97888; 731198, 97895; 731200, 97879; 731177, 97874.

(iv) Subunit 6C. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 731691, 98462; 731678, 98456; 731668, 98491; 731680, 98496; 731691, 98462.

(v) Map of Unit 6 (The Neck Savanna) follows:

Unit 6  
Critical Habitat for *Carex lutea* (golden sedge), Pender County, North Carolina



**LEGEND**

-  Critical Habitat
-  Interstate Highway
-  Secondary Roads
-  County Boundary

N



 Miles

 Kilometers



**North Carolina**

(12) Unit 7, subunits A, B, and C, for *Carex lutea*: Shaken Creek Savanna, Pender County, NC.

(i) Unit 7, subunits A, B, and C, for *Carex lutea* comprises 57.7 ac (23.4 ha) of Pine Savanna habitat. Unit 7 is located approximately 8.6 mi (13.8 km) southeast of the intersection of NC 50 and NC 53. All three subunits are located west of NC 50. Subunit 7A is immediately south side of Flo Road and east of Alligator Lake Road. Subunit 7B is immediately south of Flo Road and west of Alligator Lake Road. Subunit 7C is immediately south of Flo Road and approximately 1,800 feet (549 meters) west of Alligator Lake Road.

(ii) Subunit 7A. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 734066, 92945; 734015, 92941; 733993, 92959; 733995, 92973; 733987, 92987; 733976, 93018; 733972, 93074; 733967, 93130; 733970, 93156; 733983, 93185; 734006, 93222; 734060, 93204; 734057, 93140; 734080, 93088; 734114, 93044; 734096, 92963; 734066, 92945.

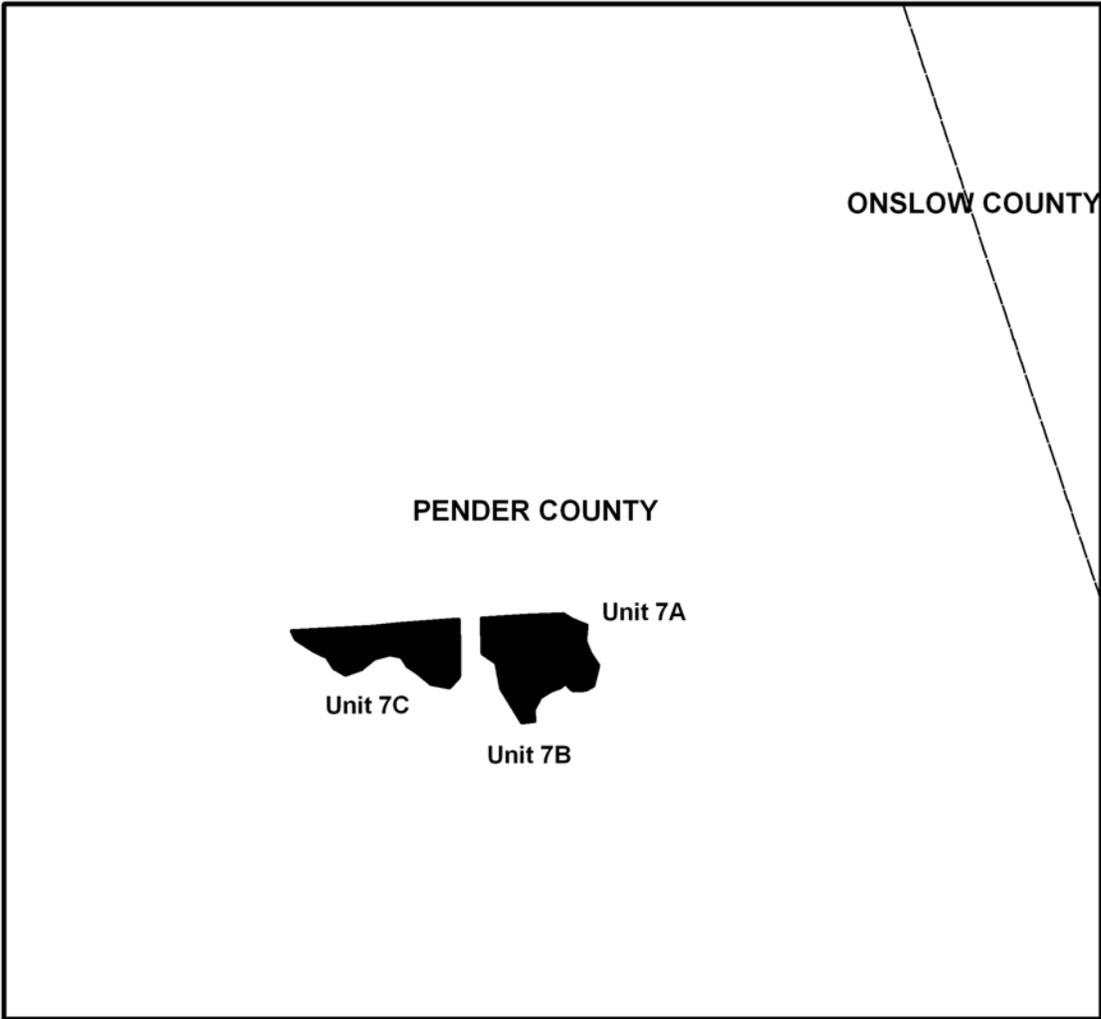
(iii) Subunit 7B. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 733868, 92812; 733817, 92804; 733727, 92937; 733704, 93040; 733648, 93073; 733640, 93213; 733823, 93232; 733964, 93244; 733997, 93225; 733955, 93155; 733966, 93022; 733985, 92968; 733959, 92949; 733926, 92936; 733886, 92909; 733862, 92857; 733868, 92812.

