threatened throughout an SPR, and the population in that significant portion is a valid DPS, we will list the DPS rather than the entire taxonomic species or subspecies. As stated above, we find the New England cottontail does not warrant listing throughout its range. Therefore, we must consider whether there are any significant portions of the range of the New England cottontail.

The SPR policy is applied to all status determinations, including analyses for the purposes of making listing, delisting, and reclassification determinations. The procedure for analyzing whether any portion is an SPR is similar, regardless of the type of status determination we are making. The first step in our analysis of the status of a species is to determine its status throughout all of its range. If we determine that the species is in danger of extinction, or likely to become so in the foreseeable future, throughout all of its range, we list the species as an endangered (or threatened) species and no SPR analysis will be required. If the species is neither in danger of extinction nor likely to become so throughout all of its range, we determine whether the species is in danger of extinction or likely to become so throughout a significant portion of its range. If it is, we list the species as an endangered or a threatened species, respectively; if it is not, we conclude that listing the species is not warranted.

When we conduct an SPR analysis, we first identify any portions of the species' range that warrant further consideration. The range of a species can theoretically be divided into portions in an infinite number of ways. However, there is no purpose to analyzing portions of the range that are not reasonably likely to be significant and endangered or threatened. To identify only those portions that warrant further consideration, we determine whether there is substantial information indicating that (1) the portions may be significant and (2) the species may be in danger of extinction in those portions or likely to become so within the foreseeable future. We emphasize that answering these questions in the affirmative is not a determination that the species is endangered or threatened throughout a significant portion of its range—rather it is a step in determining whether a more detailed analysis of the issue is required. In practice, a key part of this analysis is whether the threats are geographically concentrated in some way. If the threats to the species are affecting it uniformly throughout its range, no portion is likely to warrant further consideration. Moreover, if any concentration of threats apply only to portions of the range that clearly do not meet the biologically based definition of ''significant'' (*i.e.,* the loss of that portion clearly would not be expected to increase the vulnerability to extinction of the entire species), those portions will not warrant further consideration.

If we identify any portions that may be both (1) significant and (2) endangered or threatened, we engage in a more detailed analysis to determine whether these standards are indeed met. The identification of an SPR does not create a presumption, prejudgment, or other determination as to whether the species in that identified SPR is endangered or threatened. We must go through a separate analysis to determine whether the species is endangered or threatened in the SPR. To determine whether a species is endangered or threatened throughout an SPR, we will use the same standards and methodology that we use to determine if a species is endangered or threatened throughout its range.

Depending on the biology of the species, its range, and the threats it faces, it may be more efficient to address the ''significant'' question first, or the status question first. Thus, if we determine that a portion of the range is not ''significant,'' we do not need to determine whether the species is endangered or threatened there; if we determine that the species is not endangered or threatened in a portion of its range, we do not need to determine if that portion is ''significant.''

The threats currently affecting the New England cottontail, without consideration for the planned or implemented conservation efforts, are occurring throughout the species' range. Habitat loss, predation, and the effects of small population size are affecting the species relatively uniformly across its range. In addition, the Conservation Strategy and its specific actions will continue to be implemented throughout the species' range, and we have a high level of certainty that those efforts will be effective in addressing the species' rangewide threats. Therefore, we find that factors affecting the species are essentially uniform throughout its range, indicating no portion of the range warrants further consideration of possible endangered or threatened status under the Act.

Our review of the best available scientific and commercial information indicates that the New England cottontail is not in danger of extinction (endangered) nor likely to become endangered within the foreseeable future (threatened), throughout all or a significant portion of its range. Therefore, we find that listing the New England cottontail as an endangered or threatened species under the Act is not warranted at this time.

We request that you submit any new information concerning the status of, or threats to, the New England cottontail to our New England Field Office (see **ADDRESSES** section) whenever it becomes available. New information will help us monitor the New England cottontail and encourage its conservation. If an emergency situation develops for the New England cottontail, we will act to provide immediate protection.

References Cited

A complete list of references cited is available on the Internet at *http://www.regulations.gov* at Docket Number FWS–R5–ES–2015–0136 and upon request from the New England Field Office (see **ADDRESSES** section).

Author(s)

The primary author(s) of this document are the staff members of the New England Field Office.

Authority

The authority for this section is section 4 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: August 26, 2015.

Daniel M. Ashe,

Director, U.S. Fish and Wildlife Service.

[FR Doc. 2015–22885 Filed 9–11–15; 11:15 am]

BILLING CODE 4310–55–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R4–ES–2015–0129; 4500030113]

RIN 1018–BA93

Endangered and Threatened Wildlife and Plants; Threatened Species Status for Platanthera integrilabia (White Fringeless Orchid)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to list *Platanthera integrilabia* (white fringeless orchid), a plant species from Alabama, Georgia, Kentucky, Mississippi, South Carolina, and Tennessee, as a threatened species under the Endangered Species Act (Act). If we finalize this rule as proposed, it

would extend the Act's protections to this species.

DATES: We will accept comments received or postmarked on or before November 16, 2015. Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES**) must be received by 11:59 p.m. Eastern Time on the closing date. We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by October 30, 2015.

ADDRESSES: You may submit comments by one of the following methods:

(1) *Electronically:* Go to the Federal eRulemaking Portal: *http://www.regulations.gov*. In the Search box, enter FWS–R4–ES–2015–0129, which is the docket number for this rulemaking. Then, in the Search panel on the left side of the screen, under the Document Type heading, click on the Proposed Rules link to locate this document. You may submit a comment by clicking on ''Comment Now!''

(2) *By hard copy:* Submit by U.S. mail or hand-delivery to: Public Comments Processing, Attn: FWS–R4–ES–2015–0129; U.S. Fish and Wildlife Service, MS: BPHC, 5275 Leesburg Pike, Falls Church, VA 22041–3803.

We request that you send comments only by the methods described above. We will post all comments on *http://www.regulations.gov*. This generally means that we will post any personal information you provide us (see *Public Comments,* below, for more information).

FOR FURTHER INFORMATION CONTACT: Mary Jennings, Field Supervisor, U.S. Fish and Wildlife Service, Tennessee Ecological Services Field Office, 446 Neal Street, Cookeville, TN 38501; by telephone 931–528–6481; or by facsimile 931–528–7075. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. Under the Act, if we determine that a species is an endangered or threatened species throughout all or a significant portion of its range, we are required to promptly publish a proposal in the **Federal Register** and make a determination on our proposal within 1 year. Listing a species as an endangered or threatened species and designations and revisions of critical habitat can only be completed by issuing a rule.

This rule proposes the listing of *Platanthera integrilabia* (white fringeless orchid) as a threatened species. The white fringeless orchid is a candidate species for which we have on file sufficient information on biological vulnerability and threats to support preparation of a listing proposal, but for which development of a listing regulation has been precluded by other higher priority listing activities. This rule reassesses all available information regarding status of and threats to the white fringeless orchid.

This rule does not propose critical habitat for white fringeless orchid. We have determined that designation of critical habitat would not be prudent for this species because:

- Designation would increase the likelihood and severity of illegal collection of white fringeless orchid and thereby make enforcement of take prohibitions more difficult.
- This threat outweighs the benefits of designation.

The basis for our action. Under the Act, we may determine that a species is an endangered or threatened species based on any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. We have determined that the threats to white fringeless orchid consist primarily of destruction and modification of habitat (Factor A) resulting in excessive shading, soil disturbance, altered hydrology, and proliferation of invasive plant species; collecting for recreational or commercial purposes (Factor B); herbivory (Factor C); and small population sizes and dependence on specific pollinators and fungi to complete its life cycle (Factor E). Existing regulatory mechanisms have not led to a reduction or removal of threats posed to the species from these factors (see Factor D discussion).

We will seek peer review. We will seek comments from independent specialists to ensure that our designation is based on scientifically sound data, assumptions, and analyses. We will invite these peer reviewers to comment on our listing proposal.

Information Requested

Public Comments

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible. Therefore, we request comments or information from other concerned governmental agencies, Native American tribes, the scientific community, industry, or any other interested parties concerning this proposed rule. We particularly seek comments concerning:

(1) The white fringeless orchid's biology, range, and population trends, including:

(a) Biological or ecological requirements of the species, including habitat requirements for germination, growth, and reproduction;

(b) Genetics and taxonomy;

(c) Historical and current range, including distribution patterns;

(d) Historical and current population levels, and current and projected trends; and

(e) Past and ongoing conservation measures for the species, its habitat, or both.

(2) Factors that may affect the continued existence of the species, which may include habitat modification or destruction, overutilization, disease, predation, the inadequacy of existing regulatory mechanisms, or other natural or manmade factors.

(3) Biological, commercial trade, or other relevant data concerning any threats (or lack thereof) to this species and existing regulations that may be addressing those threats.

(4) The reasons why we should or should not designate habitat as ''critical habitat'' under section 4 of the Act (16 U.S.C. 1531 *et seq.*), including whether there are threats to the species from human activity, the degree of which can be expected to increase due to the designation, and whether that increase in threat outweighs the benefit of designation such that the designation of critical habitat is not prudent.

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include.

Please note that submissions merely stating support for or opposition to the action under consideration without providing supporting information, although noted, will not be considered in making a determination, as section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered or threatened species must be made ''solely on the basis of the best scientific and commercial data available.''

You may submit your comments and materials concerning this proposed rule by one of the methods listed in the **ADDRESSES** section. We request that you

send comments only by the methods described in the **ADDRESSES** section.

If you submit information via *http://www.regulations.gov,* your entire submission—including any personal identifying information—will be posted on the Web site. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on *http://www.regulations.gov*.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on *http://www.regulations.gov,* or by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Tennessee Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Because we will consider all comments and information received during the public comment period, our final determinations may differ from this proposal.

Public Hearing

Section 4(b)(5) of the Act provides for one or more public hearings on this proposal, if requested. Requests must be received within 45 days after the date of publication of this proposed rule in the **Federal Register**. Such requests must be sent to the address shown in the **FOR FURTHER INFORMATION CONTACT** section. We will schedule public hearings on this proposal, if any are requested, and announce the dates, times, and places of those hearings, as well as how to obtain reasonable accommodations, in the **Federal Register** and local newspapers at least 15 days before the hearing.

Peer Review

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), we will seek the expert opinions of at least three appropriate and independent specialists regarding this proposed rule. The purpose of peer review is to ensure that our listing determination is based on scientifically sound data, assumptions, and analyses. The peer reviewers have expertise with the white fringeless orchid's biology, habitat, physical or biological factors, distribution, and status, or have general botanical and conservation biology expertise.

Previous Federal Action

The Act requires the Service to identify species of wildlife and plants that are endangered or threatened, based on the best available scientific and commercial data. Section 12 of the Act directed the Secretary of the Smithsonian Institution to prepare a report on endangered and threatened plant species, which was published as House Document No. 94–51. The Service published a notice in the **Federal Register** on July 1, 1975 (40 FR 27824), in which we announced that more than 3,000 native plant taxa named in the Smithsonian's report and other taxa added by the 1975 notice would be reviewed for possible inclusion in the List of Endangered and Threatened Plants. The 1975 notice was superseded on December 15, 1980 (45 FR 82480), by a new comprehensive notice of review for native plants that took into account the earlier Smithsonian report and other accumulated information. On November 28, 1983 (48 FR 53640), a supplemental plant notice of review noted the status of various taxa. Complete updates of the plant notice were published on September 27, 1985 (50 FR 39526), February 21, 1990 (55 FR 6184), and September 30, 1993 (58 FR 51144).

