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50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Physaria globosa (Short's bladderpod), Helianthus verticillatus (whorled sunflower), and Leavenworthia crassa (fleshy-fruit gladecress); Final Rule

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R4–ES–2013–0086; 4500030114]

RIN 1018–AZ60

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Physaria globosa (Short's bladderpod), Helianthus verticillatus (whorled sunflower), and Leavenworthia crassa (fleshy-fruit gladecress)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), designate critical habitat for *Physaria globosa* (Short's bladderpod), *Helianthus verticillatus* (whorled sunflower), and *Leavenworthia crassa* (fleshy-fruit gladecress) under the Endangered Species Act of 1973, as amended (Act). In total, approximately 1,006 hectares (ha) (2,488 acres (ac)) in Alabama, Georgia, Indiana, Kentucky, and Tennessee fall within the boundaries of the critical habitat designations.

DATES: This rule becomes effective on September 25, 2014.

ADDRESSES: This final rule is available on the internet at *http://www.regulations.gov* and *http://fws.gov/cookeville*. Comments and materials we received, as well as some supporting documentation we used in preparing this final rule, are available for public inspection at *http://www.regulations.gov*. All of the comments, materials, and documentation that we considered in this rulemaking are available by appointment, during normal business hours at: U.S. Fish and Wildlife Service, Tennessee Ecological Services Office, 446 Neal Street, Cookeville, TN 38501; telephone 931–528–6481; fax 931–528–7075.

The coordinates or plot points or both from which the maps are generated are included in the administrative record for this critical habitat designation and are available at *http://fws.gov/cookeville*, at *http://www.regulations.gov* at Docket No. FWS–R4–ES–2013–0086, and at the U.S. Fish and Wildlife Service, Tennessee Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**). Any additional tools or supporting information that we developed for this critical habitat designation will also be available at the Fish and Wildlife Service Web site and Field Office set out above, and may also be included in the preamble and at *http://www.regulations.gov*.

FOR FURTHER INFORMATION CONTACT: Mary E. Jennings, Field Supervisor, U.S. Fish and Wildlife Service, Tennessee Ecological Services Fish and Wildlife Office, (see **ADDRESSES** above). 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, when we determine that any species is an endangered or threatened species, we must designate critical habitat to the maximum extent prudent and determinable. Critical habitat may be designated only by issuing a rule.

This rule consists of: A final rule designating critical habitat for Short's bladderpod, whorled sunflower, and fleshy-fruit gladecress. We are designating:

- Approximately 373 ha (925.5 ac) in 20 units in Posey County, Indiana; Clark, Franklin, and Woodford Counties, Kentucky; and Cheatham, Davidson, Dickson, Jackson, Montgomery, Smith, and Trousdale Counties, Tennessee, for Short's bladderpod.
- Approximately 624.2 ha (1,542.3 ac) in four units in Cherokee County, Alabama; Floyd County, Georgia; and Madison and McNairy Counties, Tennessee, for whorled sunflower.
- Approximately 8.4 ha (20.6 ac) in seven units in Lawrence and Morgan Counties, Alabama, for fleshy-fruit gladecress.

This rule consists of: A final rule for designation of critical habitat for Short's bladderpod, whorled sunflower, and fleshy-fruit gladecress.

We have prepared an economic analysis of the designation of critical habitat. We have prepared an analysis of the economic impacts of the critical habitat designation and related factors. We announced the availability of the draft economic analysis in the **Federal Register** on May 29, 2014 (79 FR 30792), allowing the public to provide comments. We have incorporated the comments and have completed the final economic analysis concurrently with this final determination.

Peer review and public comment. We sought comments from independent specialists to ensure that our designation is based on scientifically sound data and analyses. We obtained opinions from five knowledgeable individuals with scientific expertise to review our technical assumptions, analysis, and whether or not we had used the best available information. These peer reviewers generally concurred with our methods and conclusions and provided additional information, clarifications, and suggestions to improve this final rule. Information we received from peer review is incorporated in this final revised designation. We also considered all comments and information received from the public during the comment period.

Previous Federal Actions

All previous Federal actions are described in the proposed rule to list Short's bladderpod, whorled sunflower, and fleshy-fruit gladecress as endangered species under the Act, which published on August 2, 2013 (78 FR 47109). Also on this date, we proposed critical habitat for these species (78 FR 47059). On May 29, 2014 (79 FR 30792), we announced the availability of the draft economic analysis (DEA) for the proposed critical habitat designation, and the reopened the public comment period to allow comment on the DEA and further comment on the proposed rule.

Summary of Comments and Recommendations

We requested written comments from the public on the proposed designation of critical habitat for Short's bladderpod, whorled sunflower, and fleshy-fruit gladecress during two comment periods. The first comment period opened with the publication of the proposed rule (78 FR 47060) on August 2, 2013, and closed on October 1, 2013. We also requested comments on the proposed critical habitat designation and associated draft economic analysis during a second comment period, which opened on May 29, 2014, and closed on June 30, 2014 (79 FR 30792). We also contacted appropriate Federal, State, and local agencies; scientific organizations; and other interested parties and invited them to comment on the proposed rule and draft economic analysis during these comment periods.

During the first comment period, we received two comment letters directly addressing the proposed critical habitat designation. During the second comment period, we did not receive any comments on the proposed critical habitat designation or the draft economic analysis. We did not receive any requests for a public hearing during either comment period. All substantive information provided during comment

periods has either been incorporated directly into this final determination or addressed below.

Peer Review

In accordance with our peer review policy published on July 1, 1994 (59 FR 34270), we solicited expert opinions from five knowledgeable individuals with scientific expertise that included familiarity with one or more of the species, the geographic region in which the species occur, and conservation biology principles. We received responses from all five of the peer reviewers.

We reviewed all comments received from the peer reviewers for substantive issues and new information regarding critical habitat for the Short's bladderpod, whorled sunflower, and fleshy-fruit gladecress. The peer reviewers generally concurred with our methods and conclusions, and one of the peer reviewers provided additional information, clarifications, and suggestions to improve the final rule. Peer reviewer comments are addressed in the following summary and incorporated into this final rule as appropriate.

Peer Reviewer Comments

(1) *Comment:* A peer reviewer questioned why there is no unoccupied habitat for the fleshy fruit gladecress included in the critical habitat designation.

Our Response: We considered whether any sites where the species is historically known to have occurred, but is currently not present, should be designated as critical habitat. None of those sites are located on protected lands, and the best available data indicate that the species' absence from these sites is due to destruction or alteration of glade habitat, so that these previously occupied areas no longer provide the habitat features essential for the conservation of the species.

(2) *Comment:* A reviewer questioned whether we should have considered designating critical habitat on some of the sites where Short's bladderpod has been extirpated. The reviewer reasoned that, because we do not know how long seed can remain viable in the soil, it is possible that some of these sites could contain a dormant soil seed bank that could facilitate population recovery.

Our Response: We agree with the reviewer that data are lacking concerning the length of time that seeds remain viable in the soil. However, we reviewed available data for all localities from where we concluded that Short's bladderpod has been extirpated and determined that either the original data reporting the species' historical presence was too imprecise for surveyors to relocate those occurrences, despite attempts to do so, or that habitat has either been destroyed or altered to a degree that it no longer is essential for the conservation of the species. We reviewed the unoccupied habitat and found that these areas no longer provided the primary constituent elements or the habitat features needed for the survival of the species.

Federal Comment

During the public comment periods, we received one comment letter from the U.S. Army Corps of Engineers addressing the proposed critical habitat.

(3) *Comment:* The Corps of Engineers, Nashville District, expressed concern with the Service's identification of the potential need for special management considerations or protection to reduce the threat of prolonged inundation of sites (i.e., critical habitat) due to manipulation of regulated waters for flood control or other purposes. The Corps stated that the operation of the Cumberland River and tributary projects as a system will, during flood events, sometimes cause inundation of lower elevations of some critical habitat units, but that the units would not generally be subjected to prolonged inundation due to the need to quickly recover flood storage by lowering reservoir elevations. The Corps noted, however, that operations related to flood control are dictated by water conditions throughout the basin and the need to ensure that flood risks and impacts to human health and safety are addressed and minimized. For this reason the Corps requested that we exclude from our list of special management considerations their operations for flood control purposes or clarify that this operation is a health and safety management measure that will receive special consideration relative to a potential threat to the endangered species and its designated habitat.

Our Response: We acknowledge that the Corps' operation of the Cumberland River and tributary projects, as it relates to flood control, is an important service to the public that is necessary to minimize flood risks and impacts to human health. We also acknowledge that the Corps has been an active partner in pre-listing conservation efforts, allowing access for surveys and monitoring efforts that produced much of the data that we used in designating critical habitat for Short's bladderpod, and has expressed interest in working with the Service to develop management plans for Short's bladderpod and critical habitat units located on lands owned or managed by the Corps. After further consideration of the Corps' concerns and the potential benefits to the species, we have reaffirmed our decision not to exclude prolonged inundation of sites due to manipulation of regulated waters for flood control or other purposes from the list of actions that could require special management considerations or protections to minimize potential effects to the species or designated critical habitat.

As discussed below (see Section 7 Consultation), section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. The Corps is currently preparing a biological assessment of the effects to listed species and critical habitat that could result from operations and maintenance of dams and other infrastructure on the Cumberland River for flood control and other purposes (not including navigation) for the purpose of consulting with the Service under Section 7(a)(2). The biological assessment should identify measures that could be taken to (1) minimize adverse effects from such circumstances, and (2) compensate for any adverse effects that are unavoidable due to prolonged inundation resulting from flood control operations. In the event that flood conditions should occur that require the Corps to raise reservoir levels for prolonged periods to protect human health and safety and minimize flood risks to downstream communities prior to having concluded consultation with the Service, the Act includes provisions that would allow the Corps to request emergency consultation within 48 hours of responding to such emergency conditions.

Summary of Changes From Proposed Rule

Based on information we received from the Tennessee Valley Authority after the proposed rule was published, we have added one additional critical habitat unit for the fleshy-fruit gladecress to this final rule. The total number of critical habitat units is now seven for this species. This unit is located in an electrical transmission line right-of-way on privately owned land in Lawrence County, Alabama, and is approximately 0.04 hectare (ha) (0.1 acre (ac)) in size. We included details of this unit in the notice of availability of the economic analysis and reopening of

the public comment period for the proposed critical habitat designation on May 29, 2014 (79 FR 30792).

Critical Habitat

Background

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

(1) The specific areas within the geographical 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. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management, such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

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

Under the first prong of the Act's definition of critical habitat, areas within the geographical area occupied by the species at the time it was listed are included in a critical habitat designation if they contain physical or biological features (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat). In identifying those physical or biological features within an area, we focus on the principal biological or physical constituent elements (primary constituent elements such as roost sites, nesting grounds, seasonal wetlands, water quality, tide, soil type) that are essential to the conservation of the species. Primary constituent elements are those specific elements of the physical or biological features that provide for a species' life-history processes and are essential to the conservation of the species.

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in 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. For example, an area currently occupied by the species but that was not occupied at the time of listing may be essential to the conservation of the species and may be included in the critical habitat designation. We designate critical habitat in areas outside the geographical area occupied by a species only when a designation limited to its range would be inadequate to ensure the conservation of the species.

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

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

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

Physical or Biological Features

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

(1) Space for individual and population growth and for normal behavior;

(2) Food, water, air, light, minerals, or other nutritional or physiological requirements;

(3) Cover or shelter;

(4) Sites for breeding, reproduction, or rearing (or development) of offspring; and

(5) Habitats that are protected from disturbance or are representative of the historical, geographical, and ecological distributions of a species.

We derive the specific physical or biological features essential for Short's bladderpod, whorled sunflower, and fleshy-fruit gladecress from studies of these species' habitat, ecology, and life history as described in the Critical Habitat section of the proposed rule to designate critical habitat published in the **Federal Register** on August 2, 2013 (78 FR 47060), and in the information presented below. Additional information can be found in the final listing rule published elsewhere in this **Federal Register**. We have determined that these species require the following physical or biological features:

Space for Individual and Population Growth and for Normal Behavior

Short's bladderpod. This species occurs in Kentucky and Tennessee on soils and outcrops of calcareous geologic formations along the mainstem or tributaries of the Kentucky and Cumberland Rivers, respectively. The calcareous bedrock formations on which Short's bladderpod primarily is found are limestones of Mississippian, Silurian, or Ordivician age, with siltstone or shale interbedded at some occurrences (Kentucky Geological Survey, *http://www.arcgis.com/home/item.html?id=d32dc6edbf9245cdbac3fd7e255d3974*; Moore *et al.* 1967; Wilson 1972, 1975, 1979; Wilson *et al.* 1972, 1980; Marsh *et al.* 1973; Finlayson *et al.* 1980; Kerrigan and Wilson 2002). Soils where Short's bladderpod occurs in the Kentucky and Cumberland River drainages have formed from weathering of the underlying calcareous bedrock formations, which produced shallow or rocky, well-drained soils in which bedrock outcrops are common (U.S. Department of Agriculture (USDA) 1975, pp. 12–17; USDA 1981, pp. 46–47; USDA 1985, p. 64.; USDA 2001, pp. 19–20, 28, 59, 64; USDA 2004a, pp. 22–23, 36–37, 83, 87; USDA 2004b, pp. 21, 75, 82). The species inhabits these outcrops and soils where they occur on steeply sloped bluffs or hillsides, primarily with a south- to west-facing aspect (Shea 1993, p. 16). The combination of calcareous outcrops and shallow soils, steep slopes, and hot and dry conditions present on south- to west-facing slopes regulates the encroachment of herbaceous and woody species that exclude Short's bladderpod from vegetation communities present on more mesic sites. Where these conditions occur near the mainstem and tributaries of the Kentucky River in Kentucky and Cumberland River in Tennessee, they provide space for Short's bladderpod's individual and population growth.

Therefore, based on the above information, we identify steeply sloped hillsides or bluffs with calcareous outcrops or shallow or rocky, well-drained soils, typically on south- to west-facing aspects, as an essential physical or biological feature for this species.

Whorled sunflower. This species occurs in remnant prairie habitats found in uplands and swales of headwater streams in the Coosa River watershed in Georgia and Alabama and in the East Fork Forked Deer and Tuscumbia Rivers' watersheds in Tennessee. The soil types are silt loams, silty clay loams, and fine sandy loams at the sites where whorled sunflower occurs. These soils share the characteristics of being strongly to extremely acidic and having low to moderate natural fertility and low to medium organic matter content (USDA 1997, pp. 73–76; USDA 1978a, pp. 24–54; USDA 1978b, p. 20; USDA 1978c, p. 44). The silt loams occupy various land forms ranging from broad upland ridges to low stream terraces. These soils formed from weathered limestone or shale (USDA 1978a, pp. 24–54) or in alluvium (clay, silt, sand, gravel, or similar material deposited by running water) derived from loess (predominantly silt-sized sediment, which is formed by the accumulation of wind-blown dust) and are moderately well-drained to well-drained. The silty clay loams formed in alluvium or weathered limestone on floodplains, stream terraces, or upland depressions and are poorly drained. The fine sandy loams are on floodplains and are occasionally flooded during winter and early spring. Where these physical features occur within the headwaters of the Coosa River in Alabama and Georgia and the East Fork Forked Deer and Tuscumbia Rivers in Tennessee, they provide space for the whorled sunflower's individual and population growth.

Therefore, based on the information above, we identify silt loam, silty clay loam, or fine sandy loam soils on land forms including broad uplands, depressions, stream terraces, and floodplains as an essential physical or biological feature for this species.

Fleshy-fruit gladecress. This species is endemic to glade communities associated with limestone outcrops in Lawrence and Morgan Counties, Alabama (Rollins 1963). The terms glade and cedar glades refer to shallow-soiled, open areas that are dominated by herbaceous plants and characterized by exposed sheets of limestone or gravel, with *Juniperus virginiana* (eastern red cedar) frequently occurring in the deeper soils along their edges (Hilton 1997, p. 1; Baskin *et al.* 1986, p. 138; Baskin and Baskin 1985, p. 1). Much of the cedar glade habitat in northern Alabama is in a degraded condition, and populations of fleshy-fruit gladecress, in many cases, persist in glade-like remnants exhibiting various degrees of disturbance including pastures, roadside rights-of-way, and cultivated or plowed fields (Hilton 1997, p. 5). The limestone outcrops, gravel, and shallow soils present in cedar glades and glade-like remnants provide space for individual and population growth of fleshy-fruit gladecress by regulating the encroachment of herbaceous and woody vegetation that would exclude fleshy-fruit gladecress from plant communities found on deeper soils.

Therefore, based on the information above, we identify shallow-soiled, open areas with exposed limestone bedrock or gravel that are dominated by herbaceous plants as an essential physical or biological feature for this species.

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

Short's bladderpod. Within the physical settings described above and the atypical physical setting where the species occurs in Indiana, the most vigorous (Shea 1992, p. 24) and stable (Tennessee Department of Environment and Conservation 2009, p. 1) Short's bladderpod occurrences are found in patches within forested sites where the canopy has remained relatively open over time. Overstory shading has been implicated as a factor contributing to the

disappearance of Short's bladderpod from four historically occupied sites and has been identified as a limiting factor at nearly one-fifth of remaining extant occurrences. Competition or shading from invasive, nonnative, herbaceous and shrub species is a documented threat to one-third of the extant Short's bladderpod occurrences. Therefore, based on the information above, we identify forest communities with low levels of canopy closure or openings in the canopy, in which invasive, nonnative plants are absent or are present at sufficiently low levels of abundance that would not inhibit growth or reproduction of Short's bladderpod plants, to be an essential physical or biological feature for this species.

Whorled sunflower. This species is found in moist, prairie-like remnants, which in a more natural condition exist as openings in woodlands and along adjacent creeks. Today, these conditions are most often found in small remnant patches or old field habitats adjacent to roadsides, railroad rights-of-way, and streams bordered by agricultural lands. Whorled sunflower grows most vigorously where there is little to no forest canopy cover, plants receive full sunlight for most of the day (Schotz 2011, p. 5) and herbaceous species that are characteristic of moist-site prairie vegetation are found.

Dominant grasses include *Schizachyrium scoparium* (little bluestem), *Sorghastrum nutans* (Indian grass), *Andropogon gerardii* (big bluestem), and *Panicum virgatum* (switch grass). Other common herbaceous associates include *Bidens bipinnata* (Spanish needles), *Carex cherokeensis* (Cherokee sedge), *Hypericum sphaerocarpum* (roundseed St. Johnswort), *Helianthus angustifolius* (swamp sunflower), *Helenium autumnale* (common sneezeweed), *Lobelia cardinalis* (cardinal flower), *Pycnanthemum virginianum* (Virginia mountainmint), *Physostegia virginiana* (obedient plant), *Saccharum giganteum* (sugarcane plumegrass), *Silphium terebinthinaceum* (prairie rosinweed), *Sporobolus heterolepis* (prairie dropseed), and *Symphyotrichum novae-angliae* (New England aster) (Tennessee Division of Natural Areas 2008, p. 5; Matthews et al. 2002, p. 23; Schotz 2001, p. 3). Encroachment by woody vegetation is a threat to whorled sunflower populations when left unmanaged in old fields, transportation rights-of-way, and borders of agricultural fields, as well as in densely shaded silvicultural plantations or forested sites. To prevent excessive shading or competition, these sites should be subjected to periodic disturbance or management to reduce or minimize encroachment of woody vegetation where a forest canopy is not present, or to provide low levels of canopy and midstory closure where they occur in woodlands.

Therefore, based on the information above, we identify sites in old fields, woodlands, and along streams, which receive full or partial sunlight for most of the day and where vegetation characteristics of moist prairie communities is present, to be an essential physical or biological feature for this species.

Fleshy-fruit gladecress. In Morgan, Lawrence, Franklin, and Colbert Counties in northwestern Alabama, glades occur in association with outcrops of Bangor Limestone, typically as level areas with exposed sheets of limestone or limestone gravel interspersed with fingers of cedar-hardwood vegetation. The Bangor Limestone is often near the soil surface, and can be seen in rocky cultivated fields and as small outcroppings at the base of low-lying forested hills (Hilton 1997).

All species within the small genus *Leavenworthia* are adapted to the unique physical characteristics of glade habitats, perhaps the most important of these being a combination of shallow soil depth and the resulting tendency to maintain temporary high moisture content at or very near the surface (Rollins 1963, pp. 4–6). Typically, only a few centimeters of soil overlie the bedrock, or, in spots, the soil may be almost lacking and the surface barren. The glade habitats that support all *Leavenworthia* species are extremely wet during the late winter and early spring and become extremely dry in summer (Rollins 1963, p. 5). These glades can vary in size from as small as a few meters to larger than 1 square kilometer (km^2) (0.37 square miles (mi^2)) and are characterized as having an open, sunny aspect (lacking canopy) (Quarterman 1950, p. 1; Rollins 1963, p. 5).

Fleshy-fruit gladecress populations are restricted to well-lighted portions of limestone outcroppings. Baskin and Baskin (1988, p. 837) indicated that a high light requirement was common among the endemic plants of rock outcrop plant communities in the un-glaciated eastern United States. This obligate need for high light has been supported by field observations showing that these eastern outcrop endemics, such as fleshy-fruit gladecress, grow on well-lighted portions of the outcrops but not in adjacent shaded forests; photosynthesize best in full sun, with a reduction in the presence of heavy shading; and compete poorly with plants that shade them (Baskin and Baskin 1988, p. 837). The most vigorous populations of fleshy-fruit gladecress are located in areas that receive full, or near full, sunlight at the canopy level, and have limited herbaceous competition (Hilton 1997, p. 5). Under these conditions, herbaceous species commonly found in glades in association with fleshy-fruit gladecress are listed in Table 1. Shading and competition are potential threats at the two largest populations of fleshy-fruit gladecress (Hilton 1997, p. 68). Nonnative plants including *Ligustrum vulgare* (common privet) and *Lonicera maackii* (bush honeysuckle) are a significant threat in many glades due to the ever present disturbances that allow for their colonization (Hilton 1997, p. 68).

TABLE 1—CHARACTERISTIC FLORA OF CEDAR GLADE HABITAT

Scientific name	Common name
Primary Characteristic Herbs	
Astragalus tennesseensis.	Tennessee milkvetch.
Leavenworthia alabamica.	Alabama gladecress.
Leavenworthia uniflora.	Michaux's gladecress.
Petalostemum spp. ...	Prairie clover.
Delphinium tricorne ...	Dwarf larkspur.
Arabis laevigata	Smooth rockcress.
Schoenolirion croceum.	Yellow sunnybell.
Scutellaria parvula	Small skullcap.
Frequent Woody Species	
Juniperus virginiana ..	Eastern red cedar.

Therefore, based on the information above, we identify open, sunny exposures of limestone outcrops of the Bangor formation within glade plant communities that are characterized by the species listed in Table 1 and have relatively thin, rocky soils that are classified within the Colbert or Talbot soils mapping units as an essential physical or biological feature for this species.

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

Short's bladderpod. This species likely is self-incompatible, and nearly 50 percent of extant occurrences are threatened with adverse effects associated with small populations including loss of genetic variation, inbreeding depression, and reduced availability of compatible mates. For this reason, it is essential that habitat for

pollinators be conserved in close proximity to known occurrences to increase the likelihood of pollen exchange among compatible mates. Where possible, habitat patches should be protected that would reduce fragmentation between multiple occurrences among which pollinator dispersal could facilitate gene flow.

Pollinators specific to Short's bladderpod have not been studied. Bees from the families Halictidae, Apidae, and Andrenidae were found to be the most common pollinators visiting four other species in the genus *Physaria,* and flies from the families Syrphidae, Tachinidae, and Conopidae also carried *Physaria* pollen (Edens-Meier *et al.* 2011, p. 293; Tepedino *et al.* 2012, pp. 143–145). In their study of pollinators of three species of *Physaria,* Tepedino *et al.* (2012, p. 144) estimated that maximum flight distance ranged from 100 m (330 ft) to 1.4 km (0.9 mi) for Andrenids and 40 to 100 m (130 to 330 ft) for Halictid bees. Because native, ground-nesting bees in the Andrenidae and Halictidae were the most reliable visitors and pollinators of the *Physaria* species they studied, Tepedino *et al.* (2012, p. 145) recommended avoiding physical disruption of the soil nesting substrate and its drainage patterns in sites harboring bee nests.

Short's bladderpod is thought to form soil seed banks (Dr. Carol Baskin, Professor, University of Kentucky, pers. comm., December 2012), and persistence of populations likely is dependent on formation and maintenance of this pool of dormant individuals. Sites where the species occurs should not be subjected to activities that would remove the soil seed bank. Moderate soil disturbance, however, could promote germination from the seed bank in locations where overstory shading and competition from herbaceous and shrub species have caused population declines. Positive responses have been observed following removal of competing vegetation and soil disturbance associated with grading of the roadside at the site where Short's bladderpod occurs in Indiana.

Therefore, based on the information above, we identify reproduction sites containing extant occurrences of the species within habitat patches providing suitable pollinator habitat, and in which surface features and bladderpod seedbed are not subjected to heavy disturbance, to be an essential physical or biological feature for this species.

Whorled sunflower. This species is self-incompatible, and the lack of compatible mates has been suggested as a possible cause of reduced achene production in one population (Ellis *et al.* 2009, p. 1840). Degraded habitat conditions also contribute to poor individual growth and reproductive output in whorled sunflower. Where woody vegetation encroaches on whorled sunflower populations, growth and flower production are reduced. While the species can produce new stems via shoot generation from rhizomes, the production of genetically distinct individuals needed to support population growth and maintain genetic variation within the species is dependent on flowering and outcrossing of compatible mates and production of viable achenes. Therefore, based on the information above, we identify the presence of compatible mates in sites that receive full or partial sunlight for most of the day to be an essential physical or biological feature for this species.

Fleshy-fruit gladecress. Glades where fleshy-fruit gladecress grows have very shallow soils overlying horizontally bedded limestone. Precipitation tends to be very seasonal within the species' geographic range, with wet weather concentrated in the winter and early spring and summer (Lyons and Antonovics 1991).