(iv) Subunit 7C. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 733556, 93081; 733560, 92976; 733522, 92933; 733449, 92943; 733393, 92985; 733351,

93010; 733327, 93048; 733280, 93055; 733217, 93035; 733165, 92990; 733106, 92968; 733059, 92992; 733030, 93034; 732976, 93056; 732902, 93101; 732883, 93132; 733202, 93163; 733318, 93178; 733549, 93206; 733556, 93081.

(v) Map of Unit 7 (Shaken Creek Savanna) follows:

Unit 7  
Critical Habitat for *Carex lutea* (golden sedge), Pender County, North Carolina



**LEGEND**

- Critical Habitat
- Interstate Highway
- Secondary Roads
- County Boundary

N

Miles  
0 0.15 0.3 0.6

Kilometers  
0 0.2 0.4 0.8

North Carolina

(13) Unit 8, subunits A, B, and C, for *Carex lutea*: McLean Savanna, Pender County, NC.

(i) Unit 8, subunits A, B, and C, for *Carex lutea* comprises 52.6 ac (21.3 ha) of Pine Savanna and ecotone habitat. Unit 8 is located approximately 16.4 mi (26.4 km) south of the intersection of NC 50 and NC 53 and approximately 2.1 mi (3.4 km) east of NC 210.