White fringeless orchid was first listed as a Category 1 candidate in the December 15, 1980, review. Category 1 candidates included taxa for which the Service had sufficient information on hand to support the biological appropriateness of listing as endangered or threatened species. The species was reclassified as a Category 2 candidate in the November 28, 1983, review. Category 2 candidates included taxa for which the Service had information indicating that proposing to list the species as endangered or threatened was possibly appropriate, but for which sufficient data on biological vulnerability and threat were not available. Further biological research and field study usually was necessary to ascertain the status of taxa in this category.

In 1996, the Service eliminated candidate categories (February 28, 1996; 61 FR 7596), and white fringeless orchid was no longer a candidate until it was again elevated to candidate status on October 25, 1999 (64 FR 57534). The species was also included in subsequent candidate notices of review on October 30, 2001 (66 FR 54808), June 13, 2002 (67 FR 40657), May 4, 2004 (69 FR 24876), May 11, 2005 (70 FR 24870), September 12, 2006 (71 FR 53756), December 6, 2007 (72 FR 69034), December 10, 2008 (73 FR 75176), November 9, 2009 (74 FR 57804), November 10, 2010 (75 FR 69222), October 26, 2011 (76 FR 66370), November 21, 2012 (77 FR 69994), November 22, 2013 (78 FR 70104), and December 5, 2014 (79 FR 72450).

The 2011 Multi-District Litigation (MDL) settlement agreement specified that the Service will systematically, over a period of 6 years, review and address the needs of 251 candidate species to determine if they should be added to the Federal Lists of Endangered and Threatened Wildlife and Plants. The white fringeless orchid was on that list of candidate species. Therefore, the Service is making this proposed listing determination in order to comply with the conditions outlined in the MDL agreement.

Background

Species Information

Taxonomy and Species Description

White fringeless orchid was first recognized as a distinct taxon when D.S. Correll (1941, pp. 153–157) described it as a variety of *Habenaria* (*Platanthera*) *blephariglottis.* C.A. Luer (1975, p. 186) elevated the taxon to full species status. The currently accepted binomial for the species is *Platanthera integrilabia* (Correll) Luer. The description of this taxon at the full species level used the common name of ''monkey-face'' (Luer 1975, p. 186), as have some other publications (Zettler and Fairey 1990, p. 212; Zettler 1994, p. 686; Birchenko 2001, p. 9). A status survey report for the species recognized both ''white fringeless orchid'' and ''monkeyface'' as common names (Shea 1992, p. 1). The Service used the common name ''white fringeless orchid'' when the species was first recognized as a candidate for listing, and we retain usage of this common name here.

White fringeless orchid is a perennial herb with a light green, 60-centimeters (cm) (23-inches (in)) long stem that arises from a tuber (modified underground stem of a plant that is enlarged for nutrient storage). The leaves are alternate with entire margins and are narrowly elliptic to lanceolate (broadest below the middle and tapering toward the apex) in shape. The lower leaves are 20 cm (8 in) long and 3 cm (1 in) wide. The upper stem leaves are much smaller. The white flowers are borne in a loose cluster at the end of the stem. The upper two flower petals are about 7 millimeters (mm) (0.3 in) long, and the lower petal (the lip) is about 13 mm (0.5 in) long. The epithet ''integrilabia'' refers to the lack of any prominent fringe on the margin of the lip petal (Luer 1975, p. 186). The plants flower from late July through September, and the small narrow fruiting capsule matures in October (Shea 1992, p. 23).

Distribution

To determine the current distribution of white fringeless orchid, we used data provided by Natural Heritage Programs (NHP), housed in State agencies or universities in each of the States in the species' geographic range: Alabama Natural Heritage Program at Auburn University (ANHP 2014); Georgia Department of Natural Resources (GDNR 2014); Kentucky State Nature Preserves Commission (KSNPC 2014); Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP 2014); North Carolina Department of Environment and Natural Resources (NCDENR 2014); South Carolina Department of Natural Resources (SCDNR 2012); and Tennessee Department of Environment and Conservation (TDEC 2014). In addition to NHP data, we used Shea's (1992, entire) *Status Survey Report on Platanthera integrilabia* to determine the species' historical distribution.

In most cases, a mapped occurrence in the databases maintained by the NHPs represented a single group of plants growing together in a patch of suitable habitat. However, the Kentucky NHP combined multiple groups of plants (*i.e.,* sub-occurrences), growing in distinct habitat patches in close proximity to one another, into single occurrences. In two instances, the Tennessee NHP also grouped several sub-occurrences into a single occurrence, where they were all located in separate stream heads draining into a single headwater stream. In describing the current range and distribution of white fringeless orchid, we have adopted these groupings in those instances where all of the sub-occurrences were located within the drainage of a single headwater stream. In two instances, where Kentucky NHP grouped sub-occurrences from drainages of separate headwater streams into a single occurrence, we split the sub-occurrences into two separate occurrences by grouping together only those that were located within a single headwater drainage.

Historical Distribution—As of 1991, there were 30 extant occurrences and 13 with uncertain status, distributed among 20 counties in 5 southeastern States (see Table 1, below). Shea (1992, pp. 14–17) also reported on six locations with historical occurrences and six from which the species had been extirpated.

As of 2015, there are records for 13 historical and 12 extirpated occurrences in NHP databases. Accounting for two locations that Shea (1992, pp. 11–14) reported as extirpated and a third reported as uncertain but now considered to be historical, none of which is included in NHP databases, there are 28 occurrences that currently are considered historical or extirpated. In 1991, five of these were extant and the status of five was uncertain (Shea 1992, pp. 7–14). Based on these data, the species' historical range included Cobb County, Georgia; Henderson County, North Carolina; and Roane County, Tennessee, in addition to the 35 counties listed below in Table 1 for the species' range as of 2014. The species has been extirpated completely from North Carolina.

Shea (1992, pp. 17–18) lists additional records from Butler County, Alabama; Cherokee County, North Carolina; Hamilton County, Tennessee; and Lee County, Virginia, whose validity she could neither verify nor refute based on available data. Lacking sufficient data to document the collection of white fringeless orchid from Lee County, the authors of the Flora of Virginia did not include the species (Townsend 2012, pers. comm.). Lacking any substantive data for white fringeless orchid's historical presence in the other three counties above, we also consider them to not be part of the species' historical range.

Current Distribution—Using available data, we categorized the current status of each occurrence as extant, extirpated, historical, or uncertain. Extant occurrences are those for which recent (*i.e.,* since ca. 2000) observations of flowering plants are available to confirm the species' persistence at a given site, or from which material was collected and cultivated in a greenhouse to produce flowering specimens confirming the identification of vegetative plants that were observed in the field. Because white fringeless orchid commonly occurs with three congeners (species belonging to the same genus) that share similar leaf characteristics, conclusive identification in the absence of flowering specimens is not possible. Extirpated occurrences are those where the species' absence is considered to be certain due to lack of recent observations of flowering white fringeless orchids, or vegetative plants of any species of *Platanthera,* associated with modification of the habitat to an unsuitable condition for white fringeless orchid. White fringeless orchid was last seen flowering at one extirpated occurrence as recently as 2004, but habitat in this former transmission line right-of-way is no longer maintained and has become unsuitable due to woody vegetation encroachment. Similarly, recent observation of flowering white fringeless orchids or vegetative plants of any species of *Platanthera* is lacking for historical occurrences, but the habitat has not been visibly altered at these locations. We have assigned uncertain status to occurrences where recent observation of flowering white fringeless orchids is lacking, but where basal leaves of non-flowering *Platanthera* spp. orchids typically have been observed during one or more recent visits. In addition, we have assigned uncertain status to one Mississippi occurrence, where a single white fringeless orchid was seen flowering in 2011, because the hydrology at this site was subsequently altered by a drainage ditch and the species' persistence at this site is now questionable.

The white fringeless orchid's distribution is concentrated in the Cumberland Plateau section of the Appalachian Plateaus physiographic province, with isolated populations scattered across the Blue Ridge, Piedmont, and Coastal Plain provinces (Fenneman 1938, pp. 68, 134–137, 172, 333–334). The species is currently extant at 58 occurrences distributed among 32 counties, spanning 5 southeastern States (Table 1). There are an additional 22 occurrences (Table 1) whose current status is uncertain, which include one additional State and three additional counties. We consider the species' current distribution to include the 6 States and 35 counties where NHP database records for these extant and uncertain occurrences exist (Table 1). We included records of uncertain status in defining the species' current distribution to ensure that all relevant State and local governments and private stakeholders are aware of white fringeless orchid's potential presence and opportunities for conserving the species and its habitat.

TABLE 1—COUNTY-LEVEL DISTRIBUTION OF EXTANT AND UNCERTAIN STATUS WHITE FRINGELESS ORCHID OCCURRENCES, CIRCA 1991 (SHEA 1992) AND 2014 (ANHP 2014, GDNR 2014, KSNPC 2014, MDWFP 2014, NCDENR 2014, SCDNR 2012, TDEC 2014)

State	County	1991		2014	
		Extant	Uncertain	Extant	Uncertain
Alabama	Calhoun			2	
	Clay		1	1	
	Cleburne			1	
	DeKalb			1	
	Jackson				1
	Marion	1		1	2
	Tuscaloosa	1		1	
	Winston	1		1	
Georgia	Bartow			1	
	Carroll	2		2	
	Chatooga			1	
	Cobb	1			
	Coweta	1		1	
	Forsyth		1	1	
	Pickens			1	
	Rabun	1		1	
	Stephens	1		1	
Kentucky	Laurel			2	2
	McCreary	4		2	1
	Pulaski	1	1	2	
	Whitley			1	
Mississippi	Alcorn				1
	Itawamba			2	1
	Tishomingo			1	1
South Carolina	Greenville	1			1
Tennessee	Bledsoe		2	2	1
	Cumberland			1	
	Fentress			2	
	Franklin	3	2	5	5
	Grundy	5	5	4	4
	Marion	2		8	
	McMinn	1		1	
	Polk			1	
	Scott			1	
	Sequatchie	2	1	1	1
	Van Buren	2		5	1
Total		30	13	58	22

More occurrences are included in the species' current distribution than were historically known to exist, likely as a result of increased survey effort having been devoted to white fringeless orchid due to its status as a candidate for Federal listing. However, low numbers of flowering plants have been observed at most sites (Figure 1). For example, fewer than 50 flowering plants have ever been observed at one time at 45 (64 percent) of the 70 extant and uncertain occurrences for which data are available. At 26 (37 percent) of these occurrences, fewer than 10 flowering plants have ever been recorded.