Fleshy-fruit gladecress is an annual species, the seeds of which germinate in the fall, overwinter as rosettes, and commence a month-long flowering period beginning in mid-March. The first seeds mature in late April, and during most years, the plants dry and drop all of their seeds by the end of May. *Leavenworthia* species are dormant by early summer, helping them to survive the dry period as seed; this dormancy is likely one of the major evolutionary adaptations in this genus enabling its species to endure the extreme drought conditions of late summer (Quarterman 1950, p. 5). As an annual, this species' long-term survival is dependent upon its ability to reproduce and reseed an area every year. Thus, populations decline and move toward extinction if conditions remain unsuitable for reproduction for many consecutive years.

The most vigorous populations of fleshy-fruit gladecress are located in areas that receive full, or near full, sunlight at the canopy level and have limited herbaceous competition (Hilton 1997). Rollins (1963) documented the loss of fleshy-fruit gladecress individuals caused by invading weedy species in fallow agricultural fields in northern Alabama. Under natural conditions, glades are edaphically (related to or caused by particular soil conditions) maintained through processes of drought and erosion interacting with other processes that disrupt encroachment of competing vegetation. The shallow soil, exposed rock, and frequently hot, dry summers create xeric conditions that regulate competition and shading from encroaching vegetation (Hilton 1997, p. 5; McDaniel and Lyons 1987, p. 6; Baskin et al. 1986, p. 138; Rollins 1963, p. 5).

Therefore, based on this information, we identify the presence of shallow soil and exposed rock that discourage competition and shading from encroaching vegetation to be an essential physical or biological feature for this species.

Primary Constituent Elements

Under the Act and its implementing regulations, we are required to identify the physical or biological features essential to the conservation of Short's bladderpod, whorled sunflower, and fleshy-fruit gladecress in areas occupied at the time of listing, focusing on the features' primary constituent elements. Primary constituent elements (PCEs) are those specific elements of the physical or biological features that provide for a species' life-history processes and are essential to the conservation of the species.

Based on our current knowledge of the physical or biological features and habitat characteristics required to sustain the species' life-history processes, we determine that the PCEs for these three plant species are:

Short's Bladderpod

(1) PCE 1—Bedrock formations and outcrops of calcareous limestone, sometimes with interbedded shale or siltstone, in close proximity to the mainstem or tributaries of the Kentucky and Cumberland rivers. These outcrop sites or areas of suitable bedrock geology should be located on steeply sloped hillsides or bluffs, typically on south- to west-facing aspects.

(2) PCE 2—Shallow or rocky, well-drained soils formed from the weathering of underlying calcareous bedrock formations, which are undisturbed or subjected to minimal disturbance, so as to retain habitat for ground-nesting pollinators and potential for maintenance of a soil seed bank.

(3) PCE 3—Forest communities with low levels of canopy closure or openings in the canopy to provide adequate sunlight for individual and population growth. Invasive, nonnative plants must be absent or present in sufficiently low numbers not to inhibit growth or reproduction of Short's bladderpod.

Whorled Sunflower

(1) PCE 1—Silt loam, silty clay loam, or fine sandy loam soils on land forms including broad uplands, depressions, stream terraces, and floodplains within the headwaters of the Coosa River in Alabama and Georgia and the East Fork Forked Deer and Tuscumbia rivers in Tennessee.

(2) PCE 2—Sites in which forest canopy is absent, or where woody vegetation is present at sufficiently low densities to provide full or partial sunlight to whorled sunflower plants for most of the day, and which support vegetation characteristic of moist prairie communities. Invasive, nonnative plants must be absent or present in sufficiently low numbers not to inhibit growth or reproduction of whorled sunflower.

(3) PCE 3—Occupied sites in which a sufficient number of compatible mates are present for outcrossing and production of viable achenes to occur.

Fleshy-Fruit Gladecress

(1) PCE 1—Shallow-soiled, open areas with exposed limestone bedrock or gravel that are dominated by herbaceous vegetation characteristic of glade communities.

(2) PCE 2—Open or well-lighted areas of exposed limestone bedrock or gravel that ensure fleshy-fruit gladecress plants remain unshaded for a significant portion of the day.

(3) PCE 3—Glade habitat that is protected from both native and invasive, nonnative plants to minimize competition and shading of fleshy-fruit gladecress.

Special Management Considerations or Protections

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

Short's Bladderpod

The features essential to the conservation of Short's bladderpod may require special management considerations or protection to reduce the following threats: (1) Actions that would directly result in removal of soils or indirectly cause their loss due to increased rates of erosion; (2) building, paving, or grazing of livestock within or upslope of Short's bladderpod sites that alters water movement or causes soil erosion that results in sediment deposition in suitable habitat; (3) blasting or removal of hard rock and soil substrates; (4) dumping of trash and debris; (5) prolonged inundation of sites due to manipulation of regulated waters for flood control or other purposes; (6) indiscriminate maintenance of transportation rights-of-way, including grading, mowing, or herbicide application; and (8) shading and competition due to forest canopy closure and encroachment of invasive, nonnative plants.

Management activities that could ameliorate these threats include, but are not limited to: (1) Avoiding areas located in or upslope of Short's bladderpod sites when planning for location of commercial or residential development; maintenance, construction, or expansion of utility and transportation infrastructure; and access for livestock; (2) removing trash and debris that are dumped onto or upslope of Short's bladderpod sites; (3) locating suitable habitat, determining presence or absence of Short's bladderpod, and protecting or restoring as many sites or complexes of sites as possible; (4) evaluating the effects of flow regulation on Short's bladderpod occurrences within the fluctuation zone of regulated river reaches and adjusting management to avoid or minimize prolonged periods of inundation; (5) reaching out to all landowners, including private, State, and Federal landowners, to raise awareness of the plant and its habitat; (5) providing technical or financial assistance to landowners to help in the design and implementation of management actions that protect the plant and its habitat; (6) managing, including reducing, canopy cover and competition from native and invasive, nonnative plants to maintain an intact native forest community with canopy openings or low levels of canopy closure.

Whorled Sunflower

The features essential to the conservation of whorled sunflower may require special management considerations or protection to reduce the following threats: (1) Soil disturbance due to silvicultural site preparation, timber harvest, or cultivation of row crops; (2) indiscriminate herbicide use or mowing; (3) conversion of remnant prairie habitat to agricultural or industrial forestry uses; and (4) excessive shading or competition from native woody species or invasive, nonnative plants.

Management activities that could ameliorate these threats include, but are not limited to: (1) Avoiding areas located in close proximity to whorled sunflower sites when planning for establishing new sites for agriculture or pulpwood and timber production; (2) ensuring that herbicide use or mowing does not occur in whorled sunflower sites during the species' growing season; (3) locating suitable habitat, determining presence or absence of whorled sunflower, and protecting or restoring as many sites or complexes of sites as possible; (4) managing, including prescribed burning, mowing, and bush-hogging, to reduce canopy cover, minimize competition from native and invasive, nonnative plants, and maintain characteristic moist prairie vegetation; (5) reaching out to all landowners, including private, State, and Federal landowners, to raise awareness of the plant and its habitat; and (6) providing technical or financial assistance to landowners to help in the design and implementation of management actions that protect the plant and its habitat.

Fleshy-Fruit Gladecress

The features essential to the conservation of fleshy-fruit gladecress may require special management considerations or protection to reduce the following threats: (1) Actions that remove the soils and alter the surface geology of the glades; (2) building or paving over the glades; (3) construction or excavation up slope that alters water movement (sheet flow or seepage) down slope to gladecress sites; (4) planting trees adjacent to the edges of an outcrop resulting in shading of the glade and accumulations of leaf litter and tree debris; (5) encroachment by nonnative and native invading trees, shrubs, and vines that shade the glade; (6) the use and timing of application of certain herbicides that can harm gladecress seedlings; and (7) access by cattle to gladecress sites where habitat and plants may be trampled.

Management activities that could ameliorate these threats include (but are not limited to): (1) Avoiding limestone glades when planning development, conversion to agriculture, and other disturbances to glade complexes; (2) avoiding above-ground construction and/or excavations in locations that would interfere with natural water movement to gladecress habitat sites; (3) locating suitable habitat and determining the presence or absence of the species and identifying areas with glade complexes and protecting or restoring as many complexes as possible; (4) reaching out to all landowners, including private and State landowners, to raise awareness of the plant and its specialized habitat; (5) providing technical or financial

assistance to landowners to help in the design and implementation of management actions that protect the plant and its habitat; (6) avoiding pine tree plantings near glades; and (7) managing, including brush removal, to maintain an intact native glade vegetation community.

More information on the special management considerations for each critical habitat unit is provided in the individual unit descriptions below.

Criteria Used To Identify Critical Habitat

As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat. In accordance with the Act and our implementing regulations at 50 CFR 424.12(b), we review available information pertaining to the habitat requirements of the species and identify occupied areas at the time of listing that contain the features essential to the conservation of the species. If, after identifying currently occupied areas, we determine that those areas are inadequate to ensure conservation of the species, in accordance with the Act and our implementing regulations at 50 CFR 424.12(e) we then consider whether designating additional areas—outside those currently occupied—are essential for the conservation of the species. As discussed in more detail below, we are not designating any areas outside the geographical area occupied by the species because occupied areas are sufficient for the conservation of the species, and we have no evidence that these species existed beyond their current geographical ranges in habitat types that are not represented by the critical habitat units we designated. Below we go into more detail about the criteria used to identify critical habitat for Short's bladderpod, whorled sunflower, and fleshy-fruit gladecress.

Areas Occupied by Short's Bladderpod

For the purpose of proposing critical habitat for Short's bladderpod, we define the geographical area currently occupied by the species as required by section 3(5)(A)(i) of the Act. We considered those sites to be occupied where (1) Element Occurrence Records from State conservation agencies (Indiana Natural Heritage Data Center (INHDC) 2012; Kentucky Natural Heritage Program (KNHP) 2012; Tennessee Natural Heritage Inventory Database (TNHID) 2012) indicate that the species was extant at the time of the proposed listing rule (i.e., is considered currently extant), and (2) we determine that forest communities are present and no evidence of substantial ground disturbance is visible from inspection of aerial photography, available through Google Earth.

Areas Not Occupied by Short's Bladderpod

We considered whether there were any specific areas outside the geographical area found to be occupied by Short's bladderpod that are essential for the conservation of the species as required by section 3(5)(A)(i) of the Act. First, we considered whether there was sufficient area for the conservation of the species within the occupied areas determined above. In doing so, we evaluated whether protection or management of currently occupied sites and nearby suitable habitats would provide adequate representation, redundancy, and resiliency for Short's bladderpod conservation. The 26 extant occurrences of Short's bladderpod included in critical habitat units below are distributed among habitats that are representative of those in which the species' occurred in its historical geographic range and, if conserved, should provide adequate redundancy for the species to endure localized, stochastic disturbances. While populations are small at some of these occurrences, there is sufficient habitat available to support population growth; however, some management might be necessary to improve habitat conditions and population growth rates. Conserving or restoring habitat and viable populations at all occupied sites should provide conditions necessary for successful reproduction and population growth and resiliency for the species to recover from acute demographic effects of localized disturbances. Therefore, no areas outside of the currently occupied geographical areas would be essential for the conservation of the species, and we have not designated any additional areas.

Mapping Short's Bladderpod Critical Habitat

Once we determined the occupied areas, we next delineated critical habitat unit boundaries based on the presence of primary constituent elements. We used data for geology (Kentucky Geological Survey, available online at *http://www.arcgis.com/home/item.html?id=d32dc6edbf9245cdbac3fd7e255d3974*; Moore I. 1967; Wilson 1972, 1975, 1979; Wilson I. 1972, 1980; Marsh I. 1973; Finlayson I. 1980; Kerrigan and Wilson 2002), soils (USDA, Soil Survey Geographic Database, available online at *http://soildatamart.nrcs.usda.gov*), topographic contours, and locations of sites occupied by Short's bladderpod (INHDC 2012; KNHP 2012; TNHID 2012) as a basis for delineating units in ArcGIS. Additionally, we used aerial photography available through Google Earth to determine vegetation cover and for three-dimensional viewing of topographic features. We delineated units around occupied sites, with boundaries determined by the combined spatial arrangement of limestone bedrock, sometimes with interbedded shale or siltstone; shallow or rocky, well-drained soils; steeply sloped topography; and forest vegetation. In order to reduce threats from adjacent land uses, we extended unit boundaries from ridge tops or bluff lines above Short's bladderpod occurrences downslope to either obvious breaks in slope gradient or to the edge of water bodies that form a unit boundary. These units typically include individual occupied sites; however, where appropriate we delineated units so that they encompass more than one occupied site and span intervening areas in which the primary constituent elements are present. We delineated units spanning multiple occupied sites in order to minimize fragmentation and provide areas for pollinator nesting and dispersal to promote gene flow among extant occurrences.

Areas Occupied by Whorled Sunflower

For the purpose of designating critical habitat for whorled sunflower, we defined the geographical area currently occupied by the species as required by section 3(5)(A)(i) of the Act. We define occupied areas in Georgia and Alabama as those areas where the species was present during site visits by the Service during 2012. The most recent survey data available from TNHID (2012) confirmed the presence of whorled sunflower during 2005 and 2009, at the Madison and McNairy County, Tennessee, populations, respectively. Based on inspection of aerial photography for these locations, available through Google Earth, habitat still is present at these sites and no evidence of substantial ground disturbance was apparent; thus, we consider these sites to still be occupied by whorled sunflower.

Areas Not Occupied by Whorled Sunflower

We considered whether there were any specific areas outside the geographical area found to be occupied by whorled sunflower that are essential for the conservation of the species as required by section 3(5)(A)(i) of the Act. First, we considered whether there was sufficient area for the conservation of the species within the occupied areas

determined above. In doing so, we evaluated whether protection or management of currently occupied sites and nearby suitable habitats would provide adequate representation, redundancy, and resiliency for whorled sunflower's conservation. The four extant populations of whorled sunflower are distributed among habitats that we believe are representative of those in which the species occurred in its historical geographic range and, if conserved, should provide adequate redundancy for the species to endure localized, stochastic disturbances. While populations are small at most of these occurrences, there is sufficient habitat available to support population growth; however, management will be necessary to improve habitat conditions and population growth rates. Conserving or restoring habitat and viable populations at all occupied sites should provide conditions necessary for successful reproduction and population growth and resiliency for the species to recover from acute demographic effects of localized disturbances. Therefore, no areas outside of the currently occupied geographical areas would be essential for the conservation of the species, and we have not designated any additional areas.

Mapping Whorled Sunflower Critical Habitat

Once we determined the occupied areas, we next delineated critical habitat unit boundaries based on the presence of primary constituent elements. We used data for soils (USDA, Soil Survey Geographic Database, available online at *http://soildatamart.nrcs.usda.gov*) and locations of sites occupied by whorled sunflower as a basis for delineating units in ArcGIS. Additionally, we used aerial photography available through Google Earth to determine vegetation cover and for three-dimensional viewing of topographic features. We delineated units around occupied sites, with boundaries determined by the spatial arrangement of suitable soils (described above in PCE 1 for whorled sunflower) and to provide opportunities for minimizing fragmentation among subpopulations by restoring characteristic prairie vegetation in areas currently used for agricultural or industrial forestry purposes.

Areas Occupied by Fleshy-Fruit Gladecress

For the purpose of designating critical habitat for fleshy-fruit gladecress, we defined the geographical area currently occupied by the species as required by section 3(5)(A)(i) of the Act. We define occupied areas as those where recent surveys in 2011 confirmed the species was present (Shotz 2012, pers. comm.) and one additional site where TVA provided data confirming the species was present.

Areas Not Occupied by Fleshy-Fruit Gladecress

We considered whether there were any specific areas outside the geographical area found to be occupied by the fleshy-fruit gladecress that are essential for the conservation of the species as required by section 3(5)(A)(ii) of the Act. First, we evaluated whether there was sufficient area for the conservation of the species within the occupied areas determined as described above. To guide what would be considered needed for the species' conservation, we evaluated the seven sites where the species is known to occur. Currently occupied sites are distributed across the historical range of the species and are representative of the landscape settings and soil types that have been documented at gladecress occurrences. Six of the seven units within occupied areas contain suitable habitat (with special management) for natural expansion of existing populations or possible future augmentation if determined necessary during future recovery planning and implementation. Therefore, no areas outside of the currently occupied geographical areas would be essential for the conservation of the species, and we have not designated any additional areas.

Mapping Fleshy-Fruit Gladecress Critical Habitat

Once we determined the occupied areas, we next delineated the critical habitat unit boundaries based on the presence of primary constituent elements. We used various GIS layers, soil surveys, aerial photography, and known locations of the extant and historical populations. We used ArcGIS to delineate units around occupied sites, encompassing adjacent areas where the primary constituent elements were present to provide suitable habitat for natural expansion of the populations. The seven units in the proposed designation include the species' entire historical range. All of the units contain the primary constituent elements essential for the conservation of fleshy-fruit gladecress.

When determining critical habitat boundaries within this final rule, we made every effort to avoid including developed areas such as lands covered by buildings, pavement, and other structures because such lands lack physical or biological features for Short's bladderpod, whorled sunflower, and fleshy-fruit gladecress. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this final rule have been excluded by text in the rule and are not designated as critical habitat. Therefore, a Federal action involving these lands will not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the physical or biological features in the adjacent critical habitat.

The critical habitat designation is defined by the map or maps, as modified by any accompanying regulatory text, presented at the end of this document in the rule portion. We include more detailed information on the boundaries of the critical habitat designation in the preamble of this document. We will make the coordinates or plot points or both on which each map is based available to the public on *http://www.regulations.gov* at Docket No. FWS–R4–ES–2013–0086, on our Internet sites *http://www.fws.gov/cookeville*, *http://www.fws.gov/midwest/bloomington*, *http://www.fws.gov/daphne*, *http://www.fws.gov/frankfort*, *http://www.fws.gov/athens*, and at the field office responsible for the designation (see **FOR FURTHER INFORMATION CONTACT**).

Final Critical Habitat Designation

Short's Bladderpod

We are designating 20 units as critical habitat for Short's bladderpod. The critical habitat areas we describe below constitute our current best assessment of areas that meet the definition of critical habitat for Short's bladderpod. All these units are occupied at the time of listing. The areas we propose as critical habitat are: (1) Kings and Queens Bluff, (2) Lock B Road, (3) Jarrel Ridge Road, (4) Cheatham Lake, (5) Harpeth River, (6) Montgomery Bell Bridge, (7) Nashville and Western Railroad, (8) River Trace, (9) Old Hickory Lake, (10) Coleman-Winston Bridge, (11) Cordell Hull Reservoir, (12) Funns Branch, (13) Wartrace Creek, (14) Camp Pleasant Branch, (15) Kentucky River, (16) Owenton Road, (17) Little Benson Creek, (18) Boone Creek, (19) Delaney Ferry Road, and (20) Bonebank Road. The approximate area of each critical habitat unit, broken down by land ownership, is shown in Table 2.

TABLE 2—DESIGNATED CRITICAL HABITAT UNITS FOR SHORT'S BLADDERPOD IN HECTARES (HA) AND ACRES (AC)

Critical habitat unit	Private ha (ac)	State/local ha (ac)	Federal ha (ac)	Size of unit ha (ac)
1. Kings and Queens Bluff	7.6 (18.9)	.....	*3.0 (7.3)	7.6 (18.9)
2. Lock B Road	10.1 (25.0)	.....	*0.3 (0.8)	10.1 (25.0)
3. Jarrel Ridge Road	5.2 (12.8)	.....	*0.4 (1.1)	5.2 (12.8)
4. Cheatham Lake	19.1 (47.2)	3.4 (8.3)	4.9 (12.0)	27.3 (67.5)
5. Harpeth River	8.2 (20.3)	.....	17.3 (42.8)	25.5 (63.1)
6. Montgomery Bell Bridge	2.1 (5.3)	.....	9.0 (22.3)	11.2 (27.7)
7. Nashville and Western Railroad	20.8 (51.4)	8.1 (20.0)	1.5 (3.8)	30.5 (75.3)
8. River Trace	42.8 (105.7)	.....	*5.6 (13.8)	42.8 (105.7)
9. Old Hickory Lake	1.9 (4.8)	.....	2.9 (7.1)	4.8 (11.9)
10. Coleman-Winston Bridge	4.1 (10.1)	.....	3.3 (8.1)	7.4 (18.2)
11. Cordell Hull Reservoir	.....	.....	12.3 (34.2)	12.3 (34.2)
12. Funns Branch	.....	.....	20.8 (51.3)	20.8 (51.3)
13. Wartrace Creek	.....	.....	37.5 (92.6)	37.5 (92.6)
14. Camp Pleasant Branch	17.4 (42.9)	.....	.....	17.4 (42.9)
15. Kentucky River	83.7 (206.7)	9.4 (23.3)	.....	93.1 (230.0)
16. Owenton Road	1.3 (3.3)	1.5 (3.7)	.....	2.8 (7.0)
17. Little Benson Creek	9.4 (23.3)	.....	.....	9.4 (23.3)
18. Boone Creek	5.0 (12.4)	.....	.....	5.0 (12.4)
19. Delaney Ferry Road	0.6 (1.4)	.....	.....	0.6 (1.4)
20. Bonebank Road	.....	1.7 (4.3)	.....	1.7 (4.3)
Total	239.3 (591.5)	24.1 (59.6)	118.8 (297.2)	373.0 (925.5)

Note: Area sizes may not sum due to rounding.
*Indicates U.S. Army Corps of Engineers easements, which are not added to size of unit because these lands are included in ha (ac) figure given for the private lands on which easements are held.

We present brief descriptions of all units, and reasons why they meet the definition of critical habitat for Short's bladderpod, below. All of the proposed critical habitat units, except as specified below, contain all of the PCEs essential to the conservation of the species.

Unit 1: Kings and Queens Bluff

Unit 1 consists of 7.6 ha (18.9 ac) of private land, but the U.S. Army Corps of Engineers (Corps of Engineers) holds flood easements on approximately 40 percent of this land. This unit is located in Montgomery County, Tennessee, on a bluff on the right descending bank of the Cumberland River within the city limits of Clarksville, approximately 0.16 km (0.10 mi) south of the intersection of State Route 12 (Ashland City Road) and Queens Bluff Way. Beginning approximately 0.28 km (0.18 mi) south of the easternmost intersection of Ashland City Road (U.S.–41a Bypass) and Queens Bluff Road, this unit parallels the Cumberland River in a downstream direction for approximately 1.7 km (1.1 mi).

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats related to erosion or prolonged inundation due to water level manipulation; changes in land use, including residential or commercial construction, which could cause removal of forest vegetation or soils or soil loss due to erosion; and shading and competition due to encroachment of native and invasive, nonnative plants.

Unit 2: Lock B Road

Unit 2 consists of 10.1 ha (25.0 ac) of privately owned land, but the Corps of Engineers holds flood easements on approximately 3 percent of this land. This unit is located in Montgomery County, Tennessee, approximately 6.9 km (4.3 mi) south of the city limits of Clarksville, on a hillside that lies to the east and west of Lock B Road North, beginning approximately 0.8 km (0.5 mi) south of its junction with Gholson Road and continuing south for approximately 0.4 km (0.25 mi), at which point Lock B Road North veers to the southwest. From this point, this unit continues south for approximately 1.0 km (0.6 mi) along the hillside that is east of Lock B Road North. The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats related to potential right-of-way construction or maintenance using herbicides or mechanized equipment along Lock B Road North or the Illinois Central Railroad, both of which traverse portions of the unit, and shading or competition due to encroachment of native and invasive, nonnative plants.

Unit 3: Jarrel Ridge Road

Unit 3 consists of 5.2 ha (12.8 ac) of privately owned lands, but the Corps of Engineers holds flood easements on approximately 8 percent of this land. This unit is located in Montgomery County, Tennessee, approximately 10 km south of the city limit of Clarksville, on a hillside that lies west and north of the southern terminus of Jarrel Ridge Road.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats related to erosion or prolonged inundation due to water level manipulation; changes in land use, including residential or commercial construction, which could cause removal of forest vegetation or soils or soil loss due to erosion; potential right-of-way construction or maintenance using herbicides or mechanized equipment along Jarrel Ridge Road at the unit boundary or the Illinois Central Railroad, which traverses the unit; and shading or competition due to encroachment of native and invasive, nonnative plants.

Unit 4: Cheatham Lake

Unit 4 consists of 27.3 ha (67.5 ac) of privately owned, local government, and Federal lands. This unit is located in Cheatham County, Tennessee, approximately 9.0 km (5.6 mi) west-northwest of the city limits of the town of Ashland City, on a series of hillsides that begins approximately 0.8 km (0.5 mi) northeast of the junction of Beech Grove Road and Cheatham Dam Road and arcs in a southeasterly direction for

approximately 2.2 km (1.4 mi). Here, the unit crosses Cheatham Dam Road, and continues for approximately 2.2 km in a southeasterly arc to its eastern boundary on the right descending bank of the Cumberland River, approximately 0.18 km (0.11 mi) south of Kimbrough Road. The land within this unit is approximately 70 percent privately owned, 12 percent owned by Ashland City, and 18 percent owned by the Corps of Engineers.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats related to erosion or prolonged inundation due to water level manipulation; changes in land use, including residential or commercial construction, which could cause removal of forest vegetation or soils or soil loss due to erosion; potential right-of-way construction or maintenance using herbicides or mechanized equipment along the Illinois Central Railroad, which traverses the unit; and shading or competition due to encroachment of native and invasive, nonnative plants.

Unit 5: Harpeth River

Unit 5 consists of 25.5 ha (63.1 ac) of privately owned and federal land in Cheatham County, Tennessee. This unit is located approximately 5 km (3.1 mi) west of the city limits of the town of Ashland City, on the west slope of a hillside and associated bluffs that begin on the point of land formed by the confluence of Cumberland and Harpeth rivers and extend upstream along the right descending bank of the Harpeth River, reaching the unit's southernmost boundary approximately 0.6 km (0.4 mi) east of SR–49, where it crosses the Harpeth River. The land within this unit is approximately 32 percent privately owned, and 68 percent is owned by the Corps of Engineers.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats related to erosion or prolonged inundation due to water level manipulation; changes in land use, including residential or commercial construction, which could cause removal of forest vegetation or soils or soil loss due to erosion; and shading or competition due to encroachment of native and invasive, nonnative plants.

