evaluation roles and responsibilities to those individuals responsible for preparing interim and final performance evaluations (*e.g.,* contracting officer representatives and program managers). If agency procedures do not specify the individuals responsible for past performance evaluation duties, the contracting officer will remain responsible for this function. Those individuals identified may obtain information for the evaluation of performance from the program office, administrative contracting office, audit office, end users of the product or service, and any other technical or business advisor, as appropriate. Interim evaluations shall be prepared on an annual basis, in accordance with agency procedures.

(b)(1) The evaluation report should reflect how the contractor performed. The report should include clear relevant information that accurately depicts the contractor's performance, and be based on objective facts supported by program and contract performance data. The evaluations should be tailored to the contract type, size, content, and complexity of the contractual requirements.

(2) Evaluation factors for each assessment shall include, at a minimum, the following:

(i) Technical or Quality.

(ii) Cost Control (as applicable).

(iii) Schedule/Timeliness.

(iv) Management or Business Relations.

(v) Small Business Subcontracting (as applicable).

(3) These evaluation factors, including subfactors, may be tailored, however, each factor and subfactor shall be evaluated and supporting narrative provided.

(4) Each evaluation factor, as listed in paragraph (b)(2) of this section, shall be rated in accordance with a five scale rating system (*e.g.,* exceptional, very good, satisfactory, marginal, and unsatisfactory). Rating definitions shall reflect those contained in the CPARS Policy Guide available at *http://www.cpars.gov/.*

(c)(1) When the contract provides for incentive fees, the incentive-fee contract performance evaluation shall be entered into CPARS. (See 16.401(f).)

(2) When the contract provides for award fee, the award fee-contract performance adjectival rating as described in 16.401(e)(3) shall be entered into CPARS.

(d) Agency evaluations of contractor performance, including both negative and positive evaluations, prepared under this subpart shall be provided to the contractor as soon as practicable after completion of the evaluation.

(e) Agencies shall require—

(1) Performance issues be documented promptly during contract performance to ensure critical details are included in the evaluation;

(2) The award fee determination, if required, align with the contractor's performance and be reflected in the evaluation;

(3) Timely assessments and quality data (see the quality standards in the CPARS Policy Guide at *http://www.cpars.gov/*) in the contractors past performance evaluation; and

(4) Frequent assessment (*e.g.,* monthly or quarterly) of agency compliance with the reporting requirements in 42.1502, so agencies can readily identify delinquent past performance reports and monitor their reports for quality control.

(f) Agencies shall prepare and submit all past performance reports electronically into the CPARS at *http://www.cpars.gov/.* These reports are transmitted to the Past Performance Information Retrieval System (PPIRS) at *http://www.ppirs.gov.* Past performance reports for classified contracts and special access programs shall not be reported in CPARS, but will be reported as stated in this subpart and in accordance with agency procedures. Agencies shall ensure that appropriate management and technical controls are in place to ensure that only authorized personnel have access to the data and the information safeguarded in accordance with 42.1503(b).

(g) Agencies shall use the past performance information in PPIRS that is within the last three years (six for construction and architect-engineer contracts) and information contained in the Federal Awardee Performance and Integrity Information System (FAPIIS), *e.g.,* termination for default or cause.

(h) *Other contractor performance information.* (1) Agencies shall ensure information is reported in the FAPIIS module of CPARS within 3 working days after a contracting officer—

(2) Agencies shall establish CPARS focal points who will register users to report data into the FAPIIS module of CPARS (available at *http://www.cpars.gov/,* then select FAPIIS).

(3) The primary duties of the CPARS focal point is to administer CPARS and FAPIIS access. Agencies must also establish PPIRS group managers. The primary duties of the PPIRS group managers are to grant or deny access to PPIRS. The CPARS Reference Material, on the Web site, includes reporting instructions.

PART 49—TERMINATION OF CONTRACTS

49.402–8 [Amended]

10. Amend section 49.402–8 by removing ''42.1503(f)'' and adding ''42.1503(h)'' in its place.

[FR Doc. 2011–16169 Filed 6–27–11; 8:45 am]

BILLING CODE 6820–EP–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R4–ES–2009–0020; MO 92210–0–0008–B]

Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition To List *Castanea pumila* var. *ozarkensis* as Threatened or Endangered

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of 12-month petition finding.

SUMMARY: We, the U.S. Fish and Wildlife Service, announce a 12-month finding on a petition to list *Castanea pumila* var. *ozarkensis* (Ozark chinquapin), a tree, as threatened or endangered under the Endangered Species Act of 1973, as amended (Act). After review of all available scientific and commercial information, we find that listing Ozark chinquapin is not warranted at this time. However, we ask the public to submit to us any new information that becomes available concerning the threats to Ozark chinquapin or its habitat at any time.

DATES: The finding announced in this document was made on June 28, 2011.

ADDRESSES: This finding is available on the Internet at *http://www.regulations.gov* at Docket Number [FWS–R4–ES–2009–0020]. Supporting documentation we used in preparing this finding is available for public inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, Arkansas Ecological Services Field Office, 110 South Amity Road, Suite 300, Conway, AR 72032. Please submit any new information, materials, comments, or questions concerning this finding to the above address.