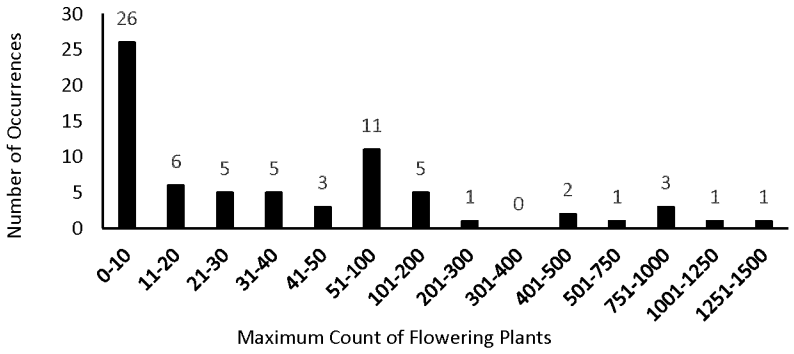

FIGURE 1.--Histogram of maximum number of flowering white fringeless orchids ever recorded at 70 extant and uncertain occurrences. Specific counts of flowering plants were not available for 10 extant and uncertain occurrences.

There are 32 extant occurrences that are located entirely, or in part, on lands owned or managed by local, State, or Federal government entities (Table 2). In addition, there are seven uncertain, five extirpated, and two historical occurrences that are similarly situated. Two additional occurrences, one extant and one uncertain, are located on private lands that are protected by conservation easements.

TABLE 2—STATUS AND NUMBER OF WHITE FRINGELESS ORCHID OCCURRENCES ON PUBLICLY OWNED OR MANAGED LANDS

[Note: One site is on privately owned lands that GDNR leases for use as a wildlife management area]

Ownership	Extant	Uncertain	Extirpated	Historical
National Park Service	3			
U.S. Forest Service	9	3	3	
U.S. Fish and Wildlife Service	2			
Alabama Department of Conservation and Natural Resources		1		
Georgia Department of Natural Resources	2			
Kentucky State Nature Preserves Commission	1			1
Mississippi Department of Fish, Wildlife, and Parks	1			
North Carolina Plant Conservation Program			1	
South Carolina State Parks		1		
Tennessee Department of Transportation	1			
Tennessee Division of Forestry	7			
Tennessee State Parks	5	1		1
Tennessee Wildlife Resources Agency	1		1	
Forsyth County, Georgia		1		
Total	31	8	5	2

Habitat

In Correll's (1941, pp. 156–157) description of white fringeless orchid as a distinct variety, he included notes from herbarium specimens that describe the species' habitat variously as ''bog,'' ''boggy sphagnum ravine,'' ''sphagnum bog,'' ''grassy swamps,'' and ''marshy ground.'' Luer (1975, p. 186) described the habitat as ''. . . the deep shade of damp deciduous forests . . . in the thick leaf litter and sphagnum moss along shallow wet ravines and depressions.'' Zettler and Fairey (1990, p. 212) observed the species growing in ''shaded and level bogs, swamps or seepage slopes usually containing *Sphagnum.''* Shea (1992, p. 19) described the habitat as ''wet, flat, boggy areas at the head of streams or on seepage slopes . . . with *Sphagnum* . . . usually grows in partial shade.''

Hoy (2012, p. 53) demonstrated that precipitation was the primary hydrologic source for three wetlands at a white fringeless orchid site on the Cumberland Plateau in Kentucky, which was commonly referred to as a seep. Thus, describing many of the sites where white fringeless orchid occurs as ''seeps'' or ''seepage slopes'' may contradict the typical characterization of seeps as wetlands where water from subsurface sources emerges at the surface (Soulsby *et al.* 2007, p. 200). The term ''bogs'' refers to a specific wetland type that accumulates peat, lacks significant inflow or outflow, and harbors mosses adapted to acidic environments, particularly *Sphagnum* (Mitsch and Gosselink 2000, p. 41). Peat is fibric organic soil material, meaning that some plant forms incorporated into the soil are identifiable (U.S. Department of Agriculture, Natural Resources Conservation Service 2006, p. 32). However, despite the common usage of the terms ''bog'' or ''boggy'' to describe them and the nearly ubiquitous presence of *Sphagnum* spp. (sphagnum moss) in them, the wetlands that white fringeless orchid inhabits occur on mineral soils and do not accumulate peat. Further, they often are located at stream heads and connected to ephemeral streams via dispersed sheet flow or concentrated surface flow in incipient channels.

Weakley and Schafale (1994, pp. 164–165) commented on the discrepancy between regional use of the terms ''bogs'' and ''fens'' to describe non-

alluvial wetlands of the Southern Blue Ridge in which sphagnum moss is prominently featured and their more traditional usage in peatland classifications. Noting that most of the region's non-alluvial wetlands lacked organic soils, these authors nonetheless chose to maintain the regional usage of these terms in their classification, to emphasize differences in sources of hydrology and their effects on water chemistry (nutrient-poor precipitation in ''bogs'' versus mineral-rich groundwater seepage in ''fens''). Similar to the non-alluvial wetlands of the Southern Blue Ridge, further study is needed to characterize the range of variation in soils, hydrology, physicochemistry, and origin of wetlands throughout the range of white fringeless orchid.

Most sites where white fringeless populations exist are on soils formed over sandstone bedrock, which usually are low in fertility and organic matter content and are acidic (Shea 1992, p. 20). The species often occurs in swamps dominated by *Acer rubrum* (red maple) and *Nyssa sylvatica* (blackgum), where common shrubs and woody vines include *Alnus serrulata* (smooth alder), *Decumaria barbara* (climbing hydrangea), *Smilax* spp. (greenbrier), and *Viburnum nudum* (possumhaw). Common herbaceous associates of white fringeless orchid include *Doellingeria umbellata* (parasol flat-top white aster), *Gymnadeniopsis clavellata* (green woodland orchid), *Lobelia cardinalis* (cardinal flower), *Lycopus virginicus* (Virginia bugleweed), *Osmunda cinnamomea* (cinnamon fern), *O. regalis* (royal fern), *Oxypolis rigidior* (stiff cowbane), *Parnassia asarifolia* (kidneyleaf grass of parnassus), *Platanthera ciliaris* (yellow fringed orchid), *P. cristata* (crested yellow orchid), *Sphagnum* spp. (sphagnum moss), *Thelypteris noveboracensis* (New York fern), *Viola primulifolia* (primrose-leaf stemless white violet), and *Woodwardia areolata* (chainfern) (Zettler and Fairey 1990, p. 213; Shea 1992, p. 22; Patrick 2012, pers. comm.). Sites located in powerline rights-of-way share many of the herbaceous taxa listed above, but lack a canopy or well-developed shrub stratum due to vegetation management. Nomenclature follows the Integrated Taxonomic Information System (retrieved on January 16, 2015, from the Integrated Taxonomic Information System online database, *http://www.itis.gov*).

Biology

Orchid seeds are dust-like and lack an endosperm (the tissue produced inside seeds of most flowering plants that provides nutrient reserves) making them dependent upon acquiring carbon from an external source (Yoder *et al.* 2010, p. 7). Like most terrestrial orchids, white fringeless orchid depends on a symbiotic (interdependent) relationship with mycorrhizal fungi (an association of a fungus and a plant in which the fungus lives within or on the outside of the plant's roots) to enhance seed germination and promote seedling development and establishment (Zettler and McInnis 1992, pp. 157–160; Rasmussen and Whigham 1993, p. 1374). In addition to providing a carbon source for seedling development, mycorrhizal fungi enhance germination by promoting increased water uptake by orchid seeds (Yoder *et al.* 2000, 149). Their small size permits dispersal of orchid seeds to new environments via wind currents; however, very few of the seeds likely encounter suitable habitats where host fungi are present (Yoder *et al.* 2010, pp. 14–16). This likelihood is further reduced in the case of species such as white fringeless orchid, which may rely on a single fungal host species, *Epulorhiza inquilina,* to complete its life cycle (Currah *et al.* 1997, p. 340).

White fringeless orchid has a self-compatible breeding system, allowing individuals to produce seed using their own pollen; however, the proportions of fruits produced through self-pollination versus cross-pollination are not known (Zettler and Fairey 1990, p. 214). Rates of fruit set, measured as the proportion of individual flowers that produced capsules, varied in studies of populations in Georgia (6.9 percent), South Carolina (20.3 percent) (Zettler and Fairey 1990, p. 214), and Tennessee (56.9 percent) (Zettler *et al.* 1996, p. 20). While these observations were made at these populations in different years, the Tennessee population, where pollination was observed, is considerably larger than the Georgia or South Carolina populations, where no pollination was observed. Zettler *et al.* (1996, p. 22) reasoned that inbreeding depression was a likely cause for the lower fruit set in the smaller populations, noting that in a separate study both germination rates and propagation success were greater in white fringeless orchid seeds collected from the largest of these populations (Zettler and McInnis 1992, p. 160). They speculated that higher rates of fruit set were probably more typical historically, when larger populations provided greater opportunities for cross-pollination to occur.

White fringeless orchid is capable of prodigious seed production, which might help to compensate for the likely dispersal of many seeds into unsuitable habitats. In the Tennessee population studied by Zettler *et al.* (1996, p. 20), more than half of the flowers on inflorescences (the complete flower head of a plant including stems, stalks, bracts, and flowers) set fruit, resulting in a mean of 4.7 capsules per plant. The capsules produced an average of 3,433 seeds each, indicating that each inflorescence averaged over 16,000 seeds. With 577 inflorescences counted in the study area, Zettler *et al.* (1996, p. 20) estimated that over 9,000,000 seeds were produced. However, in separate studies of *in vitro* and *in situ* seedling development, even with fungal inoculation less than 3 percent of seeds developed into protocorms (young seedlings) that could be established on soil (Zettler and McInnis 1992, pp. 157–160; Zettler 1994, pp. 65).

Known pollinators for white fringeless orchid include three diurnal species from two families of butterflies (Lepidoptera): Silver spotted skipper (Hesperiidae: *Epargyreus clarus*), spicebush swallowtail (Papilionidae: *Papilio troilus*), and eastern tiger swallowtail (Papilionidae: *P. glaucus*) (Zettler *et al.* 1996, p. 16). Based on floral characteristics, including white flowers and a long nectiferous (nectar bearing) spur, as well as pollinaria morphology in relation to potential pollinator morphology, it is likely that more effective pollinators for white fringeless orchid exist in the nocturnal sphingid moth family (Lepidoptera: Sphingidae) (Zettler *et al.* 1996, pp. 17–18); however, this has not been confirmed. Pollinaria are the pollen-bearing structure on orchids, consisting of pollen masses (pollinia) attached to a stalk that has a sticky pad (viscidium), which attaches the pollinaria to pollinators (Argue 2012, p. 5). Despite the fact that nectar concentrations in white fringeless orchid flowers did not fluctuate significantly over a 24-hour observation period, Zettler *et al.* (1996, p. 20) noticed the floral fragrance produced by a large Tennessee population intensified between the hours of 7:00 p.m. and 11:00 p.m., suggesting the species possesses adaptions for attracting nocturnal pollinators.