Unit 6: Montgomery Bell Bridge

Unit 6 consists of 11.2 ha (27.7 ac) of privately owned and federal land in Cheatham and Dickson Counties, Tennessee. This unit is located approximately 5.5 km (3.4 mi) west of the city limits of the town of Ashland City, on a hillside and bluffs on the left descending bank of the Harpeth River that begin approximately 0.4 km (0.27 mi) east of the Montgomery Bell Bridge, where SR–49 crosses the river and bisects the unit, and parallels the river in an upstream direction for approximately 1.8 km (1.1 mi). The land within this unit is approximately 19 percent privately owned, and 81 percent is owned by the Corps of Engineers.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats related to erosion or prolonged inundation due to water level manipulation; changes in land use, including residential or commercial construction, which could cause removal of forest vegetation or soils or soil loss due to erosion; and shading or competition due to encroachment of native and invasive, nonnative plants.

Unit 7: Nashville and Western Railroad

Unit 7 consists of 30.5 ha (75.3 ac) of privately owned, local government, and Federal land in Cheatham County, Tennessee. This unit is located along the southwest city limit of the town of Ashland City, on hillsides and bluffs that begin approximately 0.26 km (0.16 mi) east of the confluence of Marrowbone Creek and the Cumberland River and extend upstream on the right descending bank of the Cumberland River for approximately 2.3 km (1.4 mi). Here, the unit continues in a southeasterly direction for approximately 0.9 km (0.5 mi) from the point where the river veers away from the hillside and bluffs. The land within this unit is approximately 68 percent privately owned, 27 percent owned by the Cheatham County Rail Association, and 5 percent owned by the Corps of Engineers.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats related to erosion or prolonged inundation due to water level manipulation; changes in land use, including residential or commercial construction, which could cause removal of forest vegetation or soils or soil loss due to erosion; potential right-of-way construction or maintenance using herbicides or mechanized equipment along the Nashville and Western Railroad, which traverses the unit; and shading or competition due to encroachment of native and invasive, nonnative plants.

Unit 8: River Trace

Unit 8 consists of 42.8 ha (105.7 ac) of privately owned land, with the exception of the River Trace road right-of-way. The Corps of Engineers holds flood easements on approximately 13 percent of the lands within the unit. This unit is located in Davidson and Cheatham Counties, Tennessee, on hillsides and bluffs approximately 0.9 km (0.6 mi) southeast of the city limit of the town of Ashland City, beginning at the western extent of River Trace and extending along both sides of this road in a southeasterly direction for a distance of approximately 2.3 km (1.4 mi). Here, the unit leaves River Trace and continues along the hillside and bluffs on the right descending bank of the Cumberland River in an upstream direction for approximately 2.1 km (1.3 mi).

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats related to erosion or prolonged inundation due to water level manipulation; changes in land use, including residential or commercial construction, which could cause removal of forest vegetation or soils or soil loss due to erosion; potential right-of-way construction or maintenance using herbicides or mechanized equipment along River Trace or the Nashville and Western Railroad, both of which traverse the unit; and shading or competition due to encroachment of native and invasive, nonnative plants.

Unit 9: Old Hickory Lake

Unit 9 consists of 4.8 ha (11.9 ac) of privately owned and Federal lands in Trousdale County, Tennessee. This unit is located approximately 3.5 km (2.2 mi) west of the southern city limits of the town of Hartsville and 0.5 km (0.3 mi) south of Oldham Road, on a hillside and bluffs on the right descending bank of the Cumberland River. Beginning approximately 0.4 km (0.25 mi) downstream of the mouth of Second Creek, this unit parallels the Cumberland River in a downstream direction for approximately 0.7 km (0.4 mi). The land within this unit is approximately 40 percent privately owned, and 60 percent is owned by the Corps of Engineers.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats related to erosion or prolonged inundation due to water level manipulation; changes in land use, including residential or commercial

construction, which could cause removal of forest vegetation or soils or soil loss due to erosion; and shading or competition due to encroachment of native and invasive, nonnative plants.

Unit 10: Coleman-Winston Bridge

Unit 10 consists of 7.4 ha (18.2 ac) of privately owned and Federal lands in Trousdale County, Tennessee. The unit is located at the southern city limit of the town of Hartsville, on a hillside and bluffs overlooking the Cumberland River. Beginning on the right descending bank approximately 0.5 km (0.3 mi) east of SR–141, which bisects the unit where it crosses the Cumberland River at the Coleman-Winston Bridge, this unit parallels the river in a downstream direction for approximately 1.1 km (0.7 mi). The land within this unit is approximately 55 percent privately owned, and 45 percent is owned by the Corps of Engineers.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats related to erosion or prolonged inundation due to water level manipulation; changes in land use, including residential or commercial construction, which could cause removal of forest vegetation or soils or soil loss due to erosion; potential right-of-way construction or maintenance using herbicides or mechanized equipment along SR–141, which bisects the unit; and shading or competition due to encroachment of native and invasive, nonnative plants.

Unit 11: Cordell Hull Reservoir

Unit 11 consists of 12.3 ha (34.2 ac) of Federal lands in Smith County, Tennessee. This unit is located approximately 4.3 km (2.7 mi) north of the city limits of the town of Carthage, on hillsides and bluffs on the right descending bank of the Cumberland River. Beginning approximately 2.0 km (1.25 mi) upstream of the Cordell Hull Dam, this unit parallels the river in an upstream direction for approximately 0.6 km (0.4 mi), where it crosses a 0.3-km (0.2-mi) expanse of open water, and then continues paralleling the river for a distance of 1.2 km (0.7 mi). All of the land within this unit is owned by the Corps of Engineers, and the open water is not included in the area of the unit reported above.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats related to erosion or prolonged inundation due to water level manipulation; changes in land use, including residential or commercial construction, which could cause removal of forest vegetation or soils or soil loss due to erosion; and shading or competition due to encroachment of native and invasive, nonnative plants.

Unit 12: Funns Branch

Unit 12 consists of 20.8 ha (51.3 ac) of Federal lands in Jackson County, Tennessee. This unit is located approximately 12.1 km (7.5 mi) southwest of the city limits of the town of Gainesboro, on hillsides and bluffs on the right descending bank of the Cumberland River. Beginning approximately 0.4 km (0.2) mi upstream of the mouth of Funns Branch, this unit parallels the river in an upstream direction for approximately 1.0 km (0.65 mi) where it crosses a 0.3-km (0.2-mi) expanse of open water, and then continues paralleling the river for a distance of approximately 1.0 km (0.64 mi). All of the land within this unit is owned by the Corps of Engineers, and the open water is not included in the area of the unit reported above.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats related to erosion or prolonged inundation due to water level manipulation; changes in land use, including residential or commercial construction, which could cause removal of forest vegetation or soils or soil loss due to erosion; and shading or competition due to encroachment of native and invasive, nonnative plants.

Unit 13: Wartrace Creek

Unit 13 consists of 37.5 ha (92.6 ac) of Federal lands in Jackson County, Tennessee. This unit is located approximately 7.7 km (4.8 mi) west of the city limits of the town of Gainesboro, on hillsides and bluffs on the right descending bank of the Cumberland River. Beginning at the mouth of Indian Creek, this unit parallels the river in a downstream direction for approximately 1.6 km (1.0 mi), where it crosses the mouth of Wartrace Creek, and then continues paralleling the river for a distance of 2.5 km (1.5 mi). All of the land within this unit is owned by the Corps of Engineers, and areas of open water are not included in the area of the unit reported above.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats related to erosion or prolonged inundation due to water level manipulation; changes in land use, including residential or commercial construction, which could cause removal of forest vegetation or soils or soil loss due to erosion; and shading or competition due to encroachment of native and invasive, nonnative plants.

Unit 14: Camp Pleasant Branch

Unit 14 consists of 17.4 ha (42.9 ac) of privately owned lands in Franklin County, Kentucky. This unit is located approximately 8.3 km (5.8 mi) north of the city limits of Frankfort, on hillsides near Camp Pleasant Branch, a tributary to Elkhorn Creek. Beginning approximately 0.29 km (0.18 mi) west of the intersection of Indian Gap Road and Camp Pleasant Road, the unit begins in a hollow north of Indian Gap Road and extends to the east and north along hillsides above the right descending bank of Camp Pleasant Branch for approximately 0.75 km (0.5 mi) to the intersection of Camp Pleasant Road and Gregory Woods Road. Here the unit crosses Gregory Woods Road and extends north for a distance of approximately 0.58 km (0.36 mi), encompassing the hillside to the east of the road.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats related to changes in land use, including residential or commercial construction, which could cause removal of forest vegetation or soils or soil loss due to erosion; potential right-of-way construction or maintenance using herbicides or mechanized equipment along Indian Gap Road, Camp Pleasant Road, or Gregory Woods Road, which are adjacent to the unit; and shading or competition due to encroachment of native and invasive, nonnative plants.

Unit 15: Kentucky River

This unit consists of 93.1 ha (230.0 ac) of privately owned and State land in Franklin County, Kentucky. This unit begins within the northwestern city limit of Frankfort, on a hillside that parallels U.S.–421 on its east side from approximately 0.21 km (0.13 mi) southeast of its junction with Clifty Drive to approximately 0.23 km (0.15 mi) northwest of its junction with U.S.–127. Here the unit follows the topography of the hillside as it turns away from the road to the east, leaving the city limits, and then arcs to the northeast, before abruptly turning back in a westerly direction. From this point, the hillside and this unit extend in a westerly direction for approximately 0.7 km (0.4 mi) and then parallel the Kentucky River in a downstream

direction in an arc approximately 5.3 km (3.3 mi) in length on its left descending bank, encompassing hillsides in two hollows that extend from the river to the west. Approximately 90 percent of the land in this unit is privately owned, and the Commonwealth of Kentucky owns approximately 10 percent, which is part of a State nature preserve.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats related to erosion or prolonged inundation due to water level manipulation; changes in land use, including residential or commercial construction, which could cause removal of forest vegetation or soils or soil loss due to erosion; potential right-of-way construction or maintenance using herbicides or mechanized equipment along U.S.–421, where it parallels the unit; and shading or competition due to encroachment of native and invasive, nonnative plants.

Unit 16: Owenton Road

Unit 16 consists of 2.8 ha (7.0 acres) of privately owned and City of Frankfort municipal park lands in Franklin County, Kentucky. The unit is located approximately 0.1 km (0.08 mi) north of the city limits of Frankfort on a hill that is adjacent to and west of U.S.–127 (Owenton Road), approximately 0.6 km (0.4 mi) north of the intersection of U.S.–127 and U.S.–421. The land within this unit is approximately 46 percent privately owned, and 54 percent is owned by the City of Frankfort.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats related to changes in land use, including residential or commercial construction, which could cause removal of forest vegetation or soils or soil loss due to erosion; potential right-of-way construction or maintenance using herbicides or mechanized equipment on U.S.–127; and shading or competition due to encroachment of native and invasive, nonnative plants.

Unit 17: Little Benson Creek

Unit 17 consists of 9.4 ha (23.3 ac) of privately owned lands in Franklin County, Kentucky, located within the city limits of Frankfort. Beginning approximately 1.1 km (0.7 mi) south of the intersection of Mills Lane and Ninevah Road, this unit lies on a hillside on the east side of Ninevah Road and extends to the south for approximately 0.5 km (0.3 mi), where it crosses Ninevah Road and follows a hillside that parallels Ninevah Road for approximately 1.0 km (0.65 mi) on its west side.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats related to changes in land use, including residential or commercial construction, which could cause removal of forest vegetation or soils or soil loss due to erosion; potential right-of-way construction or maintenance using herbicides or mechanized equipment on Ninevah Road; and shading or competition due to encroachment of native and invasive, nonnative plants.

Unit 18: Boone Creek

Unit 18 consists of 5.0 ha (12.4 ac) of privately owned lands in Clark County, Kentucky. This unit is located approximately 13.2 km (8.2 mi) southwest of the city limits of Winchester, and begins adjacent to Grimes Mill Road approximately 0.17 km north of the Fayette and Clark County line. From here, the unit extends on a hillside to the east for a distance of approximately 0.21 km (0.13 mi), where the unit and hillside then parallel a bend in Boone Creek on its left descending bank for a distance of approximately 0.68 km (0.42 mi).

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats related to changes in land use, including residential or commercial construction, which could cause removal of forest vegetation or soils or soil loss due to erosion; potential right-of-way construction or maintenance using herbicides or mechanized equipment on Grimes Road; and shading or competition due to encroachment of native and invasive, nonnative plants.

Unit 19: Delaney Ferry Road

Unit 19 consists of 0.6 ha (1.4 ac) of privately owned lands in Woodford County, Kentucky. This unit is located approximately 7.8 km (4.8 mi) south of the city of Versailles. Beginning approximately 2.1 km (1.3 mi) east of the intersection of Troy Pike and Delaney Ferry Road, this unit extends approximately 0.08 km (0.05 mi) northeast along Delaney Ferry Road, where the unit boundary turns to the northwest for approximately 0.08 km (0.05 mi). From this northeast corner of the unit, the boundary extends to the southwest approximately 0.05 km (0.03 mi), where it turns to the southeast, paralleling a driveway for 0.05 km (0.03 mi) before turning to the southwest for approximately 0.03 km (0.02 mi). From this point the unit boundary turns to the southeast for approximately 0.05 km (0.03 mi), returning to the starting point.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats of shading or competition due to encroachment of native and invasive, nonnative plants. The current landowner manages encroaching vegetation to prevent shading and competition where Short's bladderpod occurs within the unit.

Unit 20: Bonebank Road

Unit 20 consists of 1.7 ha (4.3 ac) of lands in Posey County, Indiana, which are owned by the Indiana Department of Natural Resources. This unit is located approximately 13 km (8.1 mi) southwest of the city limits of Mt. Vernon, beginning at the intersection of Graddy Road and Bonebank Road and paralleling Bonebank Road on its west side for a distance 0.73 km (0.45 mi) north of the intersection. The surface geology at this site—Quaternary glacial outwash—and soils are markedly different from other sites on calcareous geology throughout the rest of the species' range. However, this site supports an occurrence that has numbered in the hundreds to more than a thousand individuals in the past, and the PCE of forest vegetation with canopy openings (PCE 3) is present at the road edge.

The feature essential to the conservation of the species in this unit may require special management considerations or protection to address threats of shading or competition due to encroachment of native and invasive, nonnative plants.

Whorled Sunflower

We are designating four units as critical habitat for whorled sunflower. The critical habitat areas we describe below constitute our current best assessment of areas that meet the definition of critical habitat for whorled sunflower. All these units are occupied at the time of listing. The four areas we propose as critical habitat are: (1) Mud Creek, (2) Coosa Valley Prairie, (2) Prairie Branch, and (4) Pinson. The approximate area of each proposed critical habitat unit is shown in Table 3. All of the critical habitat units for this species are located entirely on privately owned land.

TABLE 3—DESIGNATED CRITICAL HABITAT UNITS FOR WHORLED SUNFLOWER

Critical habitat unit	County, state	Hectares	Acres
1. Mud Creek	Cherokee, Alabama	210.6	520.4
2. Coosa Valley Prairie	Floyd, Georgia	366.9	906.5
3. Prairie Branch	McNairy, Tennessee	6.0	14.9
4. Pinson	Madison, Tennessee	40.7	100.5
Total		624.2	1,542.3

We present brief descriptions of all units, and reasons why they meet the definition of critical habitat for whorled sunflower, below.

Unit 1: Mud Creek

Unit 1 consists of 210.6 ha (520.4 ac) of privately owned lands in Cherokee County, Alabama, located approximately 11.6 km (7.2 mi) southeast of the city limits of Cedar Bluff. The unit begins approximately 0.06 km (0.04 mi) north of the junction of CR–164 and CR–29 and extends in a northerly direction to encompass much of the drainage area of an unnamed tributary to Mud Creek and to the northeast to encompass much of the drainage area of a second unnamed tributary to Mud Creek. The easternmost boundary of this unit is adjacent to CR–101, from approximately 1.0 km (0.6 mi) to 1.4 km (0.9 mi) north of its junction with CR–164. Silt loam and silty clay loam soils are present throughout the unit, spanning broad uplands, and terraces and flood plains of headwater streams in the Coosa River watershed (PCE 1).

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats of soil disturbance due to silvicultural site preparation or timber harvest; indiscriminate herbicide use or mowing for silvicultural purposes or road right-of-way maintenance; conversion of remnant prairie habitat to agricultural or industrial forestry uses; and excessive shading or competition from native woody species or invasive, nonnative plants.

Unit 2: Coosa Valley Prairie

Unit 2 consists of 366.9 ha (906.5 ac) of privately owned lands in Floyd County, Georgia, located approximately 4.5 km (2.8 mi) northwest of the city limits of Cave Spring. This unit corresponds to the boundary of The Nature Conservancy's conservation easement on lands formerly owned by The Campbell Group and now owned by Plum Creek, a site commonly referred to as the Coosa Valley Prairie. The northern boundary of this unit follows Jefferson Road for approximately 1.4 km (0.9 mi) in a southeasterly direction, beginning approximately 1.7 km (1.0 mi) east of the Alabama-Georgia State line. From the eastern extent on Jefferson Road, the unit boundary follows an unnamed dirt road south for a distance of approximately 1.5 km (0.9 mi), where the boundary turns to the west and south before turning back to the north and again to the west, reaching the Alabama–Georgia State line. Here, the unit follows the State line in a northwest direction for approximately 0.8 km (0.5 mi) before turning east and following an unnamed dirt road in a northeasterly direction for approximately 2.7 km (1.7 mi) and reuniting with the northern boundary on Jefferson Road. Silt loam and silty clay loam soils are present throughout the unit, spanning broad uplands, depressions, and terraces and flood plains of headwater streams in the Coosa River watershed (PCE 1). Prairie openings and woodlands with low levels of canopy cover (PCE 2) are present throughout much of the unit. While Ellis and McCauley (2009, pp. 1837–1838) found very few viable achenes and low germination rates at this site, whorled sunflower has responded favorably to habitat management efforts by increasing in numbers, and there likely are now a sufficient number of compatible mates for production of viable achenes (PCE 3) at this site.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats of soil disturbance due to silvicultural site preparation or timber harvest; indiscriminate herbicide use or mowing for silvicultural purposes or road right-of-way maintenance; conversion of remnant prairie habitat to agricultural or industrial forestry uses, and excessive shading or competition from native woody species or invasive, nonnative plants.

Unit 3: Prairie Branch

Unit 3 consists of 6.0 ha (14.9 ac) of privately owned land in McNairy County, Tennessee, and is located approximately 0.6 km (0.5 mi) south of the easternmost city limit of Ramer. This unit is located along Prairie Branch, a tributary to Muddy Creek, beginning approximately 0.42 km (0.26 mi) upstream of the point where it passes under Mt. Vernon Road and extending downstream for approximately 2.0 km (1.2 mi). Within this reach, the critical habitat unit forms a buffer extending 15 m (50 ft) upslope from the tops of the banks on both sides of Prairie Branch. Sandy loam soils (PCE 1) are present throughout the unit, as are small patches of vegetation containing whorled sunflower and other wet prairie species (PCE 2).

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats of soil disturbance due to agricultural practices; indiscriminate herbicide use or mowing for road or railroad right-of-way maintenance; conversion of remnant prairie habitat to agricultural uses; and competition from invasive, nonnative plants.

Unit 4: Pinson

Unit 4 consists of 40.7 ha (100.5 ac) of privately owned land in Madison County, Tennessee, and is located approximately 4.1 km (2.5 mi) northwest of the city limits of Henderson, Tennessee. Beginning approximately 0.7 km southeast of the junction of U.S.–45 and Bear Creek Road, this unit extends approximately 0.08 km (0.05 mi) northeast of U.S.–45, crossing a railroad track, and then turns in a southeasterly direction, paralleling the track for a distance of approximately 0.5 km (0.3 mi). From this corner, the unit boundary turns southwest for a distance of approximately 0.79 km (0.49 mi), and then turns to the northwest for a distance of approximately 0.65 km (0.4 mi). From this corner, the unit boundary turns to the northeast for a distance of approximately 0.63 km (0.39 mi). Silt loam soils (PCE 1) are present throughout the unit, small patches of vegetation containing whorled sunflower and wet prairie species (PCE 2) are present, and a sufficient number of compatible mates are present for the

production of a limited number of viable achenes (PCE 3) (Ellis and McCauley 2009, p. 1838).

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats of soil disturbance due to agricultural practices; indiscriminate herbicide use or mowing road or railroad right-of-way maintenance; conversion of remnant prairie habitat to agricultural uses; and excessive shading or competition from native woody species or invasive, nonnative plants. Much of the land within this unit has been converted to agricultural uses, but is included because of the potential for decreasing fragmentation among the subpopulations that are present in this unit by restoring suitable vegetation within previously converted lands.

Fleshy-Fruit Gladecress

We are designating seven units as critical habitat for fleshy-fruit gladecress. The critical habitat areas we describe below constitute our current best assessment of areas that meet the definition of critical habitat for fleshy-fruit gladecress. All these units are occupied at the time of listing. The seven areas we are designating as critical habitat are: (1) Bluebird Glades; (2) Stover Branch Glades; (3) Indian Tomb Hollow Glade; (4) Cedar Plains South; (5) Cedar Plains North; (6) Massey Glade, and (7) Hillsboro Glade. The approximate area of each proposed critical habitat unit is shown in Table 4.

TABLE 4—DESIGNATED CRITICAL HABITAT UNITS FOR FLESHY-FRUIT GLADECRESS

Critical habitat unit	County	Ownership	Hectares	Acres
1. Bluebird Glades	Lawrence	Private	0.2	0.5
2. Stover Branch Glades	Lawrence	Private	3.2	7.8
3. Indian Tomb Hollow Glade	Lawrence	Federal	0.5	1.1
4. Cedar Plains South	Morgan	Private	0.04	0.1
5. Cedar Plains North	Morgan	Private	1.7	4.2
6. Massey Glade	Morgan	Private	2.75	6.8
7. Hillsboro Glade	Lawrence	Private	0.04	0.1
Total			8.43	20.6

We present brief descriptions of all units, and reasons why they meet the definition of critical habitat for fleshy-fruit gladecress, below.

Unit 1: Bluebird Glades

Unit 1 consists of 0.2 ha (0.5 ac) of privately owned land located in southeast Lawrence County, Alabama. The unit contains two subpopulations and is located along Alabama State Route 157 approximately 3.5 km (2.2 mi) southeast of the intersections of State Routes 36 and 157, approximately 3.7 km (2.3 mi) southwest of Danville, Alabama. These plants are located within a highly disturbed, limestone glade within a former mobile home site. Well-lighted, open areas (PCE 2), with shallow soils and exposed limestone bedrock or gravel that are dominated by characteristic glade vegetation (PCE 1), are present within the unit.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats of the invasion of exotic species into open glades and possible changes in land use, including road widening or development. Due to human-caused disturbances, exotic species, most notably Chinese privet and Japanese honeysuckle, threaten this site (Schotz 2009, pp. 13–14).

Unit 2: Stover Branch Glades

Unit 2 consists of 3.2 ha (7.8 ac) of privately owned land located in southeast Lawrence County, Alabama. The unit contains two subpopulations; one subpopulation is located on the southwest side of County Road 203 approximately 1.4 km (0.9 mi) south-southeast of Alabama State Route 157, and one subpopulation is located along the southwest side of State Route 157, approximately 1.6 to 2.1 km (1 to 1.3 mi) southeast of State Route 36, in Speake, Alabama. These subpopulations are located within a pasture and are actively maintained by livestock grazing. Well-lighted, open areas (PCE 2), with shallow soils and exposed limestone bedrock or gravel that are dominated by characteristic glade vegetation (PCE 1), are present within the unit.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats of invasive species into open glades and incompatible livestock grazing. Invasive species encroachment and continuous livestock grazing during the plant's reproductive cycle constitute ongoing threats to this site (Schotz 2009, pp. 15–16).

Unit 3: Indian Tomb Hollow Glade

Unit 3 consists of 0.5 ha (1.1 ac) of federally owned land located within the Bankhead National Forest in Lawrence County, Alabama. The unit is located on the west and northwest side of County Road 86 at a point roughly 4.5 km (2.8 mi) south of State Route 36 near Speake, Alabama. Habitat in this unit consists of a relatively small glade characterized by a flat limestone outcrop that is heavily buffered by nearly impenetrable tangles of eastern red cedar and upland swamp privet. Well-lighted, open areas (PCE 2), with shallow soils and exposed limestone bedrock or gravel that are dominated by characteristic glade vegetation (PCE 1), are present within the unit. The U.S. Forest Service provides management to control encroachment of invasive species (PCE 3).

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats of the invasion of exotic species into open glade and damage from vehicles. Moderate encroachment of exotic species, most notably Chinese privet and Japanese honeysuckle, threatens this site along the glade periphery (Schotz 2009, pp. 18–19). This site also shows minimal incidence of trash disposal and damage from recreational vehicles.

Unit 4: Cedar Plains South

Unit 4 consists of 0.04 ha (0.1 ac) of privately owned land located in Morgan County, Alabama. This unit is located on Cedar Plains Road, 1.2 km (0.75 mi) south of County Road 55 and approximately 8 km (5 mi) west of the junction of U.S. Highway 31 and County Road 55 in Falkville. This population represents an excellent landscape context but contains the smallest number of plants of any of the known occurrences. Habitat in this unit

consists of a well-lighted limestone glade opening (PCE 2) located within a limestone forest primarily comprised of eastern red cedar and various other hardwoods. Herbaceous vegetation characteristic of glade communities is present within the well-lighted glade (PCE 1), and competition and shading from native and invasive, nonnative plants are currently not a threat to the habitat in this unit (PCE 3). The features essential to the conservation of the species in this unit may require special management considerations or protections to prevent future adverse effects due to competition and shading caused by encroachment of native and invasive, nonnative plants.