FOR FURTHER INFORMATION CONTACT: Jim Boggs, Field Supervisor, Arkansas Ecological Services Field Office, 110 South Amity Road, Suite 300, Conway, AR 72032 (see **ADDRESSES**); by telephone (501–513–4470) or by facsimile (501–

513–4480). If you use a telecommunications device for the deaf (TDD), please call the Federal Information Relay Service (FIRS) at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Background

Section 4(b)(3)(B) of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*), requires that, for any petition to revise the Federal Lists of Endangered and Threatened Wildlife and Plants that contains substantial scientific or commercial information that listing the species may be warranted, we make a finding within 12 months of the date of receipt of the petition. In this finding, we will determine that the petitioned action is: (1) Not warranted, (2) warranted, or (3) warranted, but the immediate proposal of a regulation implementing the petitioned action is precluded by other pending proposals to determine whether species are threatened or endangered, and expeditious progress is being made to add or remove qualified species from the Federal Lists of Endangered and Threatened Wildlife and Plants. Section 4(b)(3)(C) of the Act requires that we treat a petition for which the requested action is found to be warranted but precluded as though resubmitted on the date of such finding, that is, requiring a subsequent finding to be made within 12 months. We must publish these 12-month findings in the **Federal Register**.

Previous Federal Actions

On July 1, 1975 (40 FR 27823), *Castanea pumila* var. *ozarkensis* (Ozark chinquapin; see Taxonomy and Species Description section) was included as one of the 3,000 plant species under status review. It was proposed or reviewed by the Service for listing as an endangered species under the Act in 1976 (June 16, 1976, 41 FR 24524). However, we did not finalize that proposed rule because of subsequent amendments to the Act (U.S. Fish and Wildlife Service 1988). Ozark chinquapin became a category 2 candidate on December 15, 1980 (45 FR 82480). It was again advertised as a category 2 candidate on September 27, 1985 (50 FR 39526). The status changed on February 21, 1990 (55 FR 6184), to a category 1 candidate species. On September 30, 1993 (58 FR 51144), the status changed back to a category 2 candidate species for listing until the category 2 list was eliminated in 1996 (61 FR 7596). A category 2 species was a species for which we had information indicating that a proposal to list as threatened or endangered under the Act may be appropriate but for which additional information on biological viability and threat was needed to support the preparation of a proposed rule.

On January 6, 2004, we received a petition, dated December 28, 2003, from Mr. Joe Glenn of Hodgen, OK, requesting that the Ozark chinquapin be listed under the Act as a candidate species. We interpreted the request to mean threatened or endangered. The petition clearly identified itself as such and included the requisite identification information for the petitioner, as required by the Code of Federal Regulations (CFR) at 50 CFR 424.14(a). The petition contained supporting information regarding the species' ecology, threats to the species, and survey and occurrence data for a portion of the Ouachita Highlands in southeastern Oklahoma. We acknowledged receipt of the petition in a February 2, 2004, letter to Mr. Glenn. In that letter, we advised the petitioner that, due to a significant number of court orders and settlement agreements in Fiscal Year 2004, we would not be able to address the petitioned request at that time.

On June 1, 2010, we published a 90-day finding that the petition presented substantial information that listing the Ozark chinquapin may be warranted and initiated a status review of the species (75 FR 30313). This notice constitutes the 12-month finding on the December 28, 2003, petition to list Ozark chinquapin as threatened or endangered.

Species Information

Taxonomy and Species Description

Castanea pumila var. *ozarkensis* (Ozark chinquapin) was first identified as a separate species (*Castanea ozarkensis*) by Ashe (1923, p. 60). Ashe described the range of the species as ''north of the Arkansas River and westward from Center Ridge, Arkansas, northward to southwestern Missouri and westward to the Valley of the White River'' (Tucker 1983, p. 2). Ashe (1923, p. 361) also described a second species, *Castanea arkansana,* in Arkansas. Ashe (1924, p. 45, in Tucker 1983) reduced *Castanea arkansana* to varietal status as *Castanea ozarkensis* var. *arkansana.* Little (1953, p. 2, in Tucker 1983) reduced *Castanea arkansana* to synonymy with *Castanea ozarkensis.* Tucker (1975, p. 2, in Tucker 1983) reduced *Castanea ozarkensis* to a variety of the more common *Castanea pumila* (*Castanea pumila* var. *ozarkensis* (Ashe) Tucker) and concurred with Little's (1953) treatment of *Castanea arkansana.* Johnson (1988, p. 43) published a revision of the *Castanea* section (sect.) with *Balanocastanion* concurring as Tucker's reduction of *Castanea ozarkensis* to a variety of *Castanea pumila.* Tucker's reduction is further supported in Smith's *Keys to the Flora of Arkansas* (1994, p. 54), as well as in current scientific literature that references the tree.

Ozark chinquapin is a tree in the beech family (Fagaceae). Ozark chinquapin has leaves 10 to 25 centimeters (cm) (4 to 10 inches (in)) long, broadly lanceolate (tapering to a point at the apex and sometimes at the base) to elliptical, with coarse teeth that are 2.5 to 9 millimeters (mm) (0.1 to 0.35 in) long with whitish or yellowish-cream stellate (star-shaped) hairs on the lower surfaces. The bark is light brown to reddish brown or grayish, with broad flat ridges that break into loose plate-like scales. The fruits are subglobose (round but not perfectly spherical) to ovoid nuts up to approximately 20 mm (0.8 in) long, enclosed in a spiny burr. Burrs are solitary or in groups of two or three. The subspecies is distinguished from *Castanea pumila* var. *pumila* (Allegheny chinquapin) by the larger leaf size, larger teeth, and larger fruit, which also have hairs (Steyermark 1963, p. 531; Smith 1994, p. 54).

Ozark chinquapin was historically a medium-sized tree species that once grew to 20 meters (m) (65 feet (ft)), although usually much shorter, but now, as a result of chestnut blight, it rarely reaches heights of more than 9 m (30 ft). Trunks develop from stump sprouts as well as from seeds, but in recent years, new growth is generally from sprouts. Trees reaching the age to produce fruit (4 to 5 years; Paillet 1993, p. 262) are still common (Arkansas Natural Heritage Commission (ANHC