Genetics

Birchenko (2001, pp. 18–23, 47–48) analyzed genetic structure among 25 white fringeless orchid populations, distributed across Alabama, Georgia, Tennessee, and Kentucky. Her ''populations'' corresponded to specific NHP occurrences. The majority (79 percent) of the genetic variation was present as variation within populations, while 21 percent of the variation was

attributable to differences between populations (Birchenko 2001, p. 29). While these results alone do not demonstrate that genetic variability in white fringeless orchid populations has been eroded by restricted gene flow, Birchenko (2001, pp. 34–40) cautioned that interactions between demographic and ecological factors could be a cause for some observed population declines and could ultimately cause declines in the species' genetic variation and increase differentiation among white fringeless orchid populations.

Summary of Factors Affecting the Species

Under section 4(a)(1) of the Act, we may list a species based on: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. Listing actions may be warranted based on any of the above threat factors, singly or in combination.

Information pertaining to white fringeless orchid in relation to the five factors provided in section 4(a)(1) of the Act is discussed below. In considering what factors might constitute threats, we must look beyond the mere exposure of the species to the factor to determine whether the species responds to the factor in a way that causes actual impacts to the species. If there is exposure to a factor, but no response, or only a positive response, that factor is not a threat. If there is exposure and the species responds negatively, the factor may be a threat, and we then attempt to determine if that factor rises to the level of a threat, meaning that it may drive or contribute to the risk of extinction of the species such that the species warrants listing as an endangered or threatened as those terms are defined by the Act. This does not necessarily require empirical proof of a threat. The combination of exposure and some corroborating evidence of how the species is likely impacted could suffice. The mere identification of factors that could impact a species negatively is not sufficient to compel a finding that listing is appropriate; we require evidence that these factors are operative threats that act on the species to the point that the species meets the definition of an endangered or threatened species under the Act.

Factor A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

Habitat modification caused by development, silvicultural practices, invasive plant species, disturbance by feral hogs, shading due to understory and canopy closure, altered hydrology, and right-of-way maintenance have impacted the range and abundance of white fringeless orchid.

Development

One white fringeless orchid occurrence was extirpated from a site in Henderson County, North Carolina, which Shea (1992, p. 15) reported had been nearly completely destroyed by construction of a building. Another occurrence in Tishomingo County, Mississippi, was extirpated from a site that was disturbed by construction of the Yellow Creek Nuclear Power Plant (Shea 1992, p. 15). A third site from which the species is considered extirpated, in Roane County, Tennessee, was severely disturbed during highway construction (Shea 1992, p. 15). One extant occurrence in Carroll County, Georgia, is located within a subdivision where restrictions have been put in place to protect the wetland habitat. Another extant occurrence in Pickens County, Georgia, is located within a subdivision, but the wetland habitat where white fringeless orchid occurs is located within an area protected by a conservation easement held by the North American Land Trust. There is one occurrence of uncertain status that is located on an as yet undeveloped lot in a subdivision in Grundy County, Tennessee. Potential future residential development at this site could directly impact white fringeless orchid due to habitat conversion or ground disturbance, or could indirectly affect the species by altering hydrology, increasing shading, or introducing invasive, nonnative plants.

Based on our review of the best commercial and scientific data available, development is a threat of low magnitude with potential to affect few white fringeless orchid populations in the foreseeable future.

Silvicultural Practices

Direct and indirect effects of silvicultural practices have adversely affected habitat conditions and abundance of many white fringeless orchid populations. Incompatible silviculture has taken the form of clearcutting, both of swamps occupied by the species and of surrounding upland forests. Shea (1992, p. 15) reported that white fringeless orchid had been extirpated from two Alabama sites where logging had disturbed the habitat. At one of these sites, the loss was attributed to impacts from logging and removal of beaver dams.

While white fringeless orchid has sometimes shown short-term increases in flower production following canopy removal, the longer-term response typically is a decline in abundance as vegetation succession ensues (Shea 1992, pp. 26, 96; Birchenko 2001, p. 33). Forests have been clearcut at nine extant occurrences and two of uncertain status in Tennessee, two extant sites and one of uncertain status in Alabama, and one extant site in Georgia. Of these, there is evidence for declines in white fringeless orchid abundance following timber harvests at five extant occurrences and two of uncertain status in Tennessee (TDEC 2014) and one extant occurrence in Alabama (Birchenko 2001, p. 33; ANHP 2014). At some sites, the timber harvests were too recent to know yet how white fringeless orchid will respond.

In many cases, native forests surrounding white fringeless orchid sites have been clearcut and replaced by intensively managed pine plantations, often consisting solely of *Pinus taeda* (loblolly pine), where intensive mechanical or chemical site preparation before planting occurs in order to reduce seedling competition with other tree species (Clatterbuck and Ganus 1999, p. 4). Plantation forestry generally causes reductions in streamflow as compared to native forest vegetation (Scott 2005, p. 4204), and research from the Cumberland Plateau comparing calcium stores in soils and trees of native hardwood forests to mature pine on converted hardwood sites revealed calcium loss from the system after a single pine rotation that could impede future regrowth of the native oak-hickory forest (McGrath *et al.* 2004, p. 21). The fact that plantation forests are implicated in reduced streamflow suggests that they could reduce the hydroperiod (seasonal pattern of the water level that results from the combination of the water budget and the storage capacity of a wetland) in wetlands located at the heads of streams, such as those typically occupied by white fringeless orchids, when they are embedded in a matrix of pine plantations. While more information on indirect effects of pine plantations on hydroperiods of wetlands occupied by white fringeless orchid is needed, evidence suggests that restoring native hardwood forest vegetation may be needed to restore wetland hydrology in some sites, and that this would be a challenging and long-term process.

At least four extant occurrences in Alabama, two in Georgia, and four in Tennessee are located in wetlands that are either located in pine plantations or bordered by them in surrounding uplands; one Tennessee occurrence of uncertain status is similarly situated. Fourteen percent of native forest, in seven counties of the southern Cumberland Plateau in Tennessee that are occupied by white fringeless orchid, was lost between 1981 and 2000. The majority (74 percent) of this lost native forest was converted to nonnative loblolly pine plantations, and the annual rate of conversion doubled during the last 3 years (1997–2000) (McGrath *et al.* 2004, p. 13). Given that there are three extant Tennessee occurrences and two of uncertain status that are located on private industrial forest lands, which have not yet been converted to nonnative pine plantations, conversion of lands surrounding additional white fringeless orchid occurrences represents a foreseeable future threat to the species.

Based on our review of the best commercial and scientific data available, silvicultural practices are a threat of moderate magnitude to white fringeless orchid populations.

Invasive Plant Species

The presence of invasive, nonnative plant species, including *Microstegium vimineum* (Japanese stiltgrass), *Ligustrum sinense* (Chinese privet), and *Perilla frutescens* (beefsteak plant), has been documented at 10 extant white fringeless orchid occurrences and one of unknown status (U.S. Forest Service (USFS) 2008, p. 53; Richards 2013, pers. comm.; KSNPC 2014; TDEC 2014). Chinese privet has been negatively correlated with cover, abundance, and richness of native herbaceous species in riparian wetlands of the Piedmont physiographic province (Greene and Blossey 2012, p. 143). Japanese stiltgrass has been shown to increase pH and phosphorous availability in Cumberland Plateau forest soils (McGrath and Binkley 2009, pp. 145–153) and to increase abundance of vesicular arbuscular mycorrhiza (VAM; mycorrhizal fungi that grow into the roots of host plants and form specialized structures called arbuscules and vesicles) in other sandstone-derived soils (Kourtev *et al.* 2002, p. 3163) as compared to native vegetation. While the effect of these soil alterations on white fringeless orchid has not been investigated, the species is associated with acidic (*i.e.,* lower pH) soils (Zettler and Fairey 1990, p. 213) and is dependent upon a specific mycorrhizal fungus that is not a VAM (Currah *et al.* 1997, p. 340). To the extent that increases in VAM might lead to decreases in abundance of the orchid's mycorrhizal fungus, *Epulorhiza inquilina,* negative effects on germination and growth would be expected for white fringeless orchid.

In addition to threats posed by nonnative plant species, at two extant white fringeless orchid sites, a native species, *Lygodium palmatum* (American climbing fern), has demonstrated invasive tendencies. Both sites are on public lands, and USFS attempts to control spread of the species at one of the sites met limited success. At the site on National Park Service lands, American climbing fern blankets vegetation along both sides of a dirt road that is in close proximity to a white fringeless orchid site, and the fern vines have spread into adjacent forests, including the wetland where white fringeless orchid occurs. Left unmanaged, encroachment of nonnative plants and American climbing fern could reduce potential for exposure of seeds to light before being incorporated into the soil, which enhances germination rates (Zettler and McInnis 1994, p. 137).

Based on available data, encroachment by native and nonnative invasive plants is a threat of moderate magnitude to white fringeless orchid populations.

Feral Hogs

Ground disturbance by rooting of feral hogs has been observed at 13 extant white fringeless orchid occurrences, in Georgia and Tennessee, including two of the largest known occurrences, both on protected lands (Zettler 1994, p. 687; USFS 2008, p. 54; Richards 2013 pers. comm.; Richards 2014, pers. comm.; Tackett 2015, pers. comm.). These disturbances have affected specific microsites where white fringeless orchid had previously been observed growing, as well as surrounding wetland habitat. Disturbance by feral hogs has been shown to affect plant communities by causing decreases in plant cover, diversity, and regeneration; effects to fungi from feral hogs are also known to occur (Barrios-Garcia and Ballari 2012, p. 2295), suggesting potential for adverse effects to white fringeless orchid via disruption of the symbiotic interactions with mycorrhizal fungi that enhance seed germination and promote seedling development and establishment (Zettler and McInnis 1992, pp. 157–160; Rasmussen and Whigham 1993, p. 1374).

Based on our review of the best commercial and scientific data available, feral hogs are a threat of moderate magnitude to white fringeless orchid populations.

Excessive Shading

Despite the fact that white fringeless orchid habitat has been described as shaded (Luer 1975, p. 186; Zettler and Fairey 1990, p. 212; Shea 1992, p. 19), excessive shading due to vegetation succession has been recognized as a factor associated with population declines (Shea 1992, pp. 26, 55, 61, 69; Richards 2013, pers. comm.; Schotz 2015, p. 4), and succession of woody vegetation has been named as the primary factor in the decline of Tennessee populations (TDEC 2012, p. 3). One Tennessee occurrence was extirpated due to woody vegetation succession in a right-of-way that occurred following removal of a powerline (TDEC 2014). Available data indicate that this threat has been noted at 19 extant occurrences and 5 of uncertain status across the species' geographic range (Richards 2013, pers. comm.; Sullivan 2014, pers. comm.; KSNPC 2014; TDEC 2014; Schotz 2015, pp. 10–35). The threat of shading has been most often noted in instances where woody succession followed logging in or adjacent to sites occupied by white fringeless orchid. As noted above, white fringeless orchid occurrences often exhibit short-term increases in flower production following canopy removal, but the longer-term response typically is a decline in abundance as woody vegetation succession ensues (Shea 1992, pp. 26, 96; Birchenko 2001, p. 33; TDEC 2012, pp. 2–3). It has been suggested that fire could play a role in regulating woody vegetation growth in uplands surrounding white fringeless orchid habitats, allowing greater light penetration into swamps where the species grows (Schotz 2015, p. 4).