Unit 5: Cedar Plains North

Unit 5 consists of 1.7 ha (4.2 ac) of privately owned land located in Morgan County, Alabama. This unit is located on Cedar Plains Road, from 0.6 to 1 km (0.4 to 0.6 mi) north of County Road 55, approximately 8 km (5 mi) west of the junction of U.S. Highway 31 and County Road 55 in Falkville. These populations are located within a pasture and are actively maintained by livestock grazing. Well-lighted, open areas (PCE 2), with shallow soils and exposed limestone bedrock or gravel that are dominated by characteristic glade vegetation (PCE 1), are present within the unit. This glade complex, although subjected to ongoing agricultural interests, represents the greatest concentration of plants currently known for the species.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats of invasive species into open glades and incompatible livestock grazing. Invasive species encroachment and continuous livestock grazing during the plant's reproductive cycle constitute ongoing threats to this site (Schotz 2009, pp. 23–24).

Unit 6: Massey Glade

Unit 6 consists of 2.75 ha (6.8 ac) of privately owned land located in Morgan County, Alabama. This unit is located on County Road 55, 0.3 to 0.6 km (0.2 to 0.4 mi) west of Cedar Plains Road, approximately 8.3 km (5.2 mi) west of the junction of U.S. Highway 31 and County Road 55 in Falkville. This population is located within a highly disturbed complex of limestone pavement barrens scattered in an actively utilized pasture and within the yards and fields of nearby homes. Well-lighted, open areas (PCE 2), with shallow soils and exposed limestone bedrock or gravel that are dominated by characteristic glade vegetation (PCE 1), are present within the unit.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats of invasive species into open glades and incompatible livestock grazing. Invasive species encroachment and continuous livestock grazing during the plant's reproductive cycle constitute ongoing threats to this site (Schotz 2009, pp. 25–26).

Unit 7. Hillsboro Glade

Unit 7 consists of 0.04 ha (0.1 ac) of privately owned land in Lawrence County, Alabama. This unit is currently occupied and is located within a powerline right-of-way approximately 400 feet south of the intersection of County Roads 217 and 222, near Hillsboro. Habitat in this unit consists of a relatively small limestone glade outcrop within a powerline right-of-way that is bordered by a forested area. Well-illuminated, open areas (Primary Constituent Element (PCE 2), with shallow soils and exposed limestone bedrock that are dominated by characteristic glade vegetation (PCE 1), are present within the unit.

The features essential to the conservation of the species in this unit may require special management considerations or protection to address threats of the invasion of exotic species into open glades, indiscriminate herbicide use or mowing for electrical transmission line right-of-way maintenance, and possible changes in land use, including agriculture or development.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. In addition, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under the Act or result in the destruction or adverse modification of proposed critical habitat.

Decisions by the 5th and 9th Circuit Courts of Appeals have invalidated our regulatory definition of ''destruction or adverse modification'' (50 CFR 402.02) (see *Gifford Pinchot Task Force* v. *U.S. Fish and Wildlife Service,* 378 F. 3d 1059 (9th Cir. 2004) and *Sierra Club* v. *U.S. Fish and Wildlife Service,* 245 F.3d 434 (5th Cir. 2001)), and we do not rely on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat. Under the provisions of the Act, we determine destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species.

If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. Examples of actions that are subject to the section 7 consultation process are actions on State, tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat, and actions on State, tribal, local, or private lands that are not federally funded or authorized, do not require section 7 consultation.

As a result of section 7 consultation, we document compliance with the requirements of section 7(a)(2) through our issuance of:

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

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

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species and/or destroy or adversely modify critical habitat, we provide reasonable and prudent alternatives to the project, if any are identifiable, that would avoid the likelihood of jeopardy and/or destruction or adverse modification of critical habitat. We define ''reasonable and prudent alternatives'' (at 50 CFR 402.02) as alternative actions identified during consultation that:

(1) Can be implemented in a manner consistent with the intended purpose of the action,

(2) Can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction,

(3) Are economically and technologically feasible, and

(4) Would, in the Director's opinion, avoid the likelihood of jeopardizing the continued existence of the listed species and/or avoid the likelihood of destroying or adversely modifying critical habitat.

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

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

Application of the ''Adverse Modification'' Standard

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species. Activities that may destroy or adversely modify critical habitat are those that alter the physical or biological features to an extent that appreciably reduces the conservation value of critical habitat for Short's bladderpod, whorled sunflower, or fleshy-fruit gladecress. As discussed above, the role of critical habitat is to support life-history needs of the species and provide for the conservation of the species.

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

Activities that may affect critical habitat, when carried out, funded, or authorized by a Federal agency, should result in consultation for the Short's bladderpod, whorled sunflower, or fleshy-fruit gladecress. These activities include, but are not limited to:

Short's bladderpod

(1) Actions that would remove, severely alter, or inundate portions of bedrock formations or outcrops of calcareous limestones and interbedded shales or siltstones (geologic substrates). Actions that could remove or severely alter geologic substrates include, but are not limited to, construction of bridges, buildings, quarries, roads, railroad tracks, or interstate pipelines and associated structures. These actions could directly remove or result in alteration of geologic substrates due to blasting with explosive charges and removal or disturbance by heavy machinery. Construction of new dams or raising elevations of existing dams downstream of a critical habitat unit could inundate geologic substrates.

(2) Actions that would remove, severely alter, or increase erosion of soils. Such activities could include construction of bridges, buildings, quarries, roads, railroad tracks, or interstate pipelines and associated structures; maintenance of transportation rights-of-way; removal of woody vegetation; and reservoir management. Construction activities could directly remove soils during the course of grading and site preparation. Establishing a quarry would involve removal of the overburden, including soils, prior to excavating the geologic substrate for a quarry. Transportation right-of-way maintenance that involved grading or use of heavy equipment to remove vegetation could cause removal, alteration, or erosion of soils. Removal of woody vegetation, if done excessively, could result in soil erosion on the steeply sloped sites in most critical habitat units. Reservoir management that caused frequent changes in reservoir stage could lead to soil erosion, especially at lower elevations of hillside and bluff habitats. Removal or erosion of soils could lead to the loss or reduction of seed banks formed by Short's bladderpod. Soil alteration due to grading or other disturbance could cause soils to be overturned, resulting in burial of seed banks formed by Short's bladderpod.

(3) Actions that would result in removal of forest communities, promote development of woody vegetation with high stocking densities that cause excessive shading and a lack of forest gaps, or introduce invasive, nonnative plants into critical habitat. Such activities could include timber harvest that severely reduces or completely removes forest canopy; mechanical or chemical vegetation management for transportation right-of-way maintenance; and introduction of invasive, nonnative herbaceous and woody plants. Timber harvest that severely reduces or completely removes forest canopy cover would promote forest regeneration characterized by high stem densities and lack of a diverse age structure, which could cause excessive shading. Mechanical or chemical vegetation management for transportation right-of-way maintenance potentially could be beneficial for Short's bladderpod if well-planned and carefully executed. However, indiscriminate use of chemical or mechanical methods for vegetation control could cause complete removal of the forest canopy, which would promote regeneration characterized by high stem densities and lack of a diverse age structure, potentially leading to excessive shading. Introducing invasive, nonnative herbaceous and woody plants could lead to excessive shading and competition. Such species include, but are not limited to *Lonicera maackii* (bush honeysuckle), *L. japonica* (Japanese honeysuckle), *Ailanthus altissima* (tree-of-heaven), *Ligustrum vulgare* and *L. sinense* (privet), *Lespedeza cuneata* (sericea lespedeza), and *Lespedeza bicolor* (bicolor lespedeza). The effects of the activities described above would eventually prevent Short's bladderpod from receiving adequate light for growth and reproduction.

Whorled Sunflower

(1) Actions that would remove, severely alter, or increase erosion of soils. Such activities could include clearing, disking, plowing, and harvesting of row crop fields; site preparation, operation of heavy equipment, and construction and maintenance of log landings, loading decks, skid trails, and haul roads for silvicultural activities; and maintenance of transportation rights-of-way. These activities could result in the removal of soils, which would remove any whorled sunflower plants, rhizomes, or seeds present in the soil. These activities also could cause soil compaction, which could limit root and rhizome development or reduce water infiltration, or lead to increased soil erosion and loss of organic matter and nutrients.

(2) Actions that would promote encroachment of woody species into old fields, prairie remnants, or woodlands with herbaceous vegetation that is characteristic of moist prairie remnants. Such activities could include the

planting of forest stands with high stem densities; planting forested stream buffers; or neglecting to conduct periodic mechanical disturbance, herbicide application, or prescribed burning. Planting forest stands with high stem densities or planting forested stream buffers would eventually lead to development of a canopy that would prevent whorled sunflower from receiving adequate light for growth and reproduction. Neglecting to conduct periodic management in suitable habitat, such as mechanical disturbance, careful herbicide application, or prescribed burning, would lead to encroachment by shrubs or trees that would eventually prevent whorled sunflower from receiving adequate light for growth and reproduction.

(3) Actions that cause mortality of whorled sunflower plants or that disrupt growth and prevent individuals from producing flowers. Such activities could include indiscriminate herbicide application or mowing for transportation right-of-way maintenance, agriculture, or silviculture, or actions described above that cause removal of soils and plant parts they contain. Herbicide application or removal of soil and any plant parts contained therein could result in direct mortality of individual whorled sunflower plants. Poorly timed mowing could disrupt growth and prevent flower production. Either of these activities could permanently or temporarily reduce the number of compatible mates within a population, reducing the potential for viable achene production to occur.

Fleshy-Fruit Gladecress

(1) Actions that would remove, severely alter, or significantly reduce limestone outcrops. Such activities could include, but are not limited to, construction of interstate pipelines and associated structures that are regulated by the Federal Energy Regulatory Commission; U.S. Army Corps of Engineers-issued Clean Water Act section 404 and River and Harbors Act section 10 permits for wetland crossings for linear projects (pipelines, transmission lines, and roads); road development (expansions and improvements) funded by the Federal Highway Administration; and U.S. Department of Agriculture funding and technical assistance for conversion of glades and surroundings to pine plantations or for brush control programs involving herbicide applications. These actions could directly eliminate a site or alter the hydrology, open sunny aspect, and substrate conditions, reducing suitability of a location to a point that it no longer provides the environment necessary to sustain the species. In the case of some types of herbicide applications, the habitat may become unsuitable for germination and successful growth of seedlings. These activities would permanently alter the habitat that fleshy-fruit gladecress is dependent on to complete its life cycle.

(2) Actions that would significantly alter natural flora, including activities such as digging, disking, blading or construction work; introduction of nonnative species for erosion control along rights-of-way or in other areas; indiscriminate mechanical or chemical vegetation management for right-of-way maintenance; and a lack of management of nonnative or native woody species. Mechanical or chemical vegetation management for right-of-way maintenance potentially could be beneficial for fleshy-fruit gladecress if well-planned and carefully executed. However, indiscriminate use of chemical or mechanical methods for vegetation control could alter the composition and structure of characteristic glade vegetation communities by causing mortality, disrupting reproductive cycles, or preventing seedling establishment of fleshy-fruit gladecress and associated native species.

Exemptions

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

Section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) provides that: ''The Secretary shall not designate as critical habitat any lands or other geographic areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan [INRMP] prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.'' There are no Department of Defense lands with a completed INRMP within the critical habitat designation.

Consideration of Impacts Under Section 4(b)(2)of the Act

Section 4(b)(2) of the Act states that the Secretary shall designate and make revisions to critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, the statute on its face, as well as the legislative history, are clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor.

Under section 4(b)(2) of the Act, we may exclude an area from designated critical habitat based on economic impacts, impacts on national security, or any other relevant impacts. In considering whether to exclude a particular area from the designation, we identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, and evaluate whether the benefits of exclusion outweigh the benefits of inclusion.

Consideration of Economic Impacts

Under section 4(b)(2) of the Act, we consider the economic impacts of specifying any particular area as critical habitat. In order to consider economic impacts, we prepared an incremental effects memorandum (IEM), which together with our narrative and interpretation of effects constitute our draft economic analysis (DEA) of the proposed critical habitat designation and related factors (IEc 2014a). The DEA, dated February 14, 2014, was made available for public review from May 29, 2014, through June 30, 2014 (79 FR 30792). Following the close of the comment period, we reviewed and evaluated all information submitted during the comment period that may pertain to our consideration of the probable incremental economic impacts of these critical habitat designations and incorporated this information into a final economic analysis (FEA) (IEc 2014b). Additional information relevant to the probable incremental economic impacts of critical habitat designation for Short's bladderpod, whorled sunflower, and fleshy-fruit gladecress is summarized below and available in the FEA available at *http://www.regulations.gov*.

The FEA addresses how probable economic impacts are likely to be distributed, including an assessment of any local or regional impacts of habitat conservation and the potential effects of conservation activities on government agencies, private businesses, and individuals. Decisionmakers can use this information to evaluate whether the effects of the designation might unduly

burden a particular group, area, or economic sector. The FEA assesses the economic impacts of Short's bladderpod, whorled sunflower, and fleshy-fruit gladecress conservation efforts associated with the following categories of activity: Utilities projects, recreation, conservation projects, transportation activities, agricultural activities, and residential and commercial development.

In general, because all of the critical habitat units are occupied by one of the three species, the Service believes that, in most circumstances, there will be no conservation efforts needed to prevent adverse modification of critical habitat beyond those that would be required to prevent jeopardy to the species. Any incremental costs of the critical habitat designation will predominantly be administrative in nature and would not be significant. The designation of critical habitat is not likely to result in an increase of consultations, but rather only the additional administrative effort required for each consultation to address the effects of each proposed agency action on critical habitat.

Our FEA did not identify any disproportionate costs that are likely to result from the designation. Consequently, the Secretary is not exerting her discretion to exclude any areas from this designation of critical habitat for Short's bladderpod, whorled sunflower, or fleshy-fruit gladecress based on economic impacts.

A copy of the IEM and FEA with supporting documents may be obtained by contacting the Tennessee Ecological Services Field Office (see **ADDRESSES**) or by downloading from the Internet at *http://www.regulations.gov*.

Exclusions Based on National Security Impacts or Homeland Security Impacts

Under section 4(b)(2) of the Act, we consider whether there are lands owned or managed by the Department of Defense where a national security impact might exist. We have determined that no lands within the designated critical habitat for the whorled sunflower and fleshy-fruit gladecress are owned or managed by the Department of Defense. The Department of Defense owns or manages land, adjacent to Corps of Engineers reservoirs, where critical habitat is proposed for Short's bladderpod. However, we anticipate no impact on national security from designating this land as critical habitat. Consequently, the Secretary is not exerting her discretion to exclude any areas from this final designation based on impacts on national security.

Exclusions Based on Other Relevant Impacts

Under section 4(b)(2) of the Act, we consider any other relevant impacts, in addition to economic impacts and impacts on national security. We consider a number of factors, including whether the landowners have developed any HCPs or other management plans for the area, or whether there are conservation partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at any tribal issues and consider the government-to-government relationship of the United States with tribal entities. We also consider any social impacts that might occur because of the designation.

In preparing this final rule, we have determined that there are currently no HCPs or other management plans for Short's bladderpod, whorled sunflower, nor fleshy-fruit gladecress, and the final designation does not include any tribal lands or trust resources. We anticipate no impact on tribal lands, partnerships, or HCPs from this critical habitat designation. Accordingly, the Secretary is not exercising her discretion to exclude any areas from this final designation based on other relevant impacts.

Required Determinations

Regulatory Planning and Review (Executive Orders 12866 and 13563)

Executive Order 12866 provides that the Office of Information and Regulatory Affairs (OIRA) will review all significant rules. The Office of Information and Regulatory Affairs has determined that this rule is not significant.

Executive Order 13563 reaffirms the principles of E.O. 12866 while calling for improvements in the nation's regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative, and least burdensome tools for achieving regulatory ends. The executive order directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives. E.O. 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this rule in a manner consistent with these requirements.

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

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 *et seq.*), as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 (5 U.S.C. 801 *et seq.*), whenever an agency must publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities. In this final rule, we are certifying that the critical habitat designations for Short's bladderpod, whorled sunflower, and fleshy-fruit gladecress will not have a significant economic impact on a substantial number of small entities. The following discussion explains our rationale.

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

The Service's current understanding of the requirements under the RFA, as amended, and following recent court

decisions, is that Federal agencies are required to evaluate the potential incremental impacts of rulemaking only on those entities directly regulated by the rulemaking itself, and, therefore, not required to evaluate the potential impacts to indirectly regulated entities. The regulatory mechanism through which critical habitat protections are realized is section 7 of the Act, which requires Federal agencies, in consultation with the Service, to ensure that any action authorized, funded, or carried by the agency is not likely to destroy or adversely modify critical habitat. Therefore, under section 7 only Federal action agencies are directly subject to the specific regulatory requirement (avoiding destruction and adverse modification) imposed by critical habitat designation. Consequently, it is our position that only Federal action agencies will be directly regulated by this designation. There is no requirement under RFA to evaluate the potential impacts to entities not directly regulated. Moreover, Federal agencies are not small entities. Therefore, because no small entities are directly regulated by this rulemaking, the Service certifies that this final critical habitat designation will not have a significant economic impact on a substantial number of small entities and a regulatory flexibility analysis is not required.

Energy Supply, Distribution, or Use—Executive Order 13211

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare Statements of Energy Effects when undertaking certain actions. OMB has provided guidance for implementing this Executive Order that outlines nine outcomes that may constitute ''a significant adverse effect'' when compared to not taking the regulatory action under consideration.

The economic analysis finds that none of these criteria are relevant to this analysis. Thus, based on information in the economic analysis, energy-related impacts associated with Short's bladderpod, whorled sunflower, and fleshy-fruit gladecress conservation activities within critical habitat are not expected. As such, the designation of critical habitat is not expected to significantly affect energy supplies, distribution, or use. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required.

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

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

(1) This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or tribal governments, or the private sector, and includes both ''Federal intergovernmental mandates'' and ''Federal private sector mandates.'' These terms are defined in 2 U.S.C. 658(5)–(7). ''Federal intergovernmental mandate'' includes a regulation that ''would impose an enforceable duty upon State, local, or tribal governments'' with two exceptions. It excludes ''a condition of Federal assistance.'' It also excludes ''a duty arising from participation in a voluntary Federal program,'' unless the regulation ''relates to a then-existing Federal program under which $500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority,'' if the provision would ''increase the stringency of conditions of assistance'' or ''place caps upon, or otherwise decrease, the Federal Government's responsibility to provide funding,'' and the State, local, or tribal governments ''lack authority'' to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. ''Federal private sector mandate'' includes a regulation that ''would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.''

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would critical habitat shift the costs of the large entitlement programs listed above onto State governments.

(2) We do not believe that this rule will significantly or uniquely affect small governments because it will not produce a Federal mandate of $100 million or greater in any year, that is, it is not a ''significant regulatory action'' under the Unfunded Mandates Reform Act. Small governments will be affected only to the extent that any programs having Federal funds, permits, or other authorized activities must ensure that their actions will not adversely affect the critical habitat. The FEA concludes incremental impacts may occur due to administrative costs of section 7 consultations for activities related to commercial development, residential development, utilities projects, recreational development, conservation projects, transportation activities, agricultural activities, and associated actions; however, these are not expected to significantly affect small government entities. Consequently, a Small Government Agency Plan is not required.

Takings—Executive Order 12630

In accordance with Executive Order 12630 (''Government Actions and Interference with Constitutionally Protected Private Property Rights''), we have analyzed the potential takings implications of designating critical habitat for Short's bladderpod, whorled sunflower, and fleshy-fruit gladecress in a takings implications assessment. As discussed above, the designation of critical habitat affects only Federal actions. Although private entities that receive Federal funding, assistance, or require approval or authorization from a Federal agency for an action may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. The DEA found that no significant economic impacts are likely to result from the designation of critical habitat for Short's bladderpod, whorled sunflower, and fleshy-fruit gladecress. Because the Act's critical habitat protection requirements apply only to Federal agency actions, few conflicts between critical habitat and private property rights should result from this

designation. Based on the best available information, the takings implications assessment concludes that this designation of critical habitat for Short's bladderpod, whorled sunflower, and fleshy-fruit gladecress does not pose significant takings implications.

Federalism—Executive Order 13132

In accordance with E.O. 13132 (Federalism), this rule does not have significant Federalism effects. A federalism summary impact statement is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of this critical habitat designation with, appropriate State resource agencies in Alabama, Georgia, Indiana, Kentucky, and Tennessee. We received comments from the Kentucky State Nature Preserves Commission and Tennessee Department of Environment and Conservation and have addressed them in the Summary of Comments and Recommendations section of the rule. From a federalism perspective, the designation of critical habitat directly affects only the responsibilities of Federal agencies. The Act imposes no other duties with respect to critical habitat, either for States and local governments, or for anyone else. As a result, the rule does not have substantial direct effects either on the States, or on the relationship between the national government and the States, or on the distribution of powers and responsibilities among the various levels of government. The designation may have some benefit to these governments because the areas that contain the features essential to the conservation of the species are more clearly defined, and the physical and biological features of the habitat necessary to the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist these local governments in long-range planning (because these local governments no longer have to wait for case-by-case section 7 consultations to occur).

Where State and local governments require approval or authorization from a Federal agency for actions that may affect critical habitat, consultation under section 7(a)(2) would be required. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

Civil Justice Reform—Executive Order 12988

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and that it meets the applicable standards set forth in sections 3(a) and 3(b)(2) of the Order. We are designating critical habitat in accordance with the provisions of the Act. To assist the public in understanding the habitat needs of the species, the rule identifies the elements of physical or biological features essential to the conservation of Short's bladderpod, whorled sunflower, and fleshy-fruit gladecress. The designated areas of critical habitat are presented on maps, and the rule provides several options for the interested public to obtain more detailed location information, if desired.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

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

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes. As discussed above (see Exclusions), we are not designating critical habitat for the Short's bladderpod, whorled sunflower, or fleshy-fruit gladecress on tribal lands.

References Cited

A complete list of all references cited 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 rulemaking are the staff members of the Tennessee and Alabama Ecological Services Field Offices.

List of Subjects in 50 CFR Part 17

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

Regulation Promulgation

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

PART 17—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. Amend § 17.96(a) as follows:
■ a. By adding an entry in alphabetical order under Family Asteraceae for ''Helianthus verticillatus (whorled sunflower)''; and
■ b. By adding entries in alphabetical order under Family Brassicaceae for ''Leavenworthia crassa (fleshy-fruit gladecress)'' and ''Physaria globosa (Short's bladderpod)''.

The additions read as follows:

§ 17.96 Critical habitat—plants.

(a) *Flowering plants.*

* * * * *

Family Asteraceae: *Helianthus verticillatus* (whorled sunflower)

(1) Critical habitat units are depicted for Cherokee County, Alabama; Floyd County, Georgia; and Madison and McNairy Counties, Tennessee, on the maps below.

(2) Within these areas, the primary constituent elements of the physical or biological features essential to the conservation of whorled sunflower consist of three components:

(i) Silt loam, silty clay loam, or fine sandy loam soils on land forms including broad uplands, depressions, stream terraces, and floodplains within the headwaters of the Coosa River in Alabama and Georgia and the East Fork Forked Deer and Tuscumbia rivers in Tennessee.

(ii) Sites in which forest canopy is absent, or where woody vegetation is present at sufficiently low densities to provide full or partial sunlight to whorled sunflower plants for most of the day, and which support vegetation characteristic of moist prairie communities. Invasive, nonnative plants must be absent or present in sufficiently low numbers to not inhibit growth or reproduction of whorled sunflower.

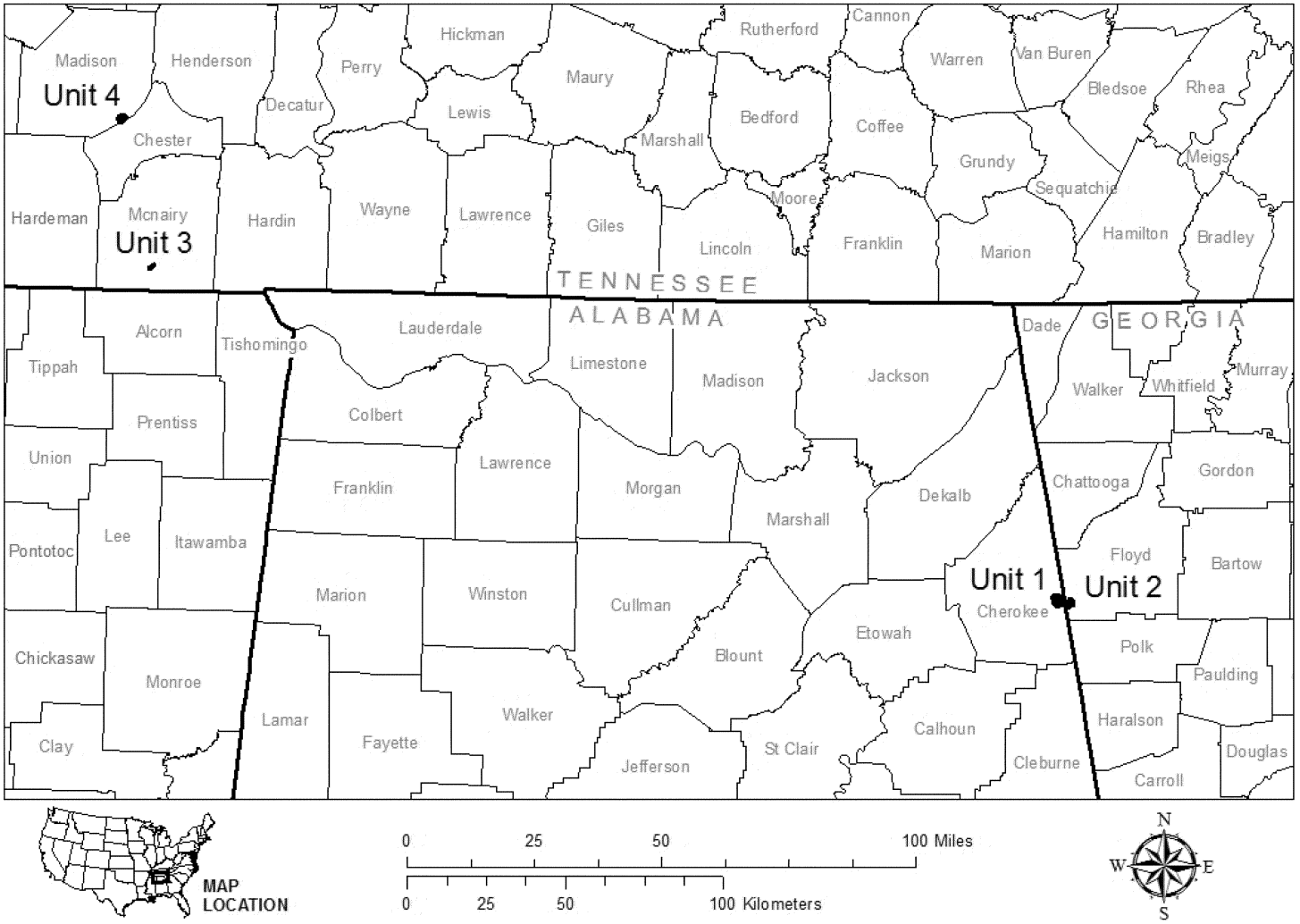
(iii) Occupied sites in which a sufficient number of compatible mates are present for outcrossing and production of viable achenes to occur.