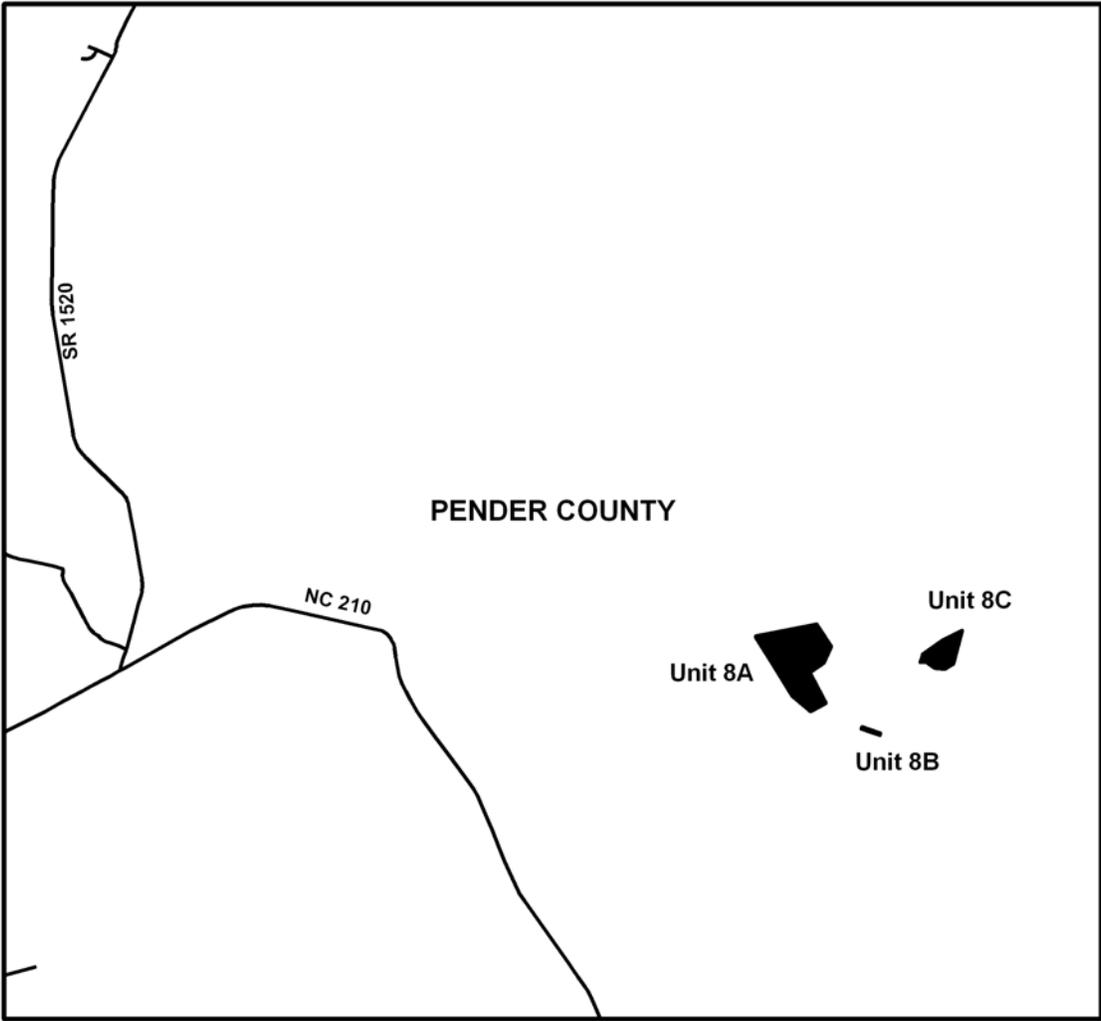
(ii) Subunit 8A. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 722520, 77995; 722417, 77935; 722283, 78037; 722146, 78244; 722013, 78436; 722019, 78444; 722433, 78542; 722540, 78390; 722492, 78276; 722398, 78205; 722520, 77995.

(iii) Subunit 8B. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 722780, 77840; 722846, 77820; 722907, 77802; 722903, 77787; 722842, 77806; 722774, 77825; 722780, 77840; 722780, 77840; 722779, 77841; 722780, 77840; 722780, 77840.

(iv) Subunit 8C. Land bounded by the following UTM Zone 18, NAD 83 coordinates (E,N): 723268, 78269; 723209, 78309; 723166, 78305; 723179, 78361; 723313, 78465; 723446, 78537; 723408, 78370; 723395, 78307; 723335, 78264; 723268, 78269.

(v) Map of Unit 8 (McLean Savanna) follows:

Unit 8  
Critical Habitat for *Carex lutea* (golden sedge), Pender County, North Carolina



**LEGEND**

- Critical Habitat
- Interstate Highway
- Secondary Roads
- County Boundary

N

Miles

0 0.3 0.6 1.2

Kilometers

0 0.375 0.75 1.5

**North Carolina**

\* \* \* \* \*

Dated: February 10, 2011

Thomas L. Strickland

Assistant Secretary for Fish and Wildlife and Parks

Billing Code 4310-55-P

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