Based on our review of the best commercial and scientific data available, excessive shading is a threat of moderate magnitude to white fringeless orchid populations.

Altered Hydrology

Several factors have been identified as causes for altered hydrology in white fringeless orchid habitat, including pond construction (TDEC 2008, p. 4), ditching (Sullivan 2014, pers. comm.), development, logging (Shea 1992, p. 26; Taylor 2014, pers. comm.), and woody vegetation succession following logging (Hoy 2012, p. 13). In Tennessee, three white fringeless orchid sites have been destroyed by pond construction, one as recently as 2006 (TDEC 2008, p. 4). One site in Cobb County, Georgia, was destroyed by pond construction

(Richards 2014, pers. comm.). In Winston County, Alabama, hydrology was altered by the removal of beaver dams to facilitate a logging operation, causing the extirpation of a white fringeless orchid occurrence (Shea 1992, p. 25).

Altered hydrology has been noted as a threat at five extant occurrences and four of unknown status (Taylor 2014, pers. comm.; Sullivan 2014, pers. comm.; GDNR 2014; KSNPC 2014; TDEC 2014). Conversion of surrounding uplands to a pine plantation was noted as the cause for hydrologic alteration at one extant site in Georgia (GDNR 2014), and as noted above, is a condition that is present at nine other extant occurrences and one of unknown status. Logging in surrounding uplands is suspected of contributing to altered hydrology at two Kentucky occurrences, one extant and one of uncertain status (Taylor 2014, pers. comm.; KSNPC 2014), by causing increased surface runoff during heavy precipitation events and accelerating channel development in wetlands at stream heads. In addition to loss of white fringeless orchid habitat and occurrences due to pond construction at the three Tennessee sites discussed above, hydrology has been altered in wetland habitats down slope of ponds at two other Tennessee sites, where white fringeless orchid's status is now uncertain (TDEC 2014). In Mississippi, ditching has altered hydrology at a site where white fringeless orchid was discovered in 2011, leaving the species' status uncertain at this location (Sullivan 2014, pers. comm.). Ditching has also altered hydrology at an extant occurrence located adjacent to a State highway in Tennessee. Disturbance by heavy equipment in an adjacent powerline right-of-way is thought to have altered hydrology at an extant site in Kentucky, by causing rutting of soils and hastening channel development at the stream head (Taylor 2014, pers. comm.).

While most observations of threats related to logging activity have concerned habitat disturbance or increased shading caused by woody vegetation regrowth, Hoy (2012, p. 26) suggests that high stem densities that occur during succession following canopy removal shorten the hydroperiod of wetlands at an extant white fringeless orchid site in Kentucky. This results from increased evapotranspiration, due to greater leaf surface area, causing faster rates of water loss. While only empirically documented in wetlands where a single white fringeless orchid occurrence is located, this process likely has affected numerous other sites where canopy removal has occurred due to logging.

Based on our review of the best commercial and scientific data available, altered hydrology is a threat of moderate magnitude to white fringeless orchid populations.

Right-of-Way Maintenance

Eleven extant white fringeless orchid occurrences and one of uncertain status are located in transportation or utility rights-of-way (Richards 2013, pers. comm.; KSNPC 2014; TDEC 2014). Vegetation management practices in such habitats prevent advanced succession of woody vegetation, which can benefit white fringeless orchid by periodically reducing shading. On the other hand, mechanical clearing in these habitats can alter hydrology by causing rutting of soils and hastening channel development, as discussed in the preceding section (Taylor 2014, pers. comm.). Mowing during the flowering period for white fringeless orchid is detrimental, given the low flowering rates that have been observed in this species and the fact that individual plants will not regenerate flowers during a growing season once they are lost to herbivory or other causes (Sheviak 1990, p. 195). Also, it is likely that indiscriminate herbicide application would cause mortality of white fringeless orchid plants. However, we have knowledge of one event in which the species responded favorably following selective herbicide application to control woody plant succession in a Tennessee Valley Authority transmission line right-of-way, reaching record numbers of flowering plants documented at the site within 2 years following the herbicide treatment. The lack of adverse effect to white fringeless orchid in this instance is likely attributable to the targeted application of herbicides to woody plants only.

Based on our review of the best commercial and scientific data available, right-of-way maintenance is a threat of moderate magnitude to white fringeless orchid populations.

Conservation Efforts To Reduce Habitat Destruction, Modification, or Curtailments of Its Range

The USFS has undertaken efforts to restore or protect habitat at a number of white fringeless orchid sites located on National Forest (NF) lands. At the Cherokee NF, the USFS constructed fences to exclude feral hogs at two sites, one of which is the largest known occurrence of the species. These fences are effective when maintained; however, only the main concentration of plants is protected at the site where the largest occurrence is present. At the Daniel Boone NF, the installation of check dams (small, often temporary, dam constructed across a swale, drainage ditch, or waterway to counteract erosion by reducing water flow velocity) in 2005 has been somewhat effective in restoring suitable conditions for white fringeless orchid at a site where wetland hydrology had been altered. Efforts to control invasion by Japanese stiltgrass by repeatedly weeding at one site on Daniel Boone NF have been hampered by a seed source that exists on private lands upslope of the site (Taylor 2014, pers. comm.).

Efforts have been made to restore suitable habitat conditions at one site on KSNPC lands, by reducing woody stem encroachment in 2012, following a timber harvest, and by placing log dams to slow surface runoff and minimize channel development. To date, white fringeless orchid has not shown a measureable response to this management effort; despite large numbers of vegetative *Platanthera* spp. leaves being present, fewer than 30 flowering plants per year have been observed in recent years at this site, where 530 plants were observed flowering in 1998 (KSNPC 2014).

Summary of Factor A

The threats to white fringeless orchid from habitat destruction and modification are occurring throughout much of the species' range. These threats include development, silvicultural practices, invasive plant species, disturbance by feral hogs, shading due to understory and canopy closure, altered hydrology, and right-of-way maintenance. While the species is present in a number of sites on conservation lands, few conservation actions have been undertaken to address these threats to the species' habitat, and those that are described above have met with limited success. The population-level impacts of habitat destruction and modification are expected to continue. Threats related to silvicultural practices could increase in the future, given that some occurrences are located on private industrial forest lands, where logging and future conversion of native hardwood forests to pine plantation are likely to occur. In addition to physical disturbances that alter hydrology, predicted changes in precipitation and drought frequency and severity (see Factor E, below) may contribute to increased loss of suitable habitat in the future.

Based on our review of the best commercial and scientific data available, we conclude that the present

or threatened destruction, modification, and curtailment of its habitat or range is currently a threat to white fringeless orchid and is expected to continue and possibly increase in the future.

Factor B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

White fringeless orchid was first collected from a site in McCreary County, Kentucky, but had disappeared from the site by the 1940s, apparently due to the collection of hundreds of specimens to be deposited in herbaria (Ettman and McAdoo 1979 cited in Zettler and Fairey 1990, p. 212). Shea (1992, p. 27) cites personal communications from R. Smartt and P. Somers, the latter of whom was a botanist with Tennessee's Natural Heritage Program, reporting that two nurseries in Tennessee had collected white fringeless orchid plants for resale. While we are not able to independently verify these historical reports, they suggest that collecting for various purposes has long been a threat to white fringeless orchid. Evidence of recent plant collecting (for unknown purposes), at two separate locations, is presented below.

The first of these occurred in 2004, alongside a State highway in Chattooga County, Georgia. Botanists discovered many flowering plants at the site, but when they later returned to the site they found that most of the plants had been dug out and removed. During 2014, only a single non-flowering white fringeless orchid was seen at this site (Richards 2014, pers. comm.). The second incident took place during 2014, alongside a State highway in Sequatchie County, Tennessee. A Service biologist observed 83 flowering white fringeless orchids at this site on August 13, 2014, but 2 weeks later only 31 plants bearing flowers or fruiting capsules were found during a survey with TDEC botanists. In the location where the greatest concentration of flowering plants had been observed on August 13, there were areas where mats of sphagnum moss and roots of woody plants had been scraped away from the surface and shallow depressions were present in the mineral soil beneath. Because no wildlife tracks were present in the area where the surface disturbance had occurred and no partial stems were present to indicate that the loss resulted from herbivory, the Service and TDEC botanists concluded that the plants had been collected.

While the fate of plants that have been collected is not known, we received information about white fringeless orchids having been purchased via an online vendor in 2004 (Richards 2014, pers. comm.). The plants were sold as nursery grown *Platanthera blephariglottis* (white fringed orchid), a taxon of which white fringeless orchid was once treated as a variety (Correll 1941, pp. 153–157); however, when the plants later flowered in a greenhouse, it was apparent they were white fringeless orchids. When the seller was questioned about the origin of the plants, she initially insisted they had come from a friend's private lands. The seller later refused to respond to additional inquiries from the buyer. A recent online search for commercially available, native *Platanthera* orchids revealed that three species, which often co-occur with white fringeless orchid, were being offered for sale on the online auction and shopping Web site eBay (*www.ebay.com,* accessed on September 17, 2014). The unintended purchase of white fringeless orchid from an online vendor, combined with the offering of three other *Platanthera* orchids for sale via eBay, provides additional evidence that demand exists for native orchids of this genus.

Due to the species' rarity, the small sizes of most known populations, and the fact that most of the populations are located in remote sites that are infrequently monitored by conservation organizations or law enforcement, collection is a threat to *P. integrilabia.* In small populations, the collection of even a few individuals would diminish reproductive output and likely reduce genetic diversity.

Based on our review of the best commercial and scientific data available, overutilization for commercial, scientific, or recreational purposes is currently a threat of low magnitude to white fringeless orchid and is expected to continue in the future. If the Service were to publish a proposal to designate critical habitat for this species, which would include detailed maps and descriptions of locations where the species is present, the magnitude and severity of this activity would increase, and it would become a threat of moderate to high magnitude.

Factor C. Disease or Predation

Zettler and Fairey (1990, p. 214) reported that both herbivory and disease affected two white fringeless orchid populations they studied in Georgia and South Carolina. At the Georgia site, 16.5 percent of the white fringeless orchids suffered from herbivory and 11.5 percent from disease; at the South Carolina site, herbivory and disease were evident on 22.5 and 23.9 percent of the plants, respectively. The specific herbivores were not discussed, but disease was attributed to pathogenic fungi that were isolated from necrotic tissue, including species of *Alternaria, Pestalotia, Nigrospora,* and *Cercospora* (Zettler and Fairey 1990, p. 214).