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on September 25, 2014.

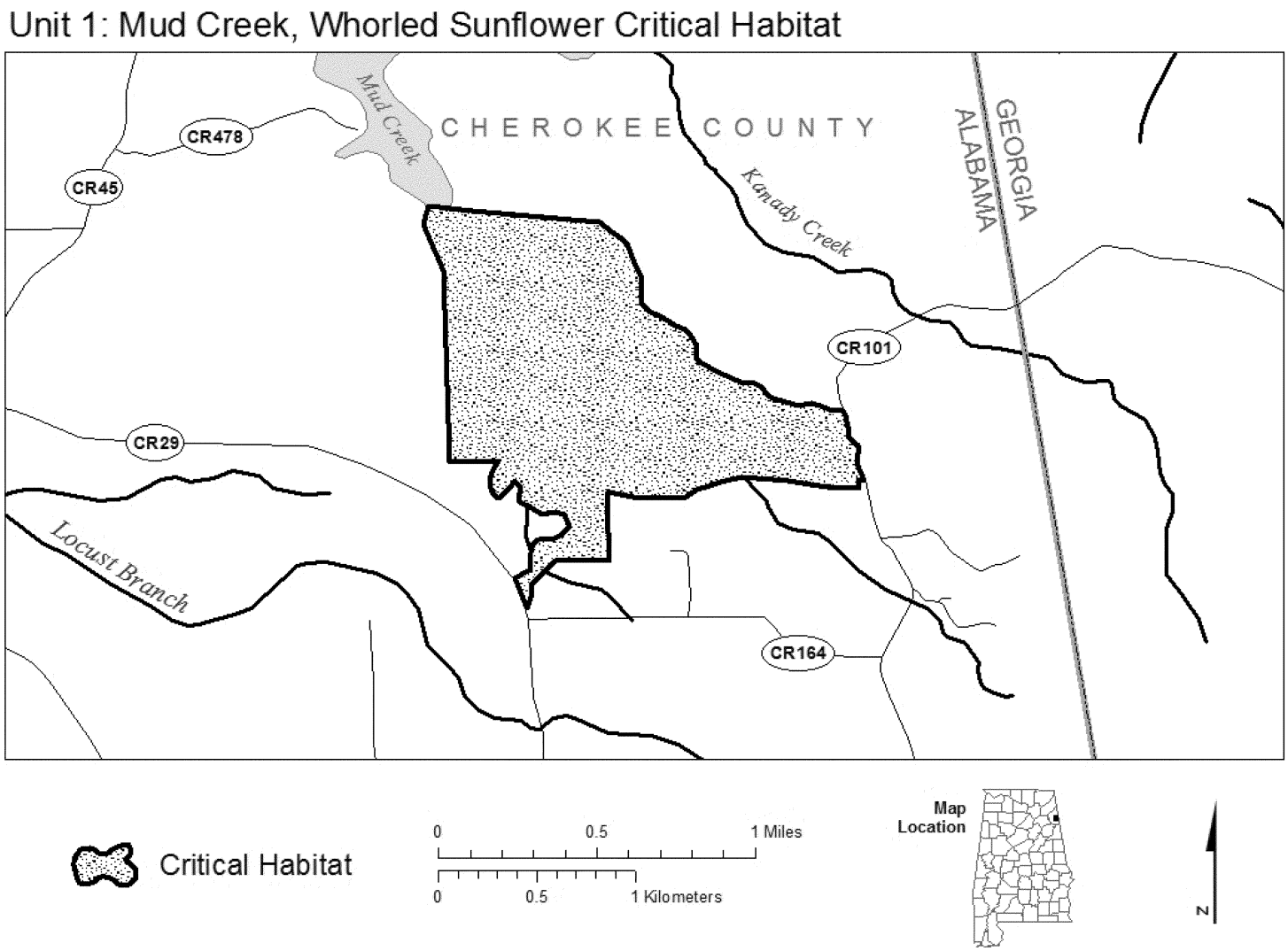
(4) *Critical habitat map units.* Data layers defining map units were created on a base of Bing Maps digital aerial photography supplied by the Harris Corporation, Earthstar Geographics LLC, and the Microsoft Corporation. Critical habitat units were then mapped using the USA Contiguous Albers Equal Area Projection with a NAD 83 datum. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the Service's Internet site at *http://www.fws.gov/cookeville*, at *http://www.regulations.gov* at Docket No. FWS–R4–ES–2013–0086, and at the field office responsible for this designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

(5) Index map follows:

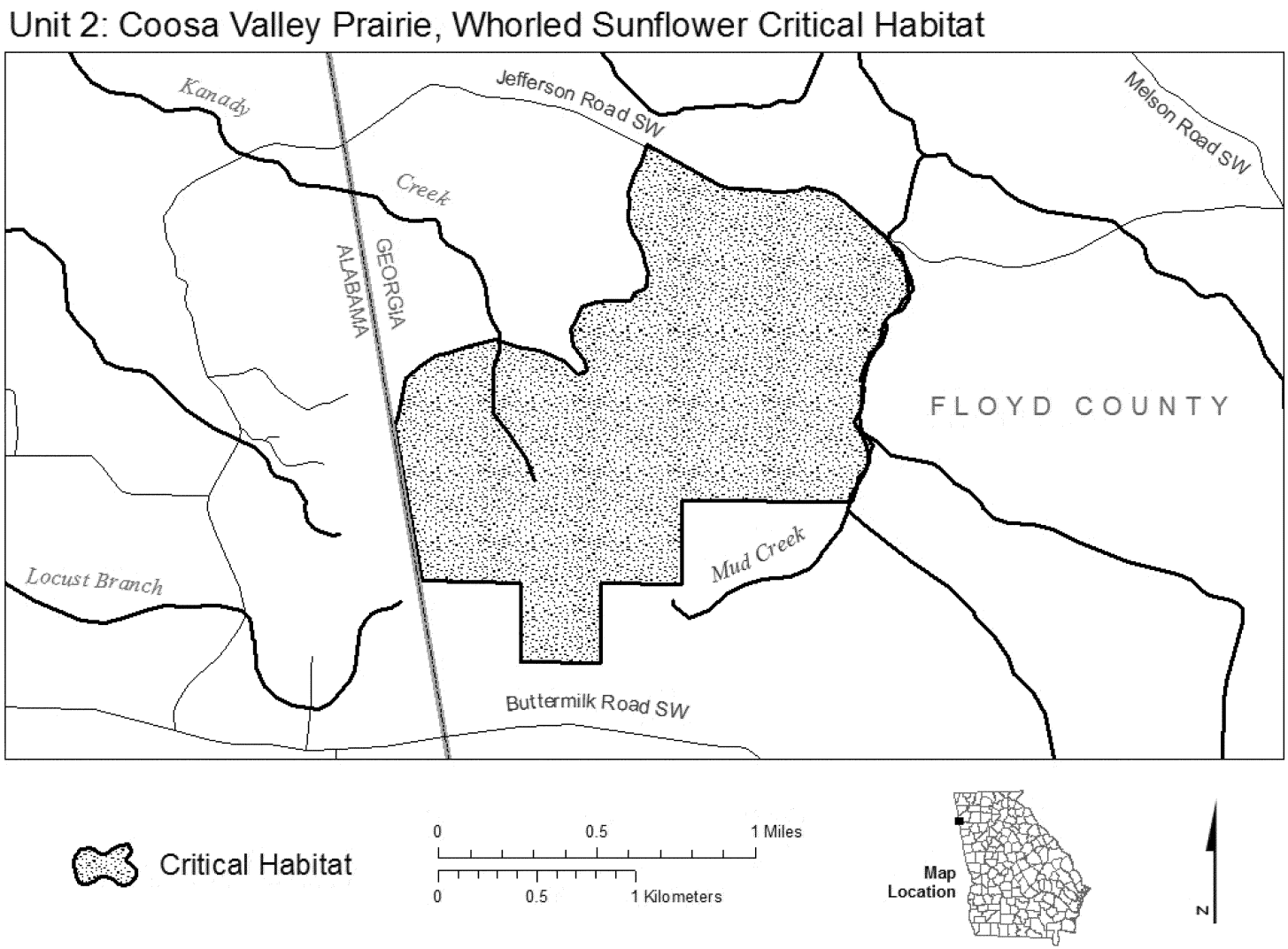
Index Map of Critical Habitat Locations for the Whorled Sunflower in Alabama, Georgia and Tennessee



(6) Unit 1: Mud Creek, Cherokee County, Alabama. Map of Unit 1 follows:

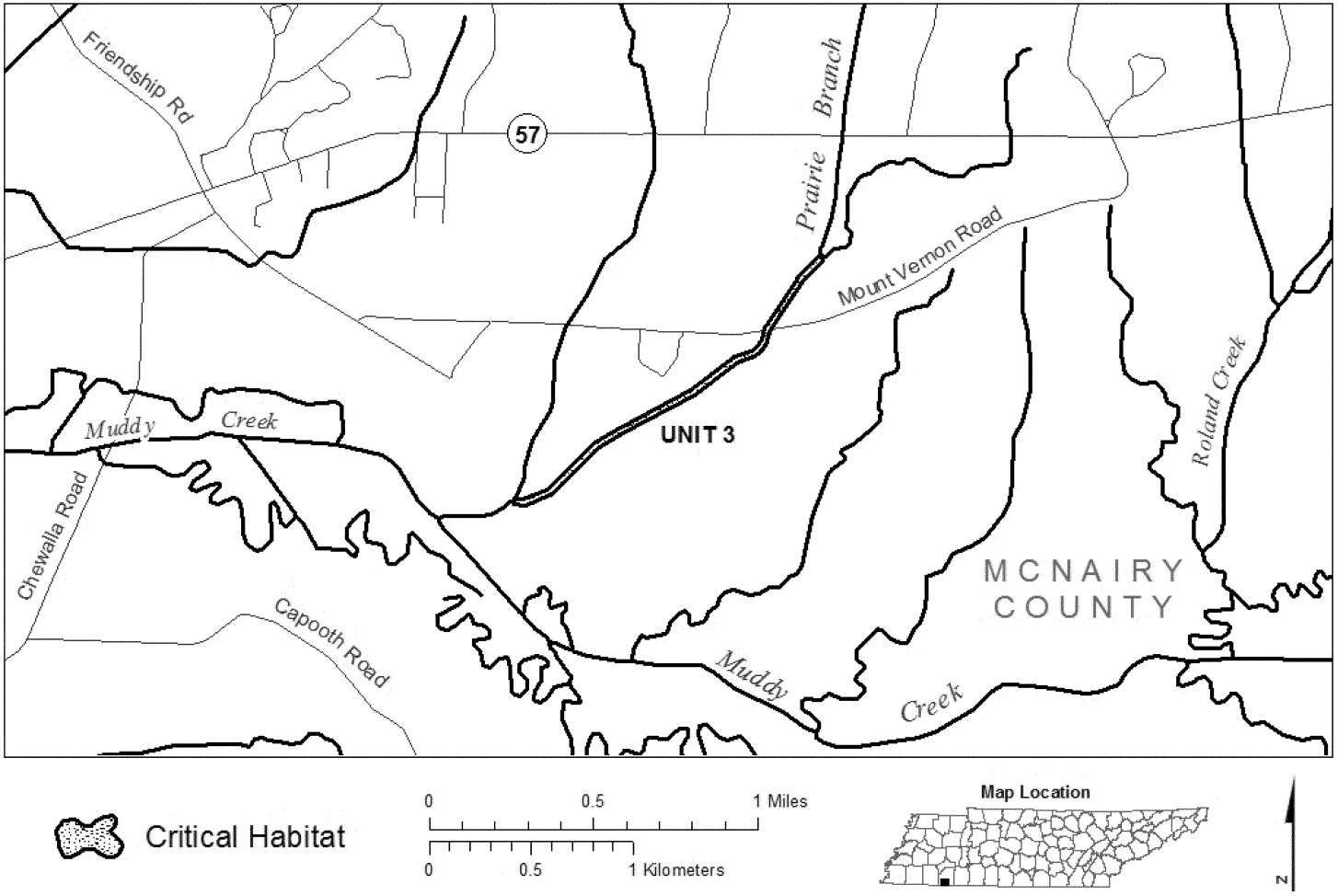


(7) Unit 2: Coosa Valley Prairie, Floyd County, Georgia. Map of Unit 2 follows:

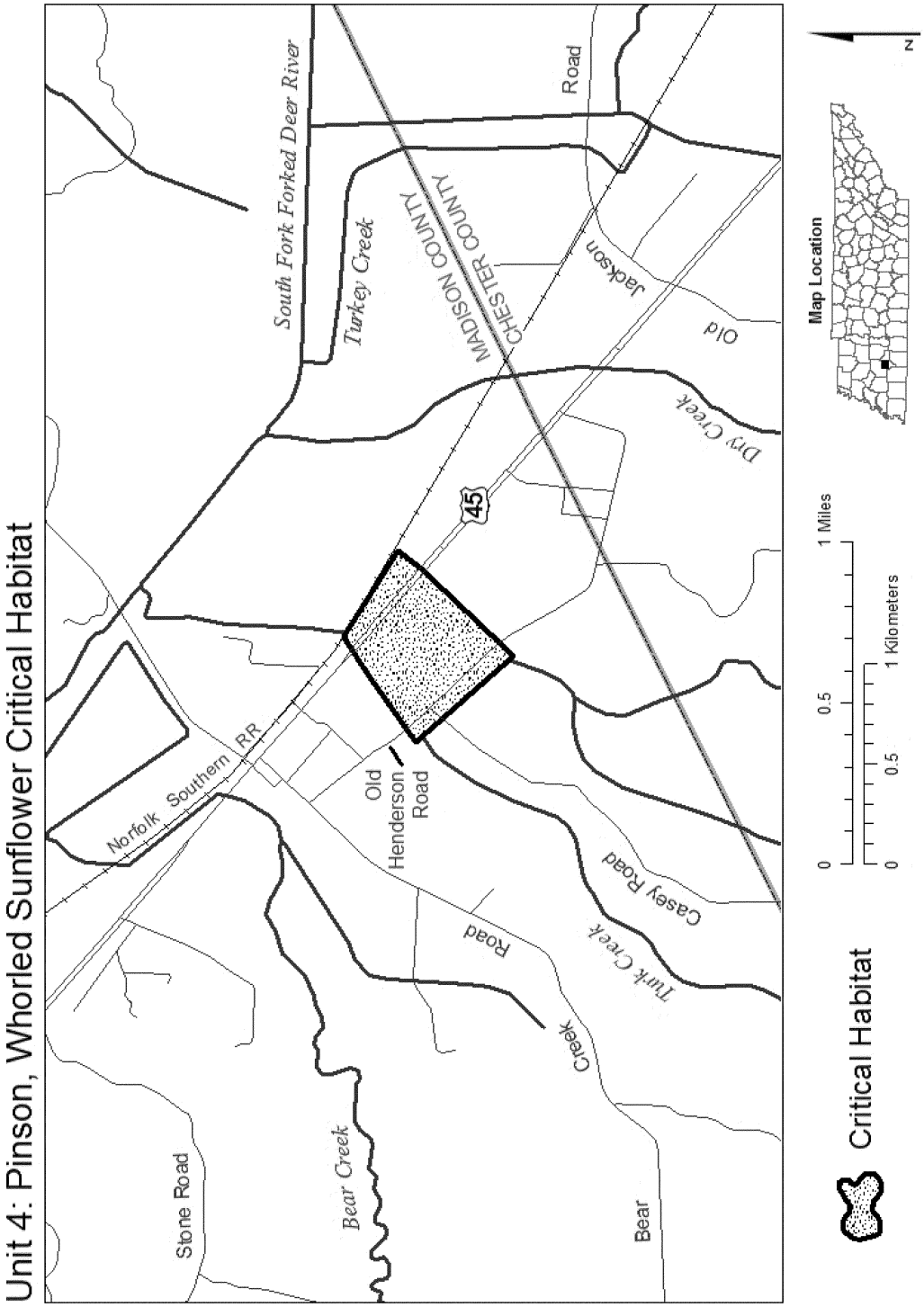


(8) Unit 3: Prairie Branch, McNairy County, Tennessee. Map of Unit 3 follows:

Unit 3: Prairie Branch, Whorled Sunflower Critical Habitat



(9) Unit 4: Pinson, Madison County, Tennessee. Map of Unit 4 follows:



* * * * *

Family Brassicaceae: *Leavenworthia crassa* (fleshy-fruit gladecress)

(1) Critical habitat units are depicted for Lawrence and Morgan Counties, Alabama, on the maps below.

(2) Within these areas, the primary constituent elements of the physical or biological features essential to the conservation of fleshy-fruit gladecress consist of three components:

(i) Shallow-soiled, open areas with exposed limestone bedrock or gravel that are dominated by herbaceous vegetation characteristic of glade communities.

(ii) Open or well-lighted areas of exposed limestone bedrock or gravel that ensure fleshy-fruit gladecress plants remain unshaded for a significant portion of the day.

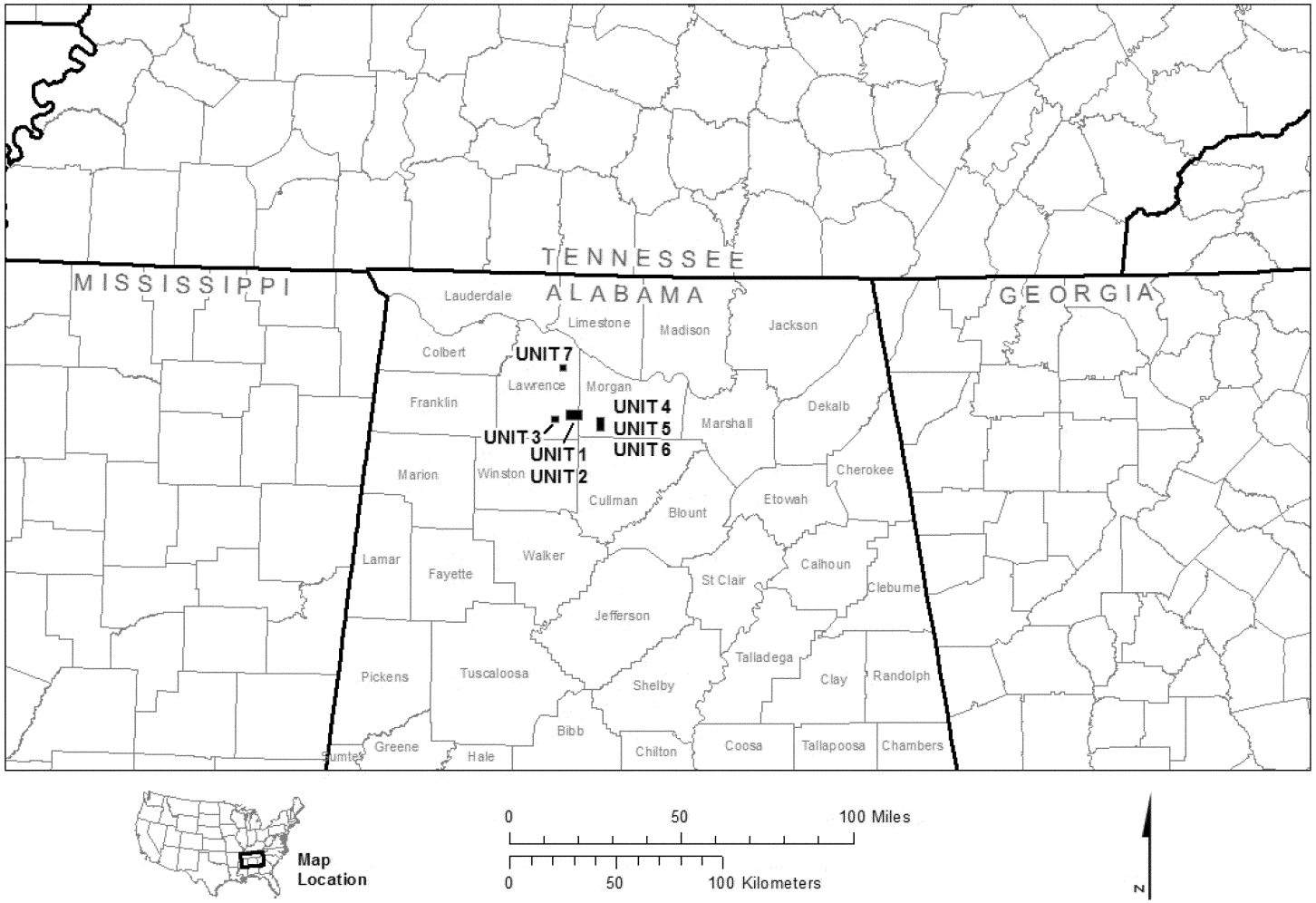
(iii) Glade habitat that is protected from both native and invasive, nonnative plants to minimize competition and shading of fleshy-fruit gladecress.

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on September 25, 2014.