Zettler (1994, p. 687) also reported observations of tuber herbivory by feral hogs at the largest white fringeless orchid occurrence in McMinn County, Tennessee. The USFS constructed fences to exclude hogs from the greatest concentration of plants at this site and at a smaller occurrence in Polk County, but found the fence at the McMinn County site in need of repair in 2002, when they discovered that approximately half of the flowering white fringeless orchids and many vegetative orchids had been uprooted (USFS 2008, p. 54). As noted above, evidence of feral hog disturbance has been observed at 10 extant white fringeless orchid sites.

Numerous observers have reported herbivory by deer as a threat to white fringeless orchids, specifically removal of inflorescences from white fringeless orchid plants (Zettler and Fairey 1990, p. 212; Shea 1992, pp. 27, 61, 71–77, 95–97; TDEC 2012, p. 3; KSNPC 2014; TDEC 2014). From these sources, we found observations of inflorescence herbivory at 21 extant occurrences and 5 where the status is now uncertain. It is likely that this threat affects most white fringeless orchid occurrences (TDEC 2012, p. 3), despite not having been specifically documented in every instance.

Using material supplied by the Service, TDEC biologists installed plastic deer control fencing around two areas with concentrations of white fringeless orchids at a site on Tennessee State Park lands in 2013. During 2014, there were 105 flowering plants at the site, plus 31 plants with browsed inflorescences found outside of the fenced enclosures and one browsed plant inside one of the enclosures where the fence had partially collapsed. Inside of the enclosures were 45 flowering plants that were unharmed. Approximately one-third of the flowering plants outside of the fenced areas suffered inflorescence herbivory.

The high frequency at which inflorescence herbivory has been observed at white fringeless orchid occurrences likely contributes to population declines in this species. Orchid growth is initiated each spring from overwintered buds, similar to most perennial plants; however, orchids differ from most other plants by lacking the capacity to replace tissues lost to herbivory or other causes until the following year. In addition, in several

species of *Platanthera,* the usual response to loss of the shoot is death of the plant (Sheviak 1990, p. 195).

Based on our review of the best commercial and scientific data available, predation is a threat of moderate to high magnitude to white fringeless orchid and is expected to continue in the future. Pathogenic fungi have been documented in only two populations, though their presence has likely been overlooked by most observers, and therefore they are a low magnitude threat.

Factor D. The Inadequacy of Existing Regulatory Mechanisms

Section 4(b)(1)(A) of the Act requires the Service to take into account ''those efforts, if any, being made by any State or foreign nation, or any political subdivision of a State or foreign nation, to protect such species. . . .'' In relation to Factor D under the Act, we interpret this language to require the Service to consider relevant Federal, State, and tribal laws, plans, regulations, and other such mechanisms that may minimize any of the threats we describe in threat analyses under the other four factors, or otherwise enhance conservation of the species. We give strongest weight to statutes and their implementing regulations and to management direction that stems from those laws and regulations. An example would be State governmental actions enforced under a State statute or constitution, or Federal action under statute.

Having evaluated the significance of the threat as mitigated by any such conservation efforts, we analyze under Factor D the extent to which existing regulatory mechanisms are inadequate to address the specific threats to the species. Regulatory mechanisms, if they exist, may reduce or eliminate the impacts from one or more identified threats. In this section, we review existing State and Federal regulatory mechanisms to determine whether they effectively reduce or remove threats to the white fringeless orchid.

The white fringeless orchid is listed as special concern, with historical status, by the State of North Carolina, as threatened by the State of Georgia, and as endangered by the Commonwealth of Kentucky and State of Tennessee.

The North Carolina Plant Protection and Conservation Act (NCPPCA; North Carolina General Statutes 106–202) authorizes the North Carolina Plant Conservation Board, within the Department of Agriculture and Consumer Services, to among other things: Maintain a list of protected plant species; adopt regulations to protect, conserve, or enhance protected plant species; and regulate the sale or distribution of protected plant species. The NCPPCA forbids any person from uprooting, digging, taking or otherwise disturbing or removing protected plant species from the lands of another without a written permit and prescribes penalties for violations.

The law that provides official protection to designated species of plants in Georgia is known as the Wildflower Preservation Act of 1973. Under this State law, no protected plant may be collected without written landowner permission. No protected plant may be transported within Georgia without a transport tag with a permit number affixed. Permits are also used to regulate a wide array of conservation activities, including plant rescues, sale of protected species, and propagation efforts for augmenting natural populations and establishing new ones. No protected plants may be collected from State-owned lands without the express permission of the GDNR. The Georgia Environmental Policy Act (GEPA), enacted in 1991, requires that impacts to protected species be addressed for all projects on State-owned lands, and for all projects undertaken by a municipality or county if funded half or more by State funds, or by a State grant of more than $250,000. The provisions of GEPA do not apply to actions of non-governmental entities. On private lands, the landowner has ultimate authority on what protection efforts, if any, occur with regard to protected plants (Patrick *et al.* 1995, p. 1 of section titled ''Legal Overview'').

The Kentucky Rare Plants Recognition Act, Kentucky Revised Statutes (KRS), chapter 146, sections 600–619, directs the KSNPC to identify plants native to Kentucky that are in danger of extirpation within Kentucky and report every 4 years to the Governor and General Assembly on the conditions and needs of these endangered or threatened plants. This list of endangered or threatened plants in Kentucky is found in Kentucky Administrative Regulations, title 400, chapter 3:040. The statute (KRS 146:600–619) recognizes the need to develop and maintain information regarding distribution, population, habitat needs, limiting factors, other biological data, and requirements for the survival of plants native to Kentucky. This statute does not include any regulatory prohibitions of activities or direct protections for any species included in the list. It is expressly stated in KRS 146.615 that this list of endangered or threatened plants shall not obstruct or hinder any development or use of public or private land. Furthermore, the intent of this statute is not to ameliorate the threats identified for the species, but it does provide information on the species.

The Tennessee Rare Plant Protection and Conservation Act of 1985 (TRPPCA; Tennessee Code Annotated 11–26–201) authorizes the Tennessee Department of Environment and Conservation (TDEC) to, among other things: Conduct investigations on species of rare plants throughout the State of Tennessee; maintain a listing of species of plants determined to be endangered, threatened, or of special concern within the State; and regulate the sale or export of endangered species via a licensing system. The TRPPCA forbids persons from knowingly uprooting, digging, taking, removing, damaging, destroying, possessing, or otherwise disturbing for any purpose, any endangered species from private or public lands without the written permission of the landowner, lessee, or other person entitled to possession and prescribes penalties for violations. The TDEC may use the list of threatened and special concern species when commenting on proposed public works projects in Tennessee, and the department encourages voluntary efforts to prevent the plants on this list from becoming endangered species. This authority is not, however, to be used to interfere with, delay, or impede any public works project.

Thus, despite the fact that the white fringeless orchid is listed as special concern, threatened, or endangered by the States of Georgia, North Carolina, and Tennessee and the Commonwealth of Kentucky, these designations confer no guarantee of protection to the species' habitat, whether on privately owned or State-owned lands, unless such protections are voluntarily extended to the species, and only prohibit unauthorized collection in Georgia, North Carolina, and Tennessee.

Section 404 of the Clean Water Act (CWA; 33 U.S.C. 1251 *et seq.*) establishes a Federal program for regulating the discharge of dredged or fill material into waters of the United States, including wetlands. Additionally, section 401 of the CWA forbids Federal agencies from issuing a permit or license for activities that may result in a discharge to waters of the United States until the State or Tribe where the discharge would originate has granted or waived certification. All of the States where white fringeless orchid occurs maintain regulatory programs providing a framework for issuance of section 401 certifications related to applications for section 404 permits.

This legislation does not prohibit the discharge of these materials into wetlands; rather, it provides a regulatory framework that requires permits prior to such action being taken. The U.S. Army Corps of Engineers (Corps) reviews individual permits for potentially significant impacts; however, most discharges are considered to have minimal impacts and may be covered by a general permit that does not require individual review.

Due to their typical position in non-navigable heads of streams located remotely from traditional navigable waters, where flow is ephemeral or intermittent and channels are poorly defined, if present at all, wetlands where white fringeless orchid occurs have been considered to not exhibit a significant nexus with traditional navigable waters. Therefore, these types of wetlands typically do not meet the definition of waters of the United States given in the Environmental Protection Agency (EPA) and Corps joint memorandum *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos* v. *United States & Carabell* v. *United States* (December 2, 2008). However, on June 29, 2015, the EPA and Corps published a final rule (80 FR 37054) that revises the definition of ''Waters of the United States.'' Specific guidance on implementation of this revised definition is currently lacking, but it appears that the revised definition now includes the habitats where white fringeless orchid occurs among waters of the United States.

While the wetland habitats occupied by white fringeless orchid are now likely to be included within the definition of waters of the United States, as noted above, section 404 of the CWA does not necessarily prevent degradation to such habitats from the discharge of dredge or fill material. It simply provides a regulatory program for permitting activities that would result in such a discharge. Further, discharges associated with normal farming, ranching, and forestry activities, such as plowing, cultivating, minor drainage, and harvesting for the production of food, fiber, and forest products are exempt from the requirement to obtain a permit. Thus, potential impacts to wetland habitats from silvicultural activities such as those described above in the Factor A discussion are not regulated under section 404 of the CWA.

Factor E. Other Natural or Manmade Factors Affecting Its Continued Existence

Small Population Size

The low number of individuals that have been seen at most white fringeless orchid occurrences (Figure 1, above) increases the species' vulnerability to threats, discussed under Factors A through D, above, by diminishing its resilience to recover from demographic reductions caused by habitat disturbance or modification, collecting, or herbivory. Despite the fact that white fringeless orchid has been shown to be self-compatible, higher rates of fruit set have been observed in larger populations, presumably due to higher rates of cross-pollination (Zettler and Fairey 1990, p. 214; Zettler *et al.* 1996, p. 20). Zettler *et al.* (1996, p. 22) attributed the lower fruiting rates in the smaller populations to inbreeding depression, noting that in a separate study both germination rates and propagation success were greater in white fringeless orchid seeds collected from the largest of the three populations they studied (Zettler and McInnis 1992, p. 160). Johnson *et al.* (2009, p. 3) found that higher proportions of self-pollination occurred in smaller populations of a moth-pollinated orchid, *Satyrium longicauda* (no common name), presumably due to pollinators visiting more flowers per plant in smaller populations and more frequently transferring pollen among flowers within a single inflorescence, rather than frequently moving among separate inflorescences on different individuals. To the extent that rates of cross-pollination, fruit set, germination, and propagation success are lower for white fringeless orchid populations of small size, demographic reductions resulting from other threats place the species at greater risk of localized extinctions.

While the results of genetic analyses did not demonstrate that genetic variability in populations of white fringeless orchid has been eroded by restricted gene flow, Birchenko (2001, pp. 34–40) cautioned that interactions between demographic and ecological factors could be a cause for some of the declines in white fringeless orchid population sizes and could ultimately cause declines in the species' genetic variation and increase differentiation among its populations. The ability of populations to adapt to environmental change is dependent upon genetic variation, a property of populations that derives from its members possessing different forms (*i.e.,* alleles) of the same gene (Primack 1998, p. 283). Small populations occurring in isolation on the landscape can lose genetic variation due to the potentially strong influence of genetic drift, *i.e.,* the random change in allele frequency from generation to generation (Barrett and Kohn 1991, p. 8). Smaller populations experience greater changes in allele frequency due to drift than do larger populations (Allendorf and Luikart 2007, pp. 121–122). Loss of genetic variation due to genetic drift heightens susceptibility of small populations to adverse genetic effects, including inbreeding depression and loss of evolutionary flexibility (Primack 1998, p. 283). Deleterious effects of loss of genetic variation through drift have been termed drift load, which is expressed as a decline in mean population performance of offspring in small populations (Willi *et al.* 2005, p. 2260).