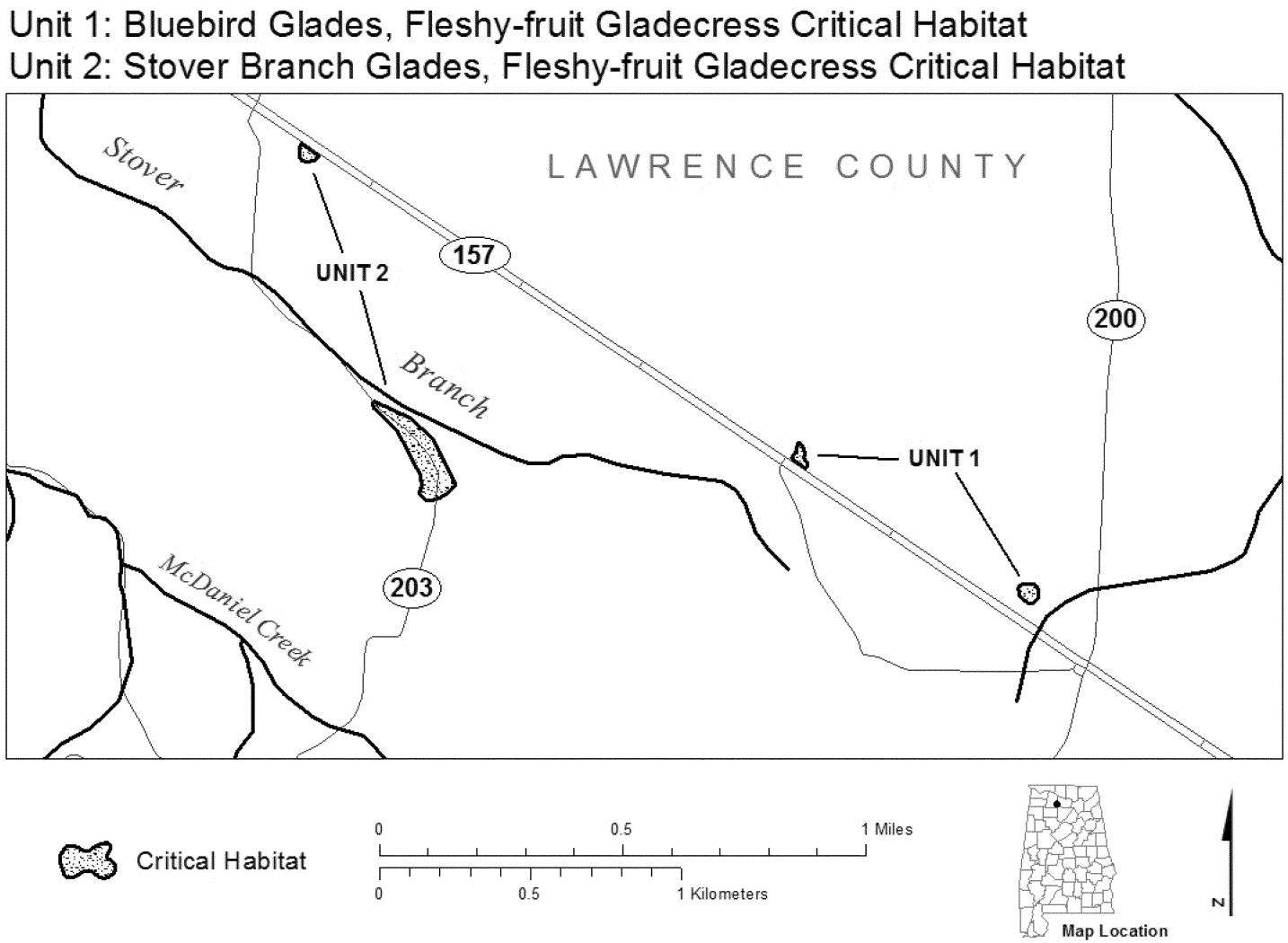
(4) *Critical habitat map units.* Data layers defining map units were created on a base of Bing Maps digital aerial photography supplied by the Harris Corporation, Earthstar Geographics LLC, and the Microsoft Corporation. Critical habitat units were then mapped using the USA Contiguous Albers Equal Area Projection with a NAD 83 datum. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the Service's Internet site at *http://www.fws.gov/cookeville*, at *http://www.regulations.gov* at Docket No. FWS–R4–ES–2013–0086, and at the field office responsible for this designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

(5) Index map follows:

Index Map of Critical Habitat Locations for the Fleshy-fruit Gladecress in Alabama



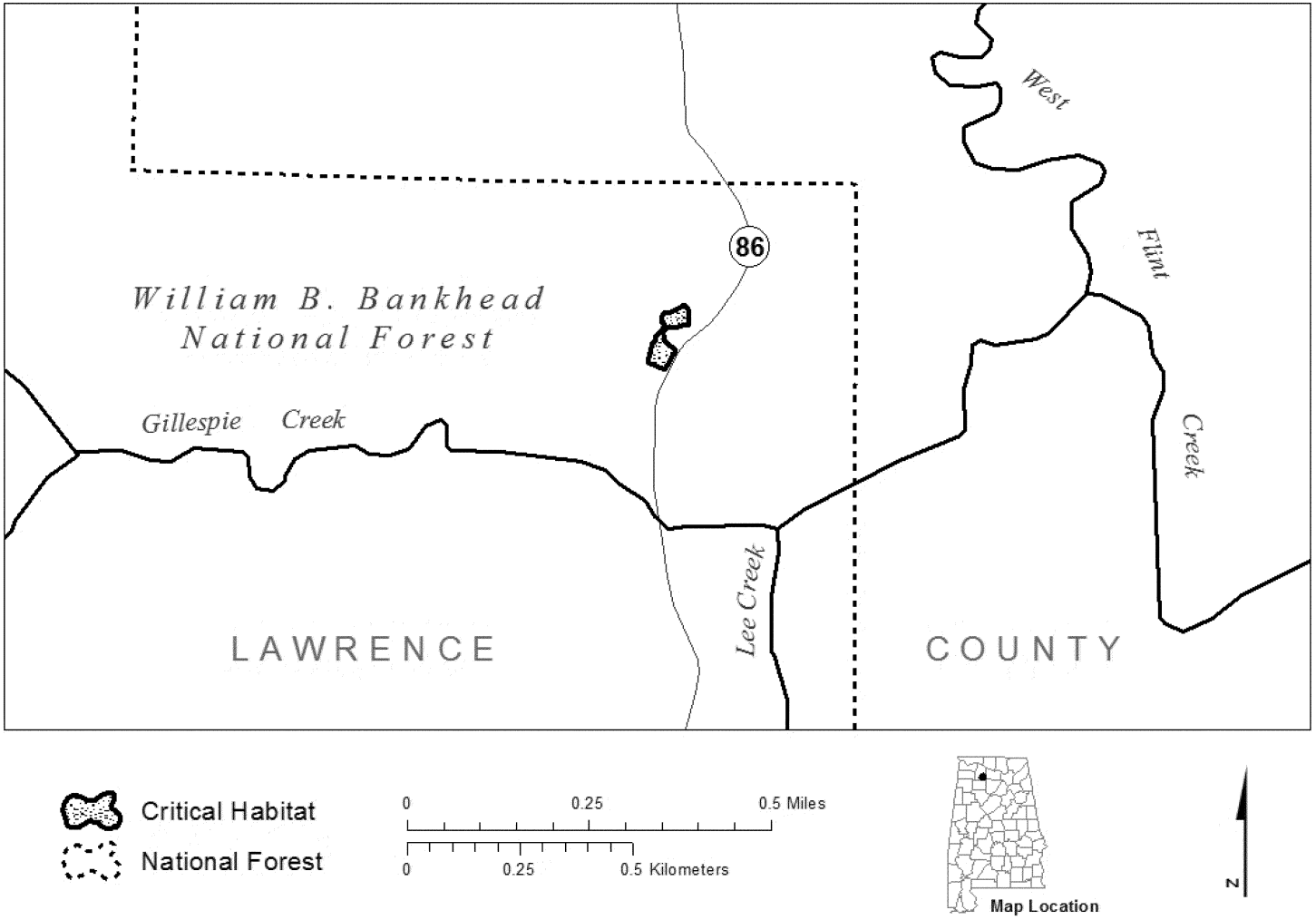
(6) Unit 1: Bluebird Glades, Lawrence County, Alabama. Map of Units 1 and 2 follows:



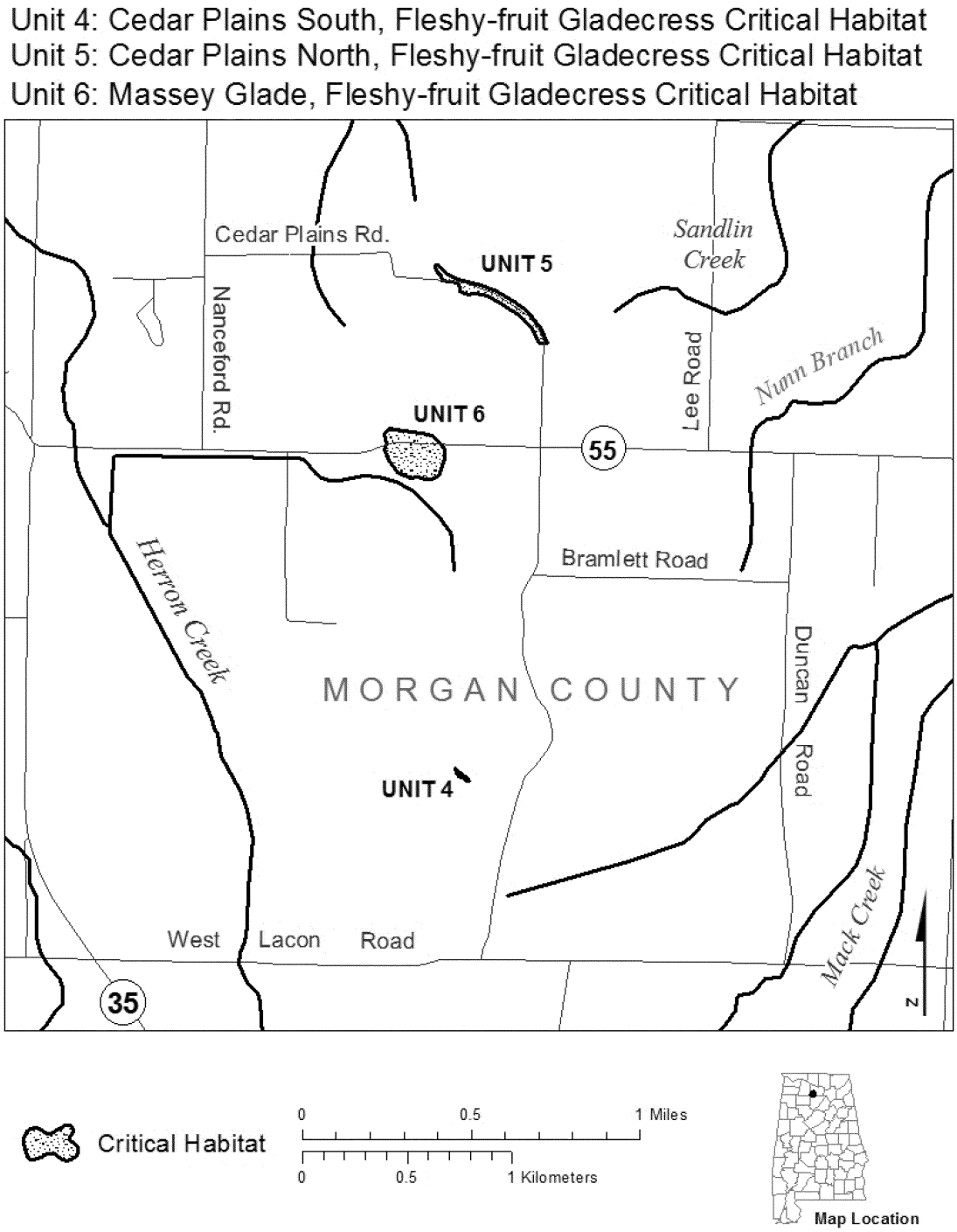
(7) Unit 2: Stover Branch Glades, Lawrence County, Alabama. Map of Unit 2 is provided at paragraph (6) of this entry.

(8) Unit 3: Indian Tomb Hollow Glade, Lawrence County, Alabama. Map of Unit 3 follows:

Unit 3: Indian Tomb Hollow Glade, Fleshy-fruit Gladecress Critical Habitat



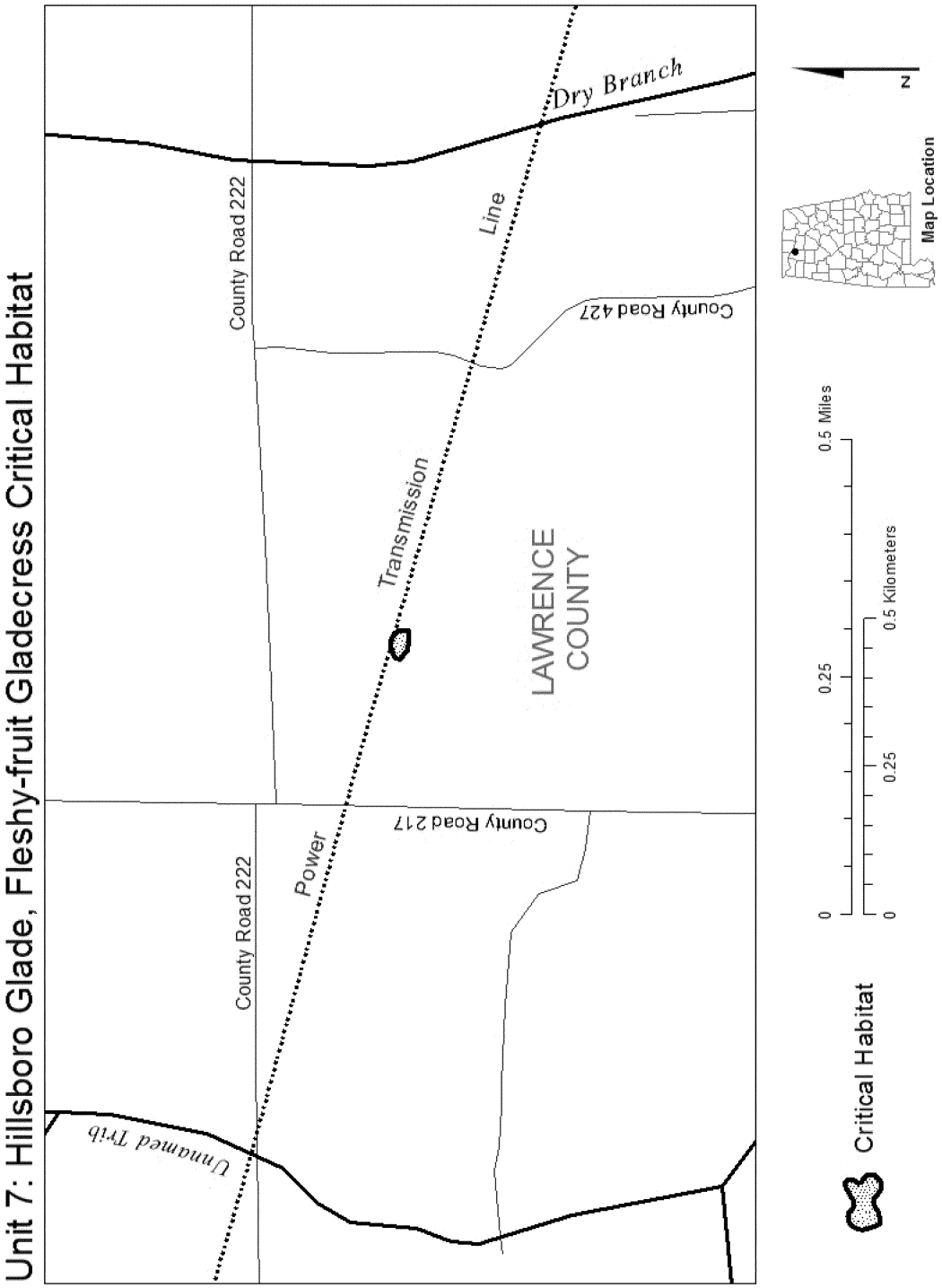
(9) Unit 4: Cedar Plains South, Morgan County, Alabama. Map of Units 4, 5, and 6 follows:



(10) Unit 5: Cedar Plains North, Morgan County, Alabama. Map of Unit 5 is provided at paragraph (9) of this entry.

(11) Unit 6: Massey Glade, Morgan County, Alabama. Map of Unit 6 is provided at paragraph (9) of this entry.

(12) Unit 7: Hillsboro Glade, Lawrence County, Alabama. Map of Unit 7 follows:



* * * * *

Family Brassicaceae: *Physaria globosa* (Short's bladderpod)

(1) Critical habitat units are depicted for Posey County, Indiana; Clark, Franklin, and Woodford Counties, Kentucky; and Cheatham, Davidson, Dickson, Jackson, Montgomery, Smith, and Trousdale Counties, Tennessee, on the maps below.

(2) Within these areas, the primary constituent elements of the physical or biological features essential to the conservation of Short's bladderpod consist of three components:

(i) Bedrock formations and outcrops of calcareous limestone, sometimes with interbedded shale or siltstone, in close proximity to the mainstem or tributaries of the Kentucky and Cumberland rivers. These outcrop sites or areas of suitable bedrock geology should be located on

steeply sloped hillsides or bluffs, typically on south- to west-facing aspects.

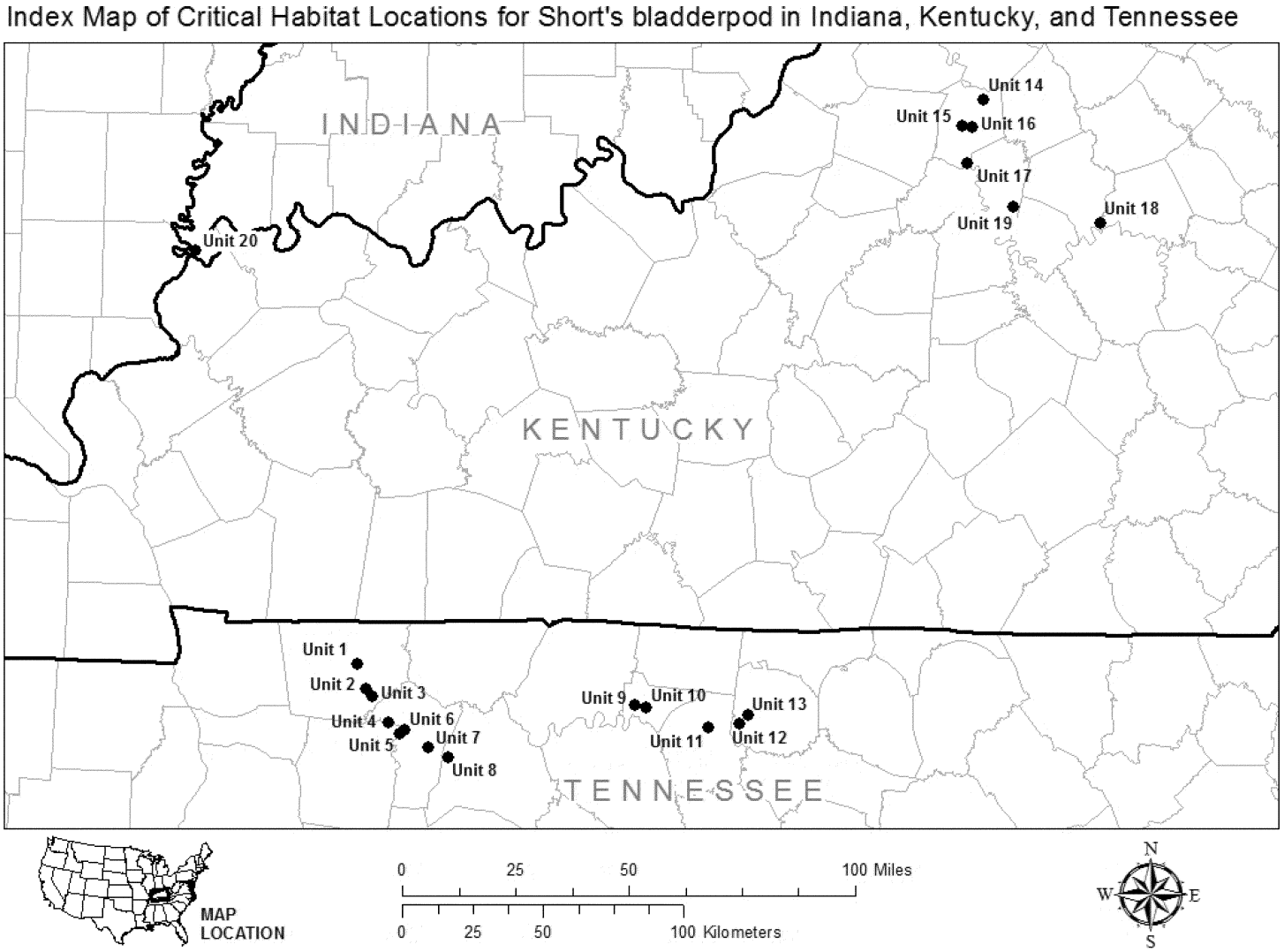
(ii) Shallow or rocky, well-drained soils formed from the weathering of underlying calcareous bedrock formations, which are undisturbed or subjected to minimal disturbance, so as to retain habitat for ground-nesting pollinators and potential for maintenance of a soil seed bank.

(iii) Forest communities with low levels of canopy closure or openings in the canopy to provide adequate sunlight for individual and population growth. Invasive, nonnative plants must be absent or present in sufficiently low numbers not to inhibit growth or reproduction of Short's bladderpod.

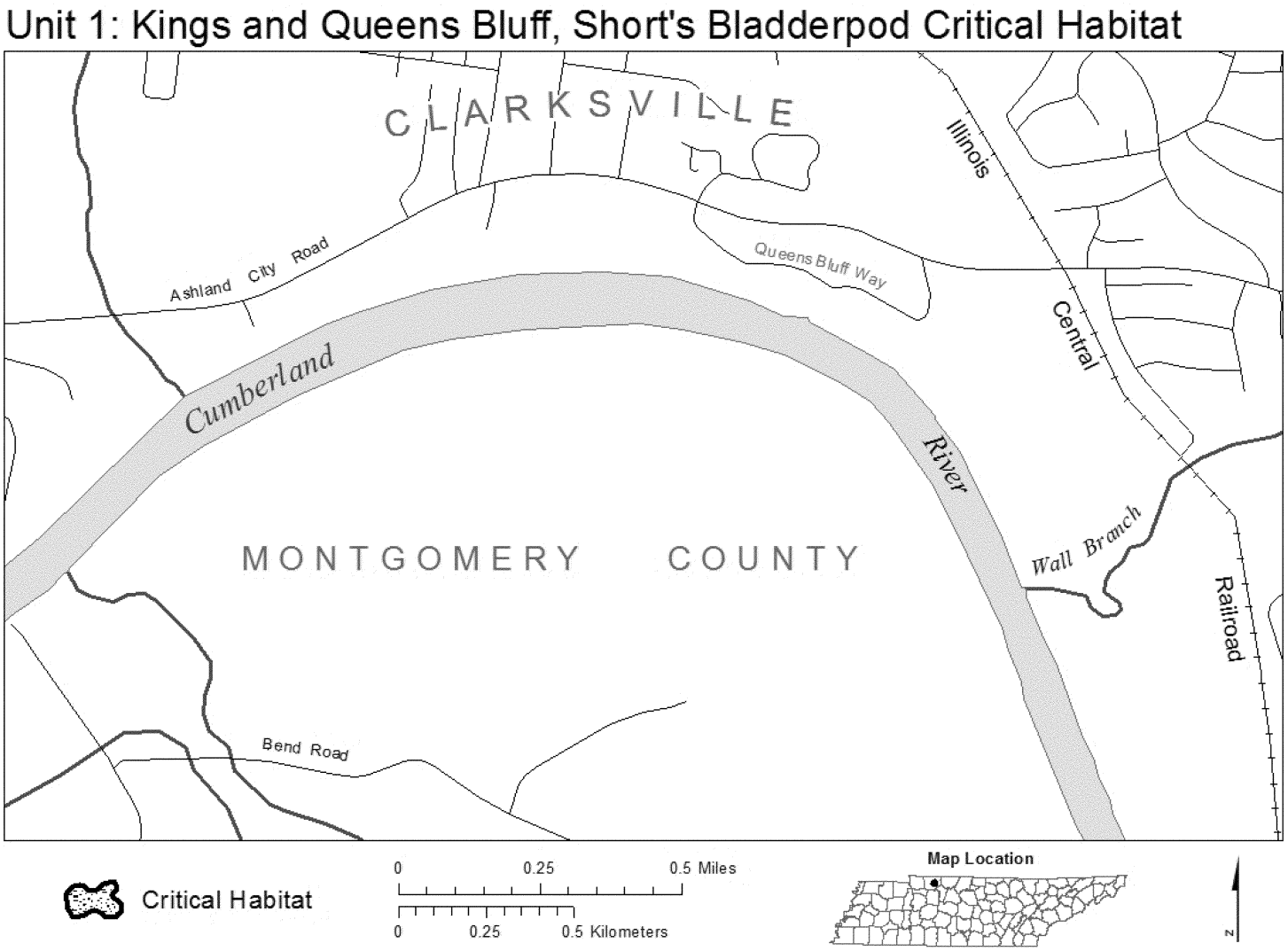
(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on September 25, 2014.

(4) *Critical habitat map units.* Data layers defining map units were created on a base of Bing Maps digital aerial photography supplied by the Harris Corporation, Earthstar Geographics LLC, and the Microsoft Corporation. Critical habitat units were then mapped using the USA Contiguous Albers Equal Area Projection with a NAD 83 datum. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the Service's Internet site at *http://www.fws.gov/cookeville*, at *http://www.regulations.gov* at Docket No. FWS–R4–ES–2013–0086, and at the field office responsible for this designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

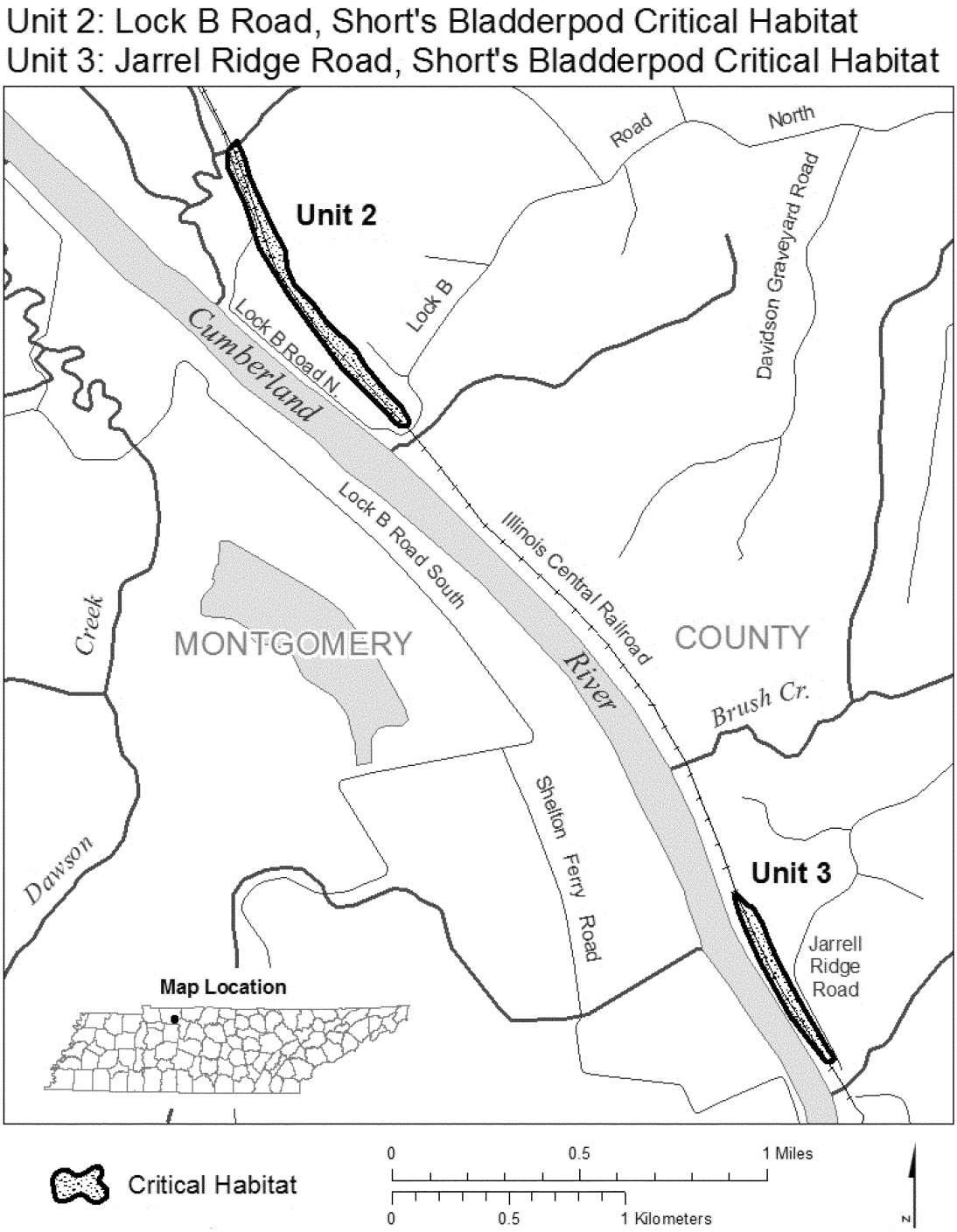
(5) Index map follows:



(6) Unit 1: Kings and Queens Bluff, Montgomery County, Tennessee. Map of Unit 1 follows:

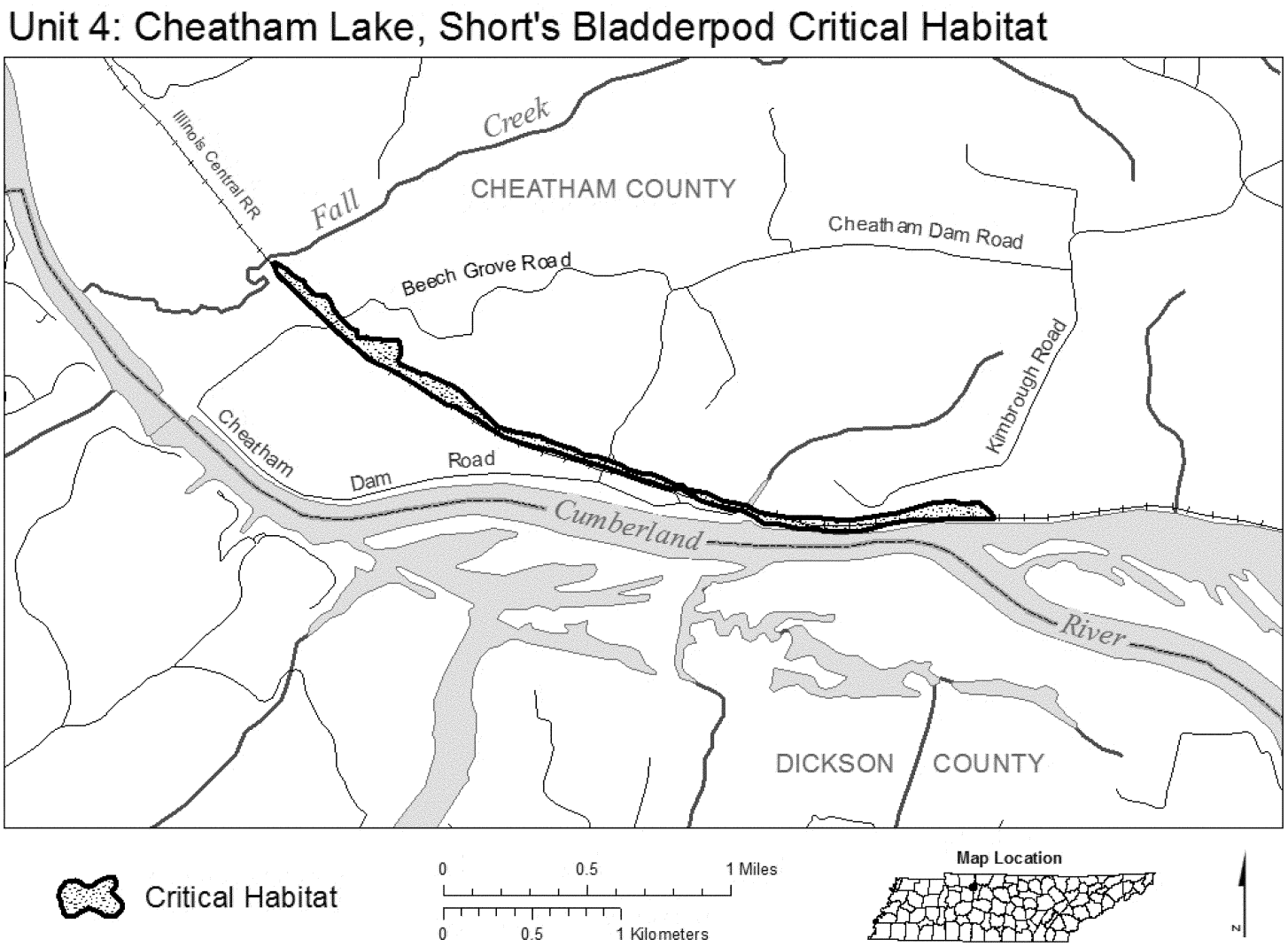


(7) Unit 2: Lock B Road, Montgomery County, Tennessee. Map of Units 2 and 3 follows:

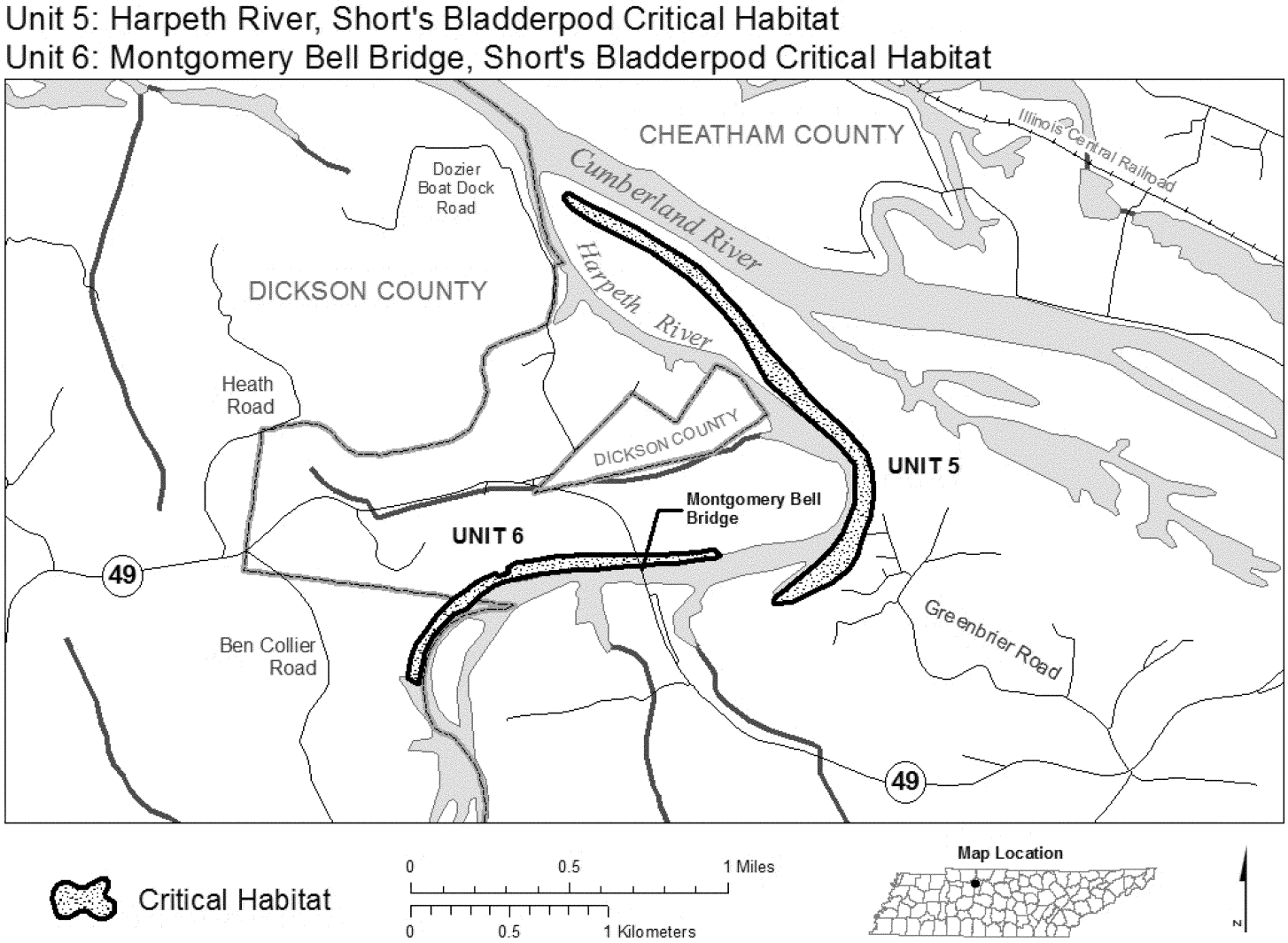


(8) Unit 3: Jarrel Ridge Road, Montgomery County, Tennessee. Map of Unit 3 is provided at paragraph (7) of this entry.

(9) Unit 4: Cheatham Lake, Cheatham County, Tennessee. Map of Unit 4 follows:



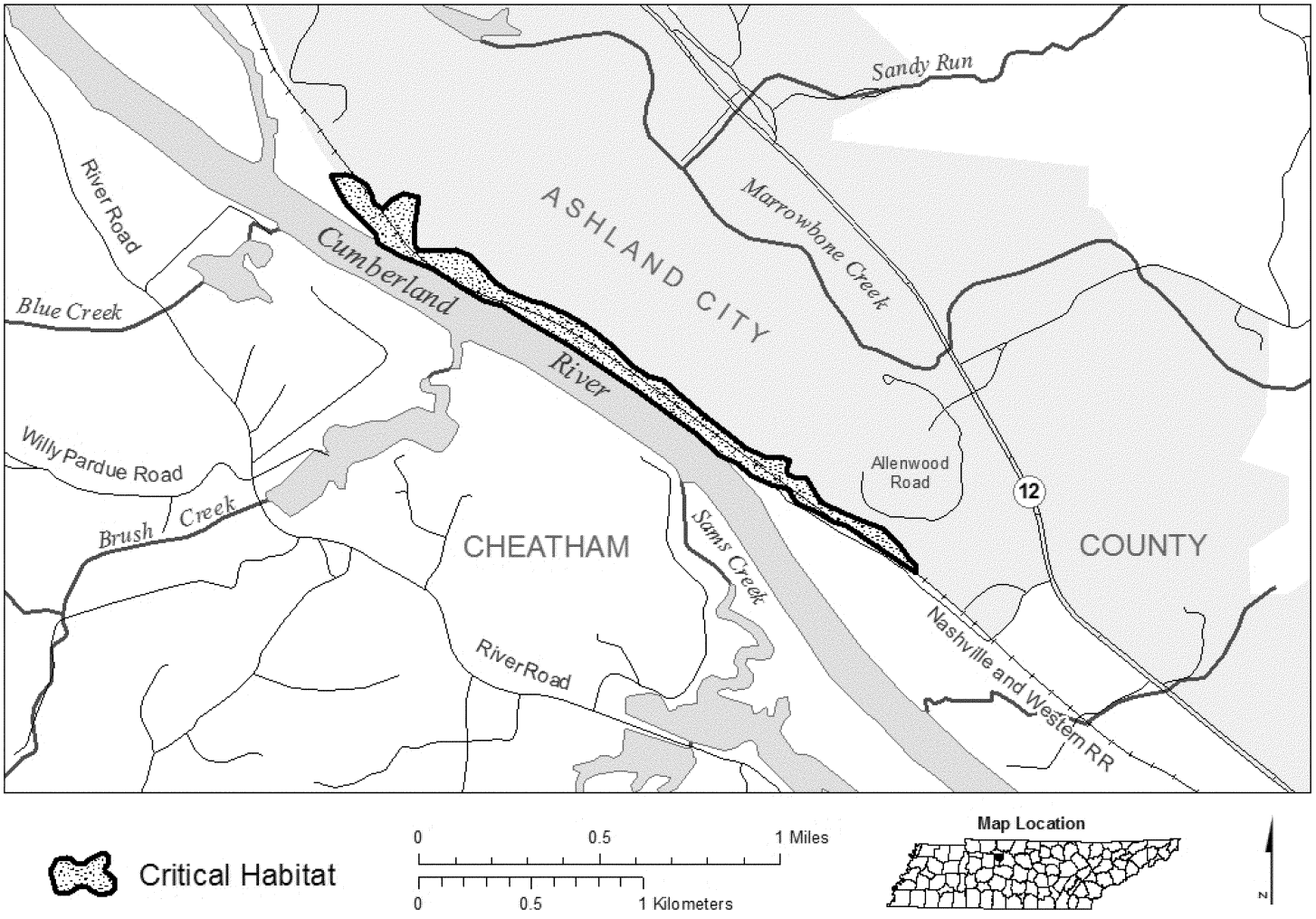
(10) Unit 5: Harpeth River, Cheatham County, Tennessee. Map of Units 5 and 6 follows:



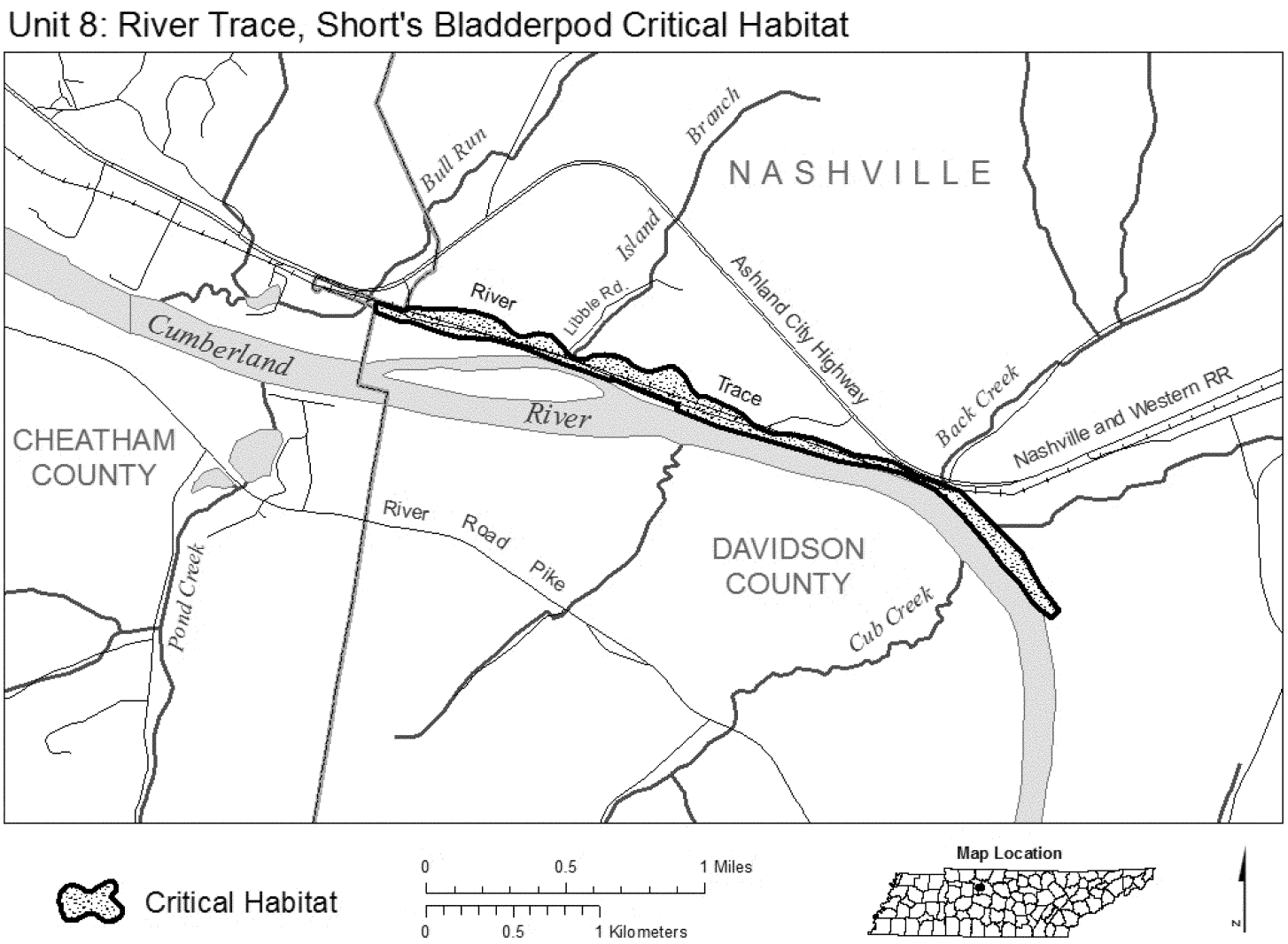
(11) Unit 6: Montgomery Bell Bridge, Cheatham and Dickson Counties, Tennessee. Map of Unit 6 is provided at paragraph (10) of this entry.

(12) Unit 7: Nashville and Western Railroad, Cheatham County, Tennessee. Map of Unit 7 follows:

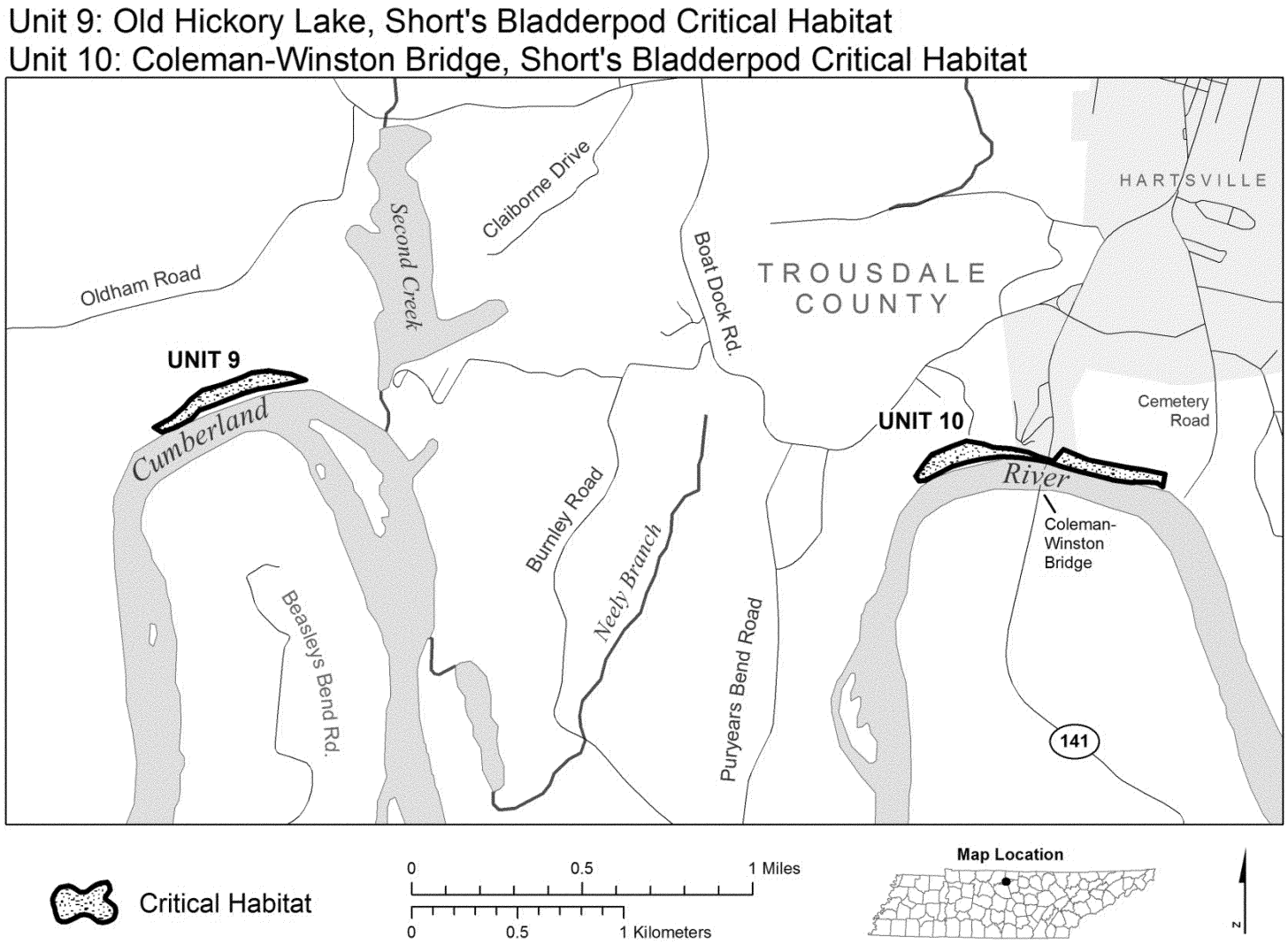
Unit 7: Nashville and Western Railroad, Short's Bladderpod Critical Habitat



(13) Unit 8: River Trace, Cheatham and Davidson Counties, Tennessee. Map of Unit 8 follows:

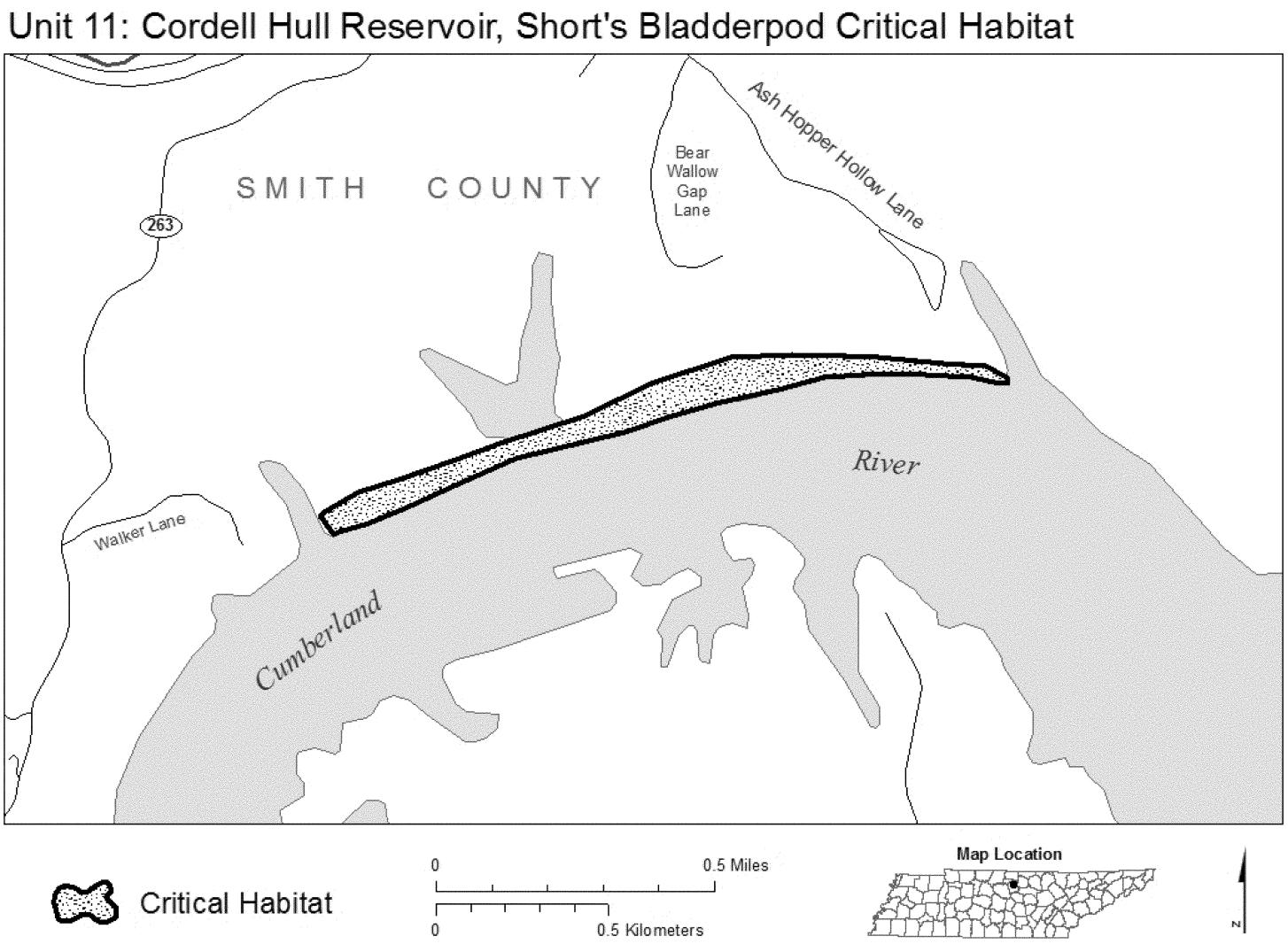


(14) Unit 9: Old Hickory Lake, Trousdale County, Tennessee. Map of Units 9 and 10 follows:

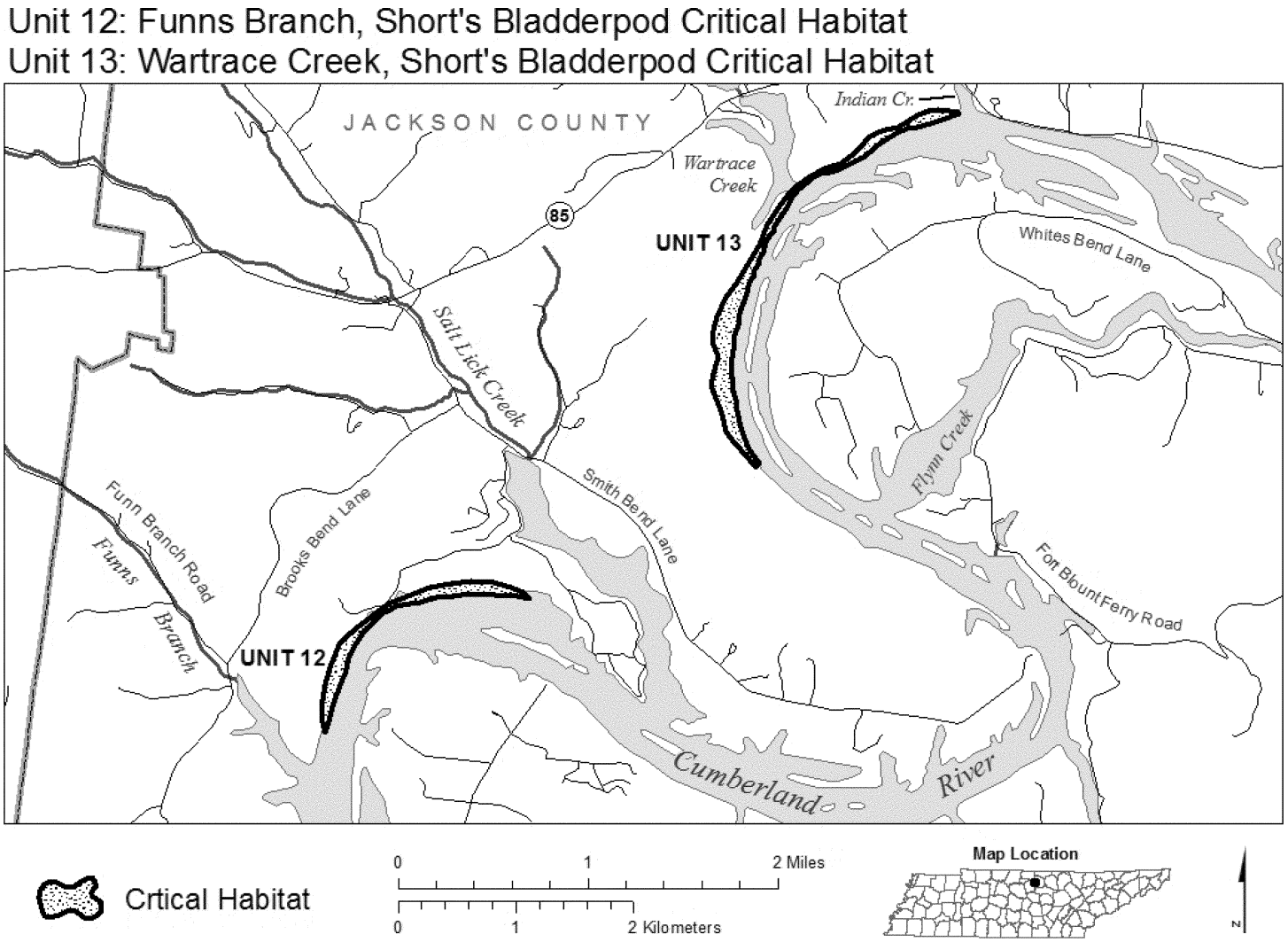


(15) Unit 10: Coleman-Winston Bridge, Trousdale County, Tennessee. Map of Unit 10 is provided at paragraph (14) of this entry.