Climate Change

Our analyses under the Act include consideration of ongoing and projected changes in climate. The terms ''climate'' and ''climate change'' are defined by the Intergovernmental Panel on Climate Change (IPCC). ''Climate'' refers to the mean and variability of different types of weather conditions over time, with 30 years being a typical period for such measurements, although shorter or longer periods also may be used (IPCC 2014, pp. 119–120). The term ''climate change'' thus refers to a change in the mean or variability of one or more measures of climate (*e.g.,* temperature or precipitation) that persists for an extended period, typically decades or longer, whether the change is due to natural variability, human activity, or both (IPCC 2014, pp. 119–120). A recent compilation of climate change and its effects is available from reports of the IPCC (IPCC 2014, entire).

Various types of changes in climate can have direct or indirect effects on species. These effects may be positive, neutral, or negative and they may change over time, depending on the species and other relevant considerations, such as the effects of interactions of climate with other variables (*e.g.,* habitat fragmentation) (IPCC 2007, pp. 8–14, 18–19). Projected changes in climate and related impacts can vary substantially across and within different regions of the world (*e.g.,* IPCC 2014, pp. 11–13). Therefore, we use ''downscaled'' projections when they are available and have been developed through appropriate scientific procedures (see Glick *et al.* 2011, pp. 58–61, for a discussion of downscaling). In our analyses, we use our expert judgment to weigh relevant information, including uncertainty, in our

consideration of various aspects of climate change.

The IPCC concluded that evidence of warming of the climate system is unequivocal (IPCC 2014, pp. 2, 40). Numerous long-term climate changes have been observed including changes in arctic temperatures and ice, widespread changes in precipitation amounts, ocean salinity, and aspects of extreme weather including heavy precipitation and heat waves (IPCC 2014, pp. 40–44). While continued change is certain, the magnitude and rate of change is unknown in many cases. Species that are dependent on specialized habitat types, are limited in distribution, or have become restricted to the extreme periphery of their range will be most susceptible to the impacts of climate change.

Estimates of the effects of climate change using available climate models lack the geographic precision needed to predict the magnitude of effects at a scale small enough to discretely apply to the range of white fringeless orchid (*i.e.,* there are no ''downscaled'' projections available). However, data on recent trends and predicted changes for the Southeast United States (Karl *et al.* 2009, pp. 111–122) provide some insight for evaluating the potential threat of climate change to the species. White fringeless orchid's geographic range lies within the geographic area included by Karl *et al.* (2009, pp. 111–116) in their summary of regional climate impacts affecting the Southeast region.

Since 1970, the average annual temperature across the Southeast has increased by about 2 degrees Fahrenheit (°F), with the greatest increases occurring during winter months. The geographic extent of areas in the Southeast region affected by moderate to severe spring and summer drought has increased over the past three decades by 12 and 14 percent, respectively (Karl *et al.* 2009, p. 111). These trends are expected to increase. Rates of warming are predicted to more than double in comparison to what the Southeast has experienced since 1975, with the greatest increases projected for summer months. Depending on the emissions scenario used for modeling change, average temperatures are expected to increase by 4.5 °F to 9 °F by the 2080s (Karl *et al.* 2009, p. 111). While there is considerable variability in rainfall predictions throughout the region, increases in evaporation of moisture from soils and loss of water by plants in response to warmer temperatures are expected to contribute to increased frequency, intensity, and duration of drought events (Karl *et al.* 2009, p. 112).

Depending on timing and intensity of drought events, white fringeless orchid occurrences could be adversely affected by increased mortality rates, reduced reproductive output due to loss or reduced vigor of mature plants, and reduced rates of seed germination and seedling recruitment. Further, white fringeless orchid's dependence upon a limited number of large Lepidoptera for pollination (Zettler *et al.* 1996, pp.16–22) and, potentially, on a single species of mycorrhizal fungi to complete its life cycle (Currah *et al.* 1997, p. 340) place the species at higher risk of extinction due to environmental changes that could diminish habitat suitability for it or the other species upon which it depends (Swarts and Dixon 2009, p. 546).

While climate has changed in recent decades in the southeastern United States and the rate of change likely will continue to increase into the future, we do not have data to determine specifically how the habitats where white fringeless orchid occurs will be affected by, or how the species will respond to, these changes. However, the potential for adverse effects to white fringeless orchid, either through changes in habitat suitability or by affecting populations of pollinators or mycorrhizal fungi, is likely to increase as climate continues to change at an accelerating rate.

Based on our review of the best commercial and scientific data available, diminished resilience of many occurrences due to small population sizes and the species' dependence on a limited number of Lepidoptera and a single species of fungi to complete its life cycle are currently threats of moderate magnitude to white fringeless orchid. These threats are expected to continue and, in light of climate change projections, possibly increase in the future.

Proposed Determination

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats to the white fringeless orchid. Habitat destruction and modification (Factor A) from development, silvicultural practices, excessive shading, and altered hydrology (*i.e.,* pond construction, beaver dam removal) have resulted in extirpation of the species from 10 sites. These threats, in addition to invasive plant species, feral hogs, and right-of-way maintenance, are associated with habitat modifications affecting dozens of other occurrences that are extant or of uncertain status. Collecting for scientific, recreational, or commercial purposes (Factor B) has been attributed as the cause for extirpation of white fringeless orchid at its type locality, and recent evidence demonstrates that this activity remains a threat to this species. Fungal pathogens have been identified as a threat to white fringeless orchid, but a threat with potentially greater impact associated with Factor C is inflorescence herbivory, presumably by deer, which has been reported at over one-third of extant occurrences and likely is a factor threatening most white fringeless orchid occurrences, especially where low numbers of plants are present. Tuber herbivory by feral hogs has been reported at the largest known white fringeless orchid occurrence. The effects of these threats are intensified by the small population sizes that characterize a majority of occurrences throughout the species' geographic range (Factor E), due to their diminished resilience to recover from demographic reductions caused by loss of individuals or low reproductive output from other threats. Further, the species' dependence on a limited number of Lepidoptera and a single species of fungi to complete its life cycle, make it vulnerable to disturbances that diminish habitat suitability for these taxa as well (Factor E). Existing regulatory mechanisms have not led to a reduction or removal of threats posed to the species from these factors (see Factor D discussion).

The Act defines an endangered species as any species that is ''in danger of extinction throughout all or a significant portion of its range'' and a threatened species as any species ''that is likely to become endangered throughout all or a significant portion of its range within the foreseeable future.'' We find that white fringeless orchid is likely to become endangered throughout all or a significant portion of its range within the foreseeable future based on the low to moderate threats currently impacting the species. The species is known to be extant at 58 locations, but low numbers of individuals have been observed at more than half of these (see Figure 1, above), distributed across the species' range, and their persistence into the future is uncertain. Furthermore, the threats of habitat destruction or modification and herbivory are present throughout the species' geographic range. Left unmanaged, these threats will likely lead to further reductions in the species' geographic range and abundance at individual sites, increasing the risk of extinction to the point of endangerment. Therefore, on the basis of the best available scientific and commercial information, we

propose listing the white fringeless orchid as threatened in accordance with sections 3(20) and 4(a)(1) of the Act. The species does not currently meet the definition of endangered, because a sufficient number of robust populations are present on publicly owned or managed lands. Conservation efforts have been initiated that could be effective in reducing threats by increasing population sizes and improving habitat conditions across much of the species' geographic range.

Under the Act and our implementing regulations, a species may warrant listing if it is endangered or threatened throughout all or a significant portion of its range. The threats to the survival of white fringeless orchid occur throughout the species' range and are not restricted to any particular significant portion of that range. Accordingly, our assessment and proposed determination applies to the species throughout its entire range. Therefore, because we have determined that white fringeless orchid is threatened throughout all of its range, no portion of its range can be ''significant'' for purposes of the definitions of ''endangered species'' and ''threatened species.'' See the Final Policy on Interpretation of the Phrase ''Significant Portion of Its Range'' in the Endangered Species Act's Definitions of ''Endangered Species'' and ''Threatened Species'' (79 FR 37578; July 1, 2014).

Critical Habitat and Prudency Determination

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

(1) The specific areas within the geographic area occupied by the 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 the 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 pursuant to the Act are no longer necessary.

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12), require that, to the maximum extent prudent and determinable, the Secretary shall designate critical habitat at the time the species is determined to be an endangered or threatened species. Our regulations (50 CFR 424.12(a)(1)) state that the designation of critical habitat is not prudent when one or both of the following situations exist:

(1) The species is threatened by taking, collection, or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species, or

(2) Such designation of critical habitat would not be beneficial to the species.

We have determined that white fringeless orchid is threatened by taking, collection, or other human activity and that identification of critical habitat would be expected to increase this threat. We also have determined that little measurable benefit to the species would result from designation of critical habitat. This determination involves weighing the expected increase in threats associated with a critical habitat designation against the benefits gained by a critical habitat designation. An explanation of this ''balancing'' evaluation follows.

Increased Threat to the Species by Designating Critical Habitat

Designation of critical habitat requires publication of maps and a narrative description of specific critical habitat areas in the **Federal Register**. The degree of detail in those maps and boundary descriptions is far greater than the general location descriptions provided in this listing proposal. Also, while general location data (*e.g.,* names of administrative units of the National Park Service (NPS), USFS, or State conservation agencies where the species occurs) concerning white fringeless orchid are available, maps or detailed descriptions are not found in scientific or popular literature, current agency management plans, or other readily available sources. One exception is the availability online of a now expired management plan for a site in Alabama with maps depicting two locations of the species. Location information can also be found in a journal article for a site in North Carolina, where the species is no longer extant. Designation of critical habitat would more widely announce the exact location of the white fringeless orchid to poachers, collectors, and vandals and further facilitate unauthorized collection. Due to its rarity (low numbers of individuals in most populations), this orchid is highly vulnerable to collection. Removal of individuals from extant populations would have devastating consequences in terms of reducing their viability, if not causing outright extirpation. These threats would be exacerbated by the publication of maps and descriptions outlining the specific locations of this imperiled orchid in the **Federal Register** and local newspapers. Maps and descriptions of critical habitat, such as those that would appear in the **Federal Register** if critical habitat were designated, are not now available to the general public.

We have discussed evidence related to poaching and commercial sale of white fringeless orchid and other congeners above (see Factor B, above). Due to the species' rarity, the small sizes of most known populations, and the fact that most of the populations are located in remote sites that are infrequently monitored by conservation organizations or law enforcement, collection is a threat to white fringeless orchid. In small populations, the collection of even a few individuals would diminish reproductive output and likely reduce genetic diversity. Identification of critical habitat would increase the magnitude and severity of this threat by spatially depicting exactly where the species may be found and widely publicizing this information, exposing these fragile populations and their habitat to greater risks. We have reviewed management plans and other documents produced by Federal and State conservation agencies and scientific literature, and detailed information on the specific locations of white fringeless orchid sites is not currently available.

Benefits to the Species From Critical Habitat Designation

It is true that designation of critical habitat for endangered or threatened species could have some beneficial effects. Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that actions they fund, authorize, or carry out are not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of that species' critical habitat. Critical habitat only provides protections where there is a Federal nexus, that is, those actions that come under the purview of section 7 of the Act. Critical habitat designation has no application to actions that do not have a Federal nexus. Section 7(a)(2) of the Act mandates that Federal agencies, in consultation with the Service, evaluate the effects of its proposed action on any designated critical habitat. Similar to the Act's requirement that a Federal agency action not jeopardize the

continued existence of listed species, Federal agencies have the responsibility not to implement actions that would destroy or adversely modify designated critical habitat. Critical habitat designation alone, however, does not require that a Federal action agency implement specific steps toward species recovery.

Available data indicate that white fringeless orchid is known from 58 extant occurrences and from 22 others whose current status is uncertain. Of these 80 occurrences, 17 are located on Federal lands managed by the USFS (12), NPS (3), and the Service (2), where they currently receive protection from adverse effects of management actions and, in some cases, receive management specifically to benefit the species and its habitat. Management efforts have taken place to control feral hogs and invasive plants, increase light availability by reducing woody vegetation cover, and restore hydrology. In addition, the USFS recently entered a Master Stewardship Agreement with the Atlanta Botanical Garden to provide for habitat management, captive propagation, and reintroduction or augmentation of populations on USFS lands, where appropriate. Some of the populations on Federal lands are the largest known, and any future activity involving a Federal action that would destroy or adversely modify critical habitat at these sites would also likely jeopardize the species' continued existence. Consultation with respect to critical habitat would provide additional protection to a species only if the agency action would result in the destruction or adverse modification of the critical habitat but would not jeopardize the continued existence of the species. In the absence of a critical habitat designation, areas that support white fringeless orchid will continue to be subject to conservation actions implemented under section 7(a)(1) of the Act and to the regulatory protections afforded by the section 7(a)(2) jeopardy standard, as appropriate.

Another possible benefit to white fringeless orchid from designating critical habitat would be that it could serve to educate landowners; State and local government agencies; visitors to National Forests, National Parks, and National Wildlife Refuges; and the general public regarding the potential conservation value of the areas. However, through the process of recognizing white fringeless orchid as a candidate for Federal listing, much of this educational benefit has already been realized and designating critical habitat would do little to increase awareness about the species' presence and need for conservation among affected land managers. Agencies, organizations, and stakeholders are actively engaged in efforts to raise awareness for the orchid and its conservation needs. For example, the Atlanta Botanical Garden received a Five Star Urban Habitat Restoration grant to improve habitat at several white fringeless orchid sites in Georgia, propagate the species for reintroductions or augmentations, and establish educational bog gardens at Chattahoochee Nature Center and the Atlanta Botanical Garden. This project, which is separate from the USFS agreement discussed above, involves seven official partners, including two local high schools and Georgia State University. In addition, designation of critical habitat could inform State agencies and local governments about areas that could be conserved under State laws or local ordinances. However, as awareness and education involving white fringeless orchid is already well underway and the species currently receives protection from adverse effects of management activities where it occurs on public and privately owned conservation lands, designation of critical habitat would likely provide only minimal incremental benefits.

Increased Threat to the Species Outweighs the Benefits of Critical Habitat Designation

Upon reviewing the available information, we have determined that the designation of critical habitat would increase the threat to white fringeless orchid from unauthorized collection and trade. At the same time, designation of critical habitat is likely to confer little measurable benefit to the species beyond that provided by listing. Overall, the risk of increasing significant threats to the species by publishing detailed location information in a critical habitat designation greatly outweighs the benefits of designating critical habitat.

In conclusion, we find that the designation of critical habitat is not prudent, in accordance with 50 CFR 424.12(a)(1), because white fringeless orchid is threatened by collection, and designation can reasonably be expected to increase the degree of this threat to the species and its habitat. However, we seek public comment on our determination that designation of critical habitat is not prudent.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness, and conservation by Federal, State, Tribal, and local agencies, private organizations, and individuals. The Act encourages cooperation with the States and other countries and calls for recovery actions to be carried out for listed species. The protection required by Federal agencies and the prohibitions against certain activities are discussed, in part, below.

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Subsection 4(f) of the Act calls for the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The recovery planning process involves the identification of actions that are necessary to halt or reverse the species' decline by addressing the threats to its survival and recovery. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

Recovery planning includes the development of a recovery outline shortly after a species is listed and preparation of a draft and final recovery plan. The recovery outline guides the immediate implementation of urgent recovery actions and describes the process to be used to develop a recovery plan. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery plan also identifies recovery criteria for review of when a species may be ready for downlisting or delisting, and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Recovery teams (composed of species experts, Federal and State agencies, nongovernmental organizations, and stakeholders) are often established to develop recovery plans. If the species is listed, the recovery outline, draft recovery plan, and the final recovery plan, when completed, would be available on our Web site (*http://www.fws.gov/endangered*), or from our Tennessee Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Implementation of recovery actions generally requires the participation of a broad range of partners, including other

Federal agencies, States, Tribes, nongovernmental organizations, businesses, and private landowners. Examples of recovery actions include habitat restoration (*e.g.,* restoration of native vegetation), research, captive propagation and reintroduction, and outreach and education. The recovery of many listed species cannot be accomplished solely on Federal lands because their range may occur primarily or solely on non-Federal lands. To achieve recovery of these species requires cooperative conservation efforts on private, State, and Tribal lands. If this species is listed, funding for recovery actions will be available from a variety of sources, including Federal budgets, State programs, and cost share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In addition, pursuant to section 6 of the Act, the State(s) of Georgia, South Carolina, and Tennessee and the Commonwealth of Kentucky would be eligible for Federal funds to implement management actions that promote the protection or recovery of the white fringeless orchid. Information on our grant programs that are available to aid species recovery can be found at: *http://www.fws.gov/grants.*

Although the white fringeless orchid is only proposed for listing under the Act at this time, please let us know if you are interested in participating in conservation efforts for this species. Additionally, we invite you to submit any new information on this species whenever it becomes available and any information you may have for conservation planning purposes (see **FOR FURTHER INFORMATION CONTACT**).

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as an endangered or threatened species and with respect to its critical habitat, if any is designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with the Service.

Federal agency actions within the species' habitat that may require conference or consultation or both as described in the preceding paragraph include management and any other landscape-altering activities on Federal lands administered by the U.S. Fish and Wildlife Service, USFS, and NPS; issuance of section 404 CWA permits by the Corps; powerline right-of-way construction and maintenance by the Tennessee Valley Authority; and construction and maintenance of roads or highways by the Federal Highway Administration.

With respect to threatened plants, 50 CFR 17.71 provides that all of the provisions at 50 CFR 17.61 shall apply to threatened plants. These provisions make it illegal for any person subject to the jurisdiction of the United States to import or export, transport in interstate or foreign commerce in the course of a commercial activity, sell or offer for sale in interstate or foreign commerce, or to remove and reduce to possession any such plant species from areas under Federal jurisdiction. In addition, the Act prohibits malicious damage or destruction of any such species on any area under Federal jurisdiction, and the removal, cutting, digging up, or damaging or destroying of any such species on any other area in knowing violation of any State law or regulation, or in the course of any violation of a State criminal trespass law. However, there is the following exception for threatened plants. Seeds of cultivated specimens of species treated as threatened shall be exempt from all the provisions of 50 CFR 17.61, provided that a statement that the seeds are of ''cultivated origin'' accompanies the seeds or their container during the course of any activity otherwise subject to these regulations. Exceptions to these prohibitions are outlined in 50 CFR 17.72.

We may issue permits to carry out otherwise prohibited activities involving threatened plants under certain circumstances. Regulations governing permits are codified at 50 CFR 17.72. With regard to threatened plants, a permit issued under this section must be for one of the following: Scientific purposes, the enhancement of the propagation or survival of threatened species, economic hardship, botanical or horticultural exhibition, educational purposes, or other activities consistent with the purposes and policy of the Act.

It is our policy, as published in the **Federal Register** on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable at the time a species is listed, those activities that would or would not constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effect of a proposed listing on proposed and ongoing activities within the range of species proposed for listing.

Based on the best available information, the following activities may potentially result in a violation of section 9 the Act; this list is not comprehensive:

(1) Unauthorized collecting, handling, possessing, selling, delivering, carrying, or transporting of white fringeless orchid, including import or export across State lines and international boundaries, except for properly documented antique specimens of this species at least 100 years old, as defined by section 10(h)(1) of the Act;

(2) Unauthorized removal, damage, or destruction of white fringeless orchid plants from populations located on Federal land (USFS, NPS, and Service lands); and

(3) Unauthorized removal, damage, or destruction of white fringeless orchid plants on private land in violation of any State regulation, including criminal trespass.

At this time, we are unable to identify specific activities that would not be considered to result in a violation of section 9 of the Act because white fringeless orchid occurs in a variety of habitat conditions across its range and it is likely that site-specific conservation measures may be needed for activities that may directly or indirectly affect the species.

Questions regarding whether specific activities would constitute a violation of section 9 of the Act should be directed to the Tennessee Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Required Determinations

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

(1) Be logically organized;

(2) Use the active voice to address readers directly;

(3) Use clear language rather than jargon;

(4) Be divided into short sections and sentences; and

(5) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one

of the methods listed in the **ADDRESSES** section. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

National Environmental Policy Act

We have determined that environmental assessments and environmental impact statements, as defined under the authority of the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*), need not be prepared in connection with listing a species as an endangered or threatened species under the Endangered Species Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

A complete list of references cited in this rulemaking is available on the Internet at *http://www.regulations.gov* and upon request from the Tennessee Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this proposed rule are the staff members of the Tennessee Ecological Services Field Office.

List of Subjects in 50 CFR Part 17

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

Proposed Regulation Promulgation

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

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

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

Authority: 16 U.S.C. 1361–1407; 1531–1544; and 4201–4245, unless otherwise noted.

■ 2. In § 17.12(h), add an entry for *Platanthera integrilabia* (white fringeless orchid) to the List of Endangered and Threatened Plants in alphabetical order under FLOWERING 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							
*	*	*	*	*	*	*	
Platanthera integrilabia	White fringeless orchid.	U.S.A. (AL, GA, KY, MS, NC, SC, TN).	Orchidaceae	T		NA	NA
*	*	*	*	*	*	*	

* * * * *

Dated: August 14, 2015.

Stephen Guertin,

Director, U.S. Fish and Wildlife Service.

[FR Doc. 2015–22973 Filed 9–14–15; 8:45 am]

BILLING CODE 4310–55–P