(16) Unit 11: Cordell Hull Reservoir, Smith County, Tennessee. Map of Unit 11 follows:

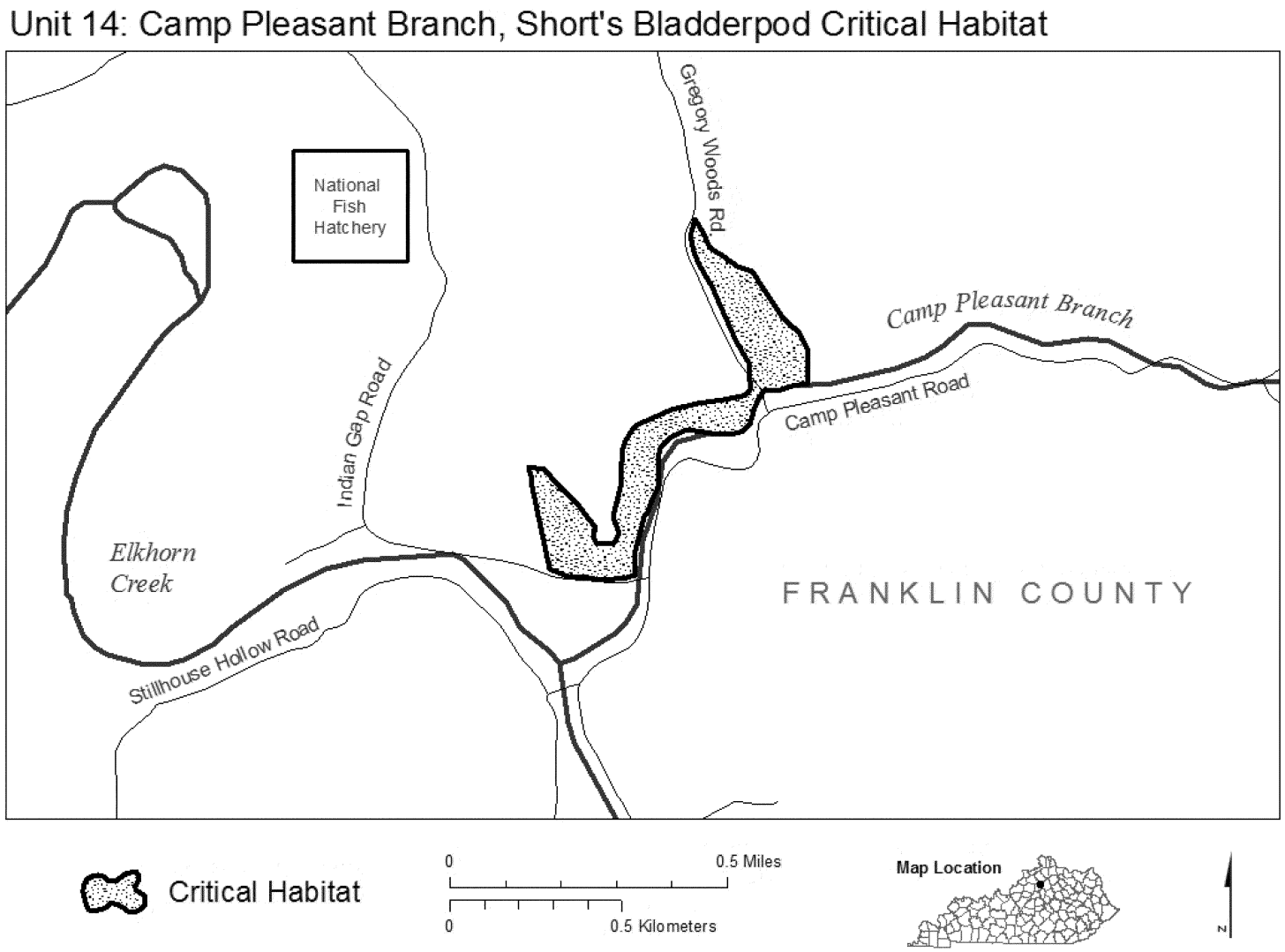


(17) Unit 12: Funns Branch, Jackson County, Tennessee. Map of Units 12 and 13 follows:

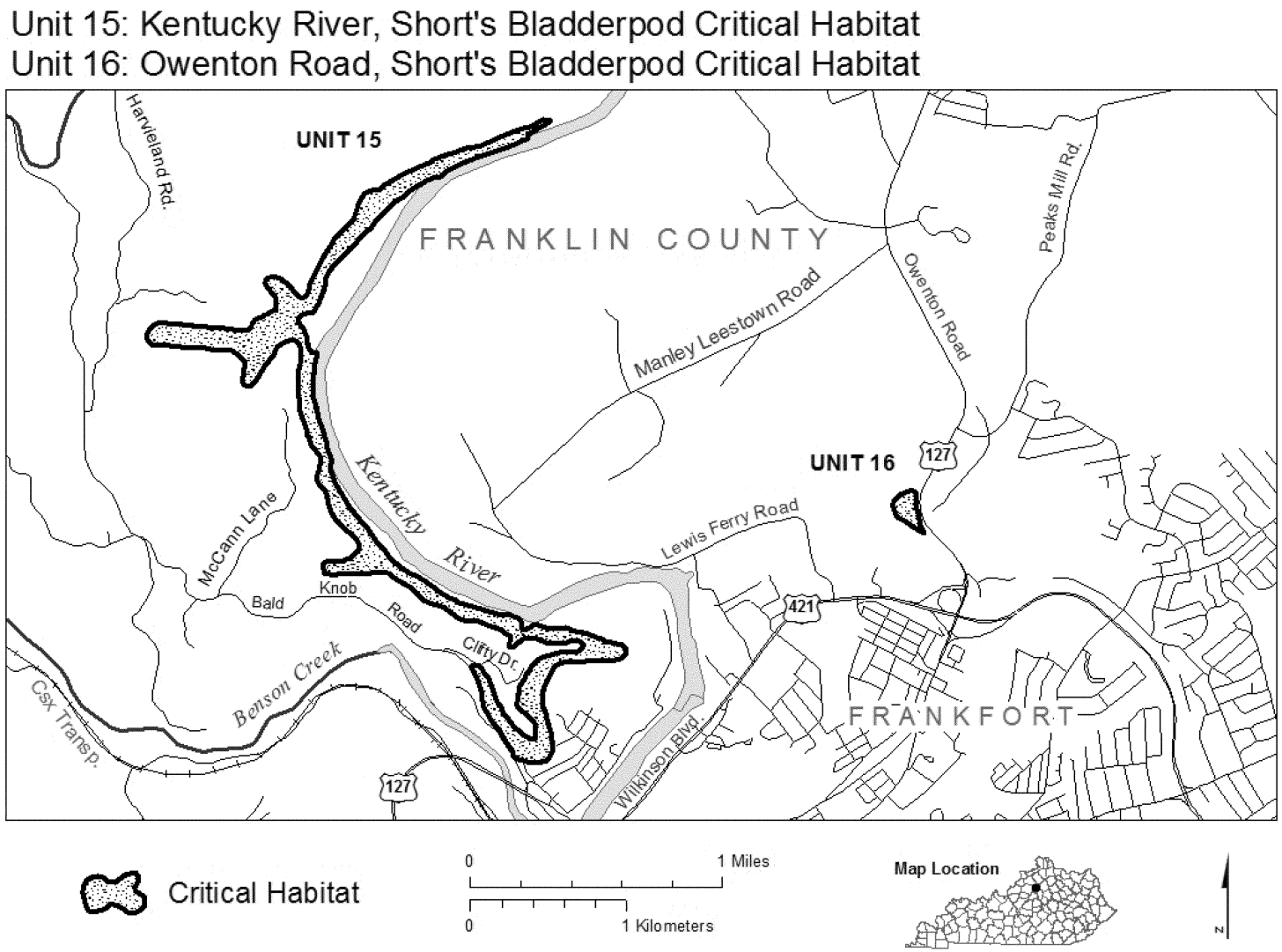


(18) Unit 13: Wartrace Creek, Jackson County, Tennessee. Map of Unit 13 is provided at paragraph (17) of this entry.

(19) Unit 14: Camp Pleasant Branch, Franklin County, Kentucky. Map of Unit 14 follows:

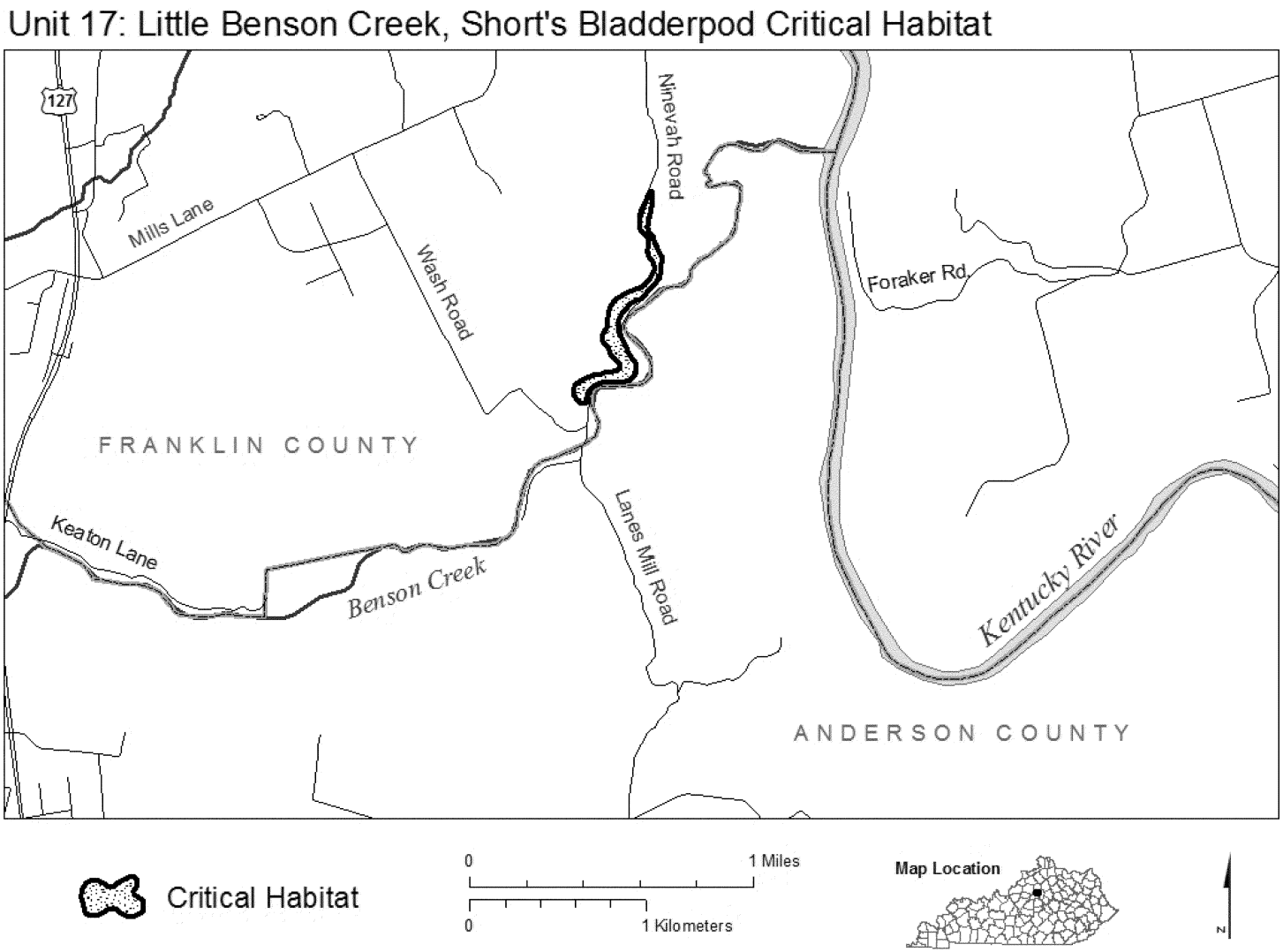


(20) Unit 15: Kentucky River, Franklin County, Kentucky. Map of Units 15 and 16 follows:

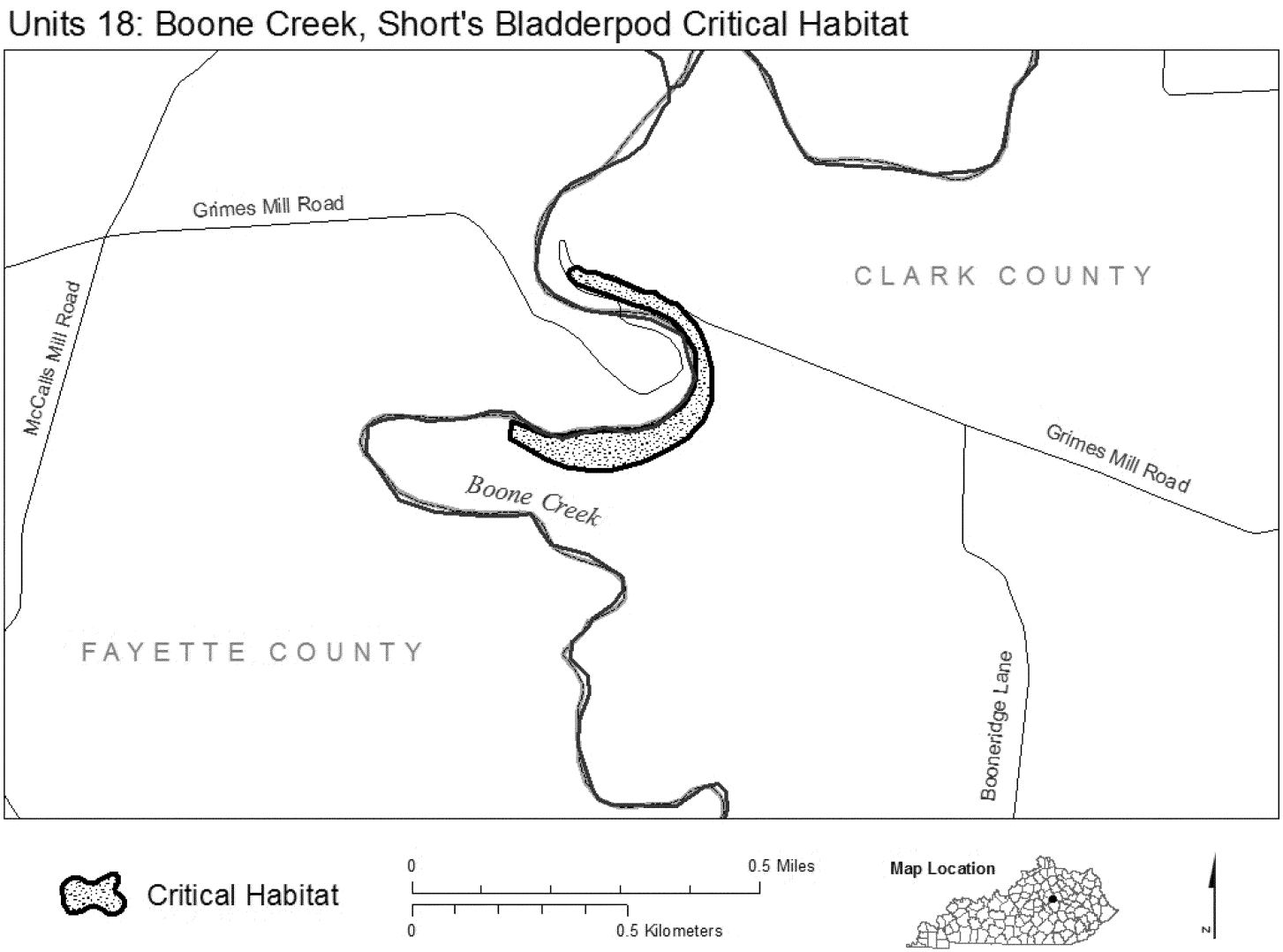


(21) Unit 16: Owenton Road, Franklin County, Kentucky. Map of Unit 16 is provided at paragraph (20) of this entry.

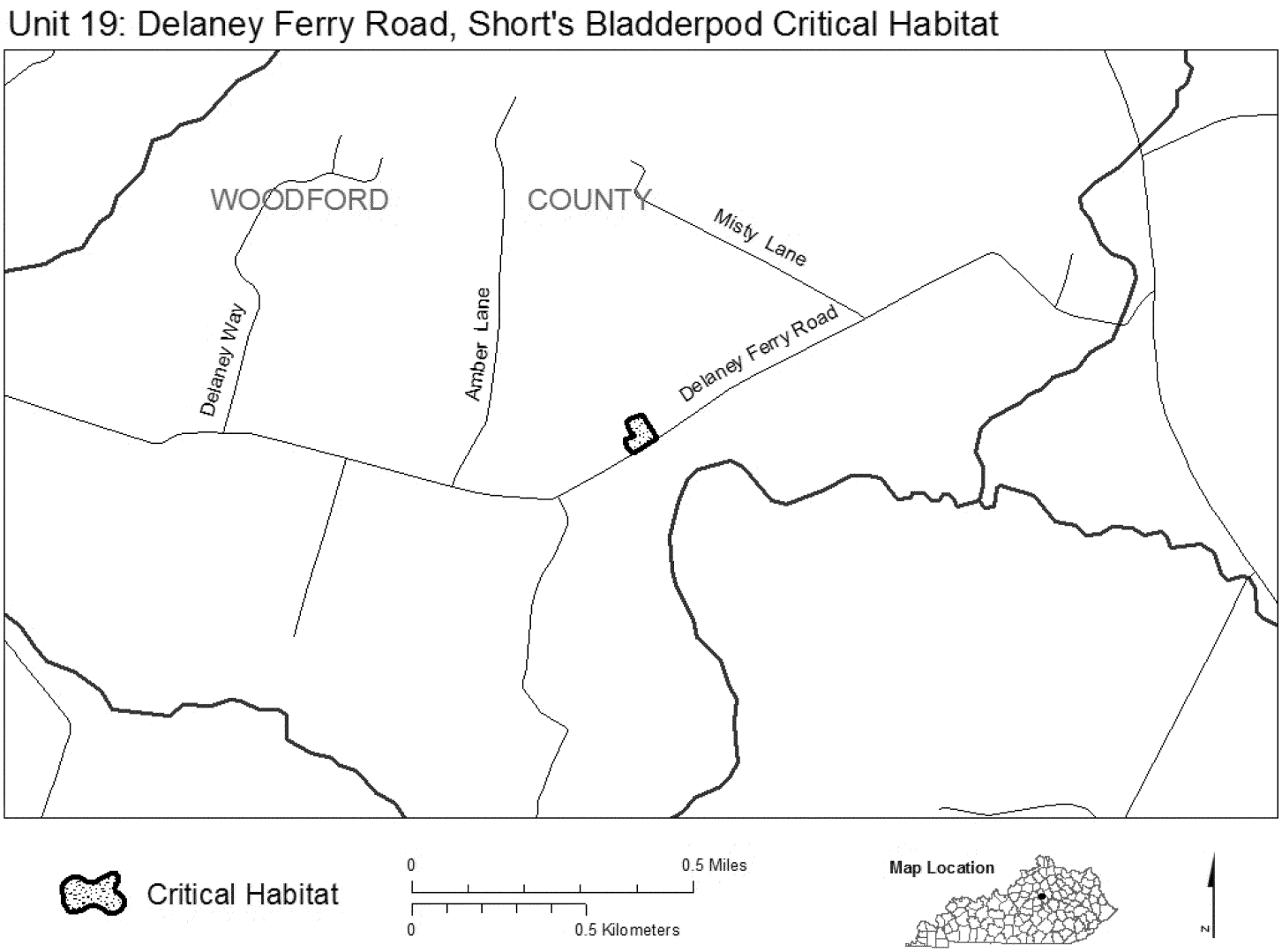
(22) Unit 17: Little Benson Creek, Franklin County, Kentucky. Map of Unit 17 follows:



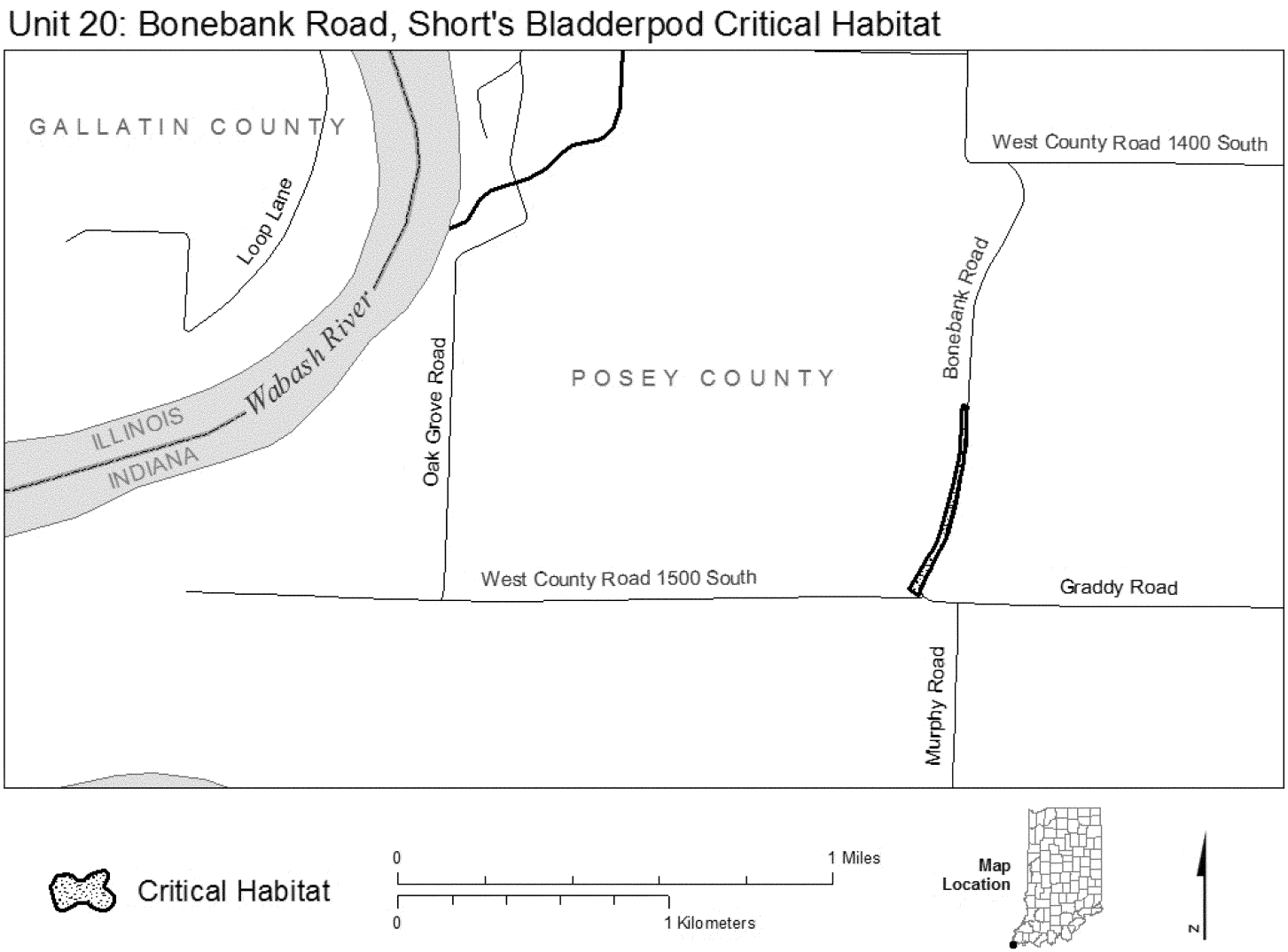
(23) Unit 18: Boone Creek, Clark County, Kentucky. Map of Unit 18 follows:



(24) Unit 19: Delaney Ferry Road, Woodford County, Kentucky. Map of Unit 19 follows:



(25) Unit 20: Bonebank Road, Posey County, Indiana. Map of Unit 20 follows:



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Dated: August 8, 2014.

Rachel Jacobson,

Principal Deputy Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. 2014–19558 Filed 8–25–14; 8:45 am]

BILLING CODE 4310–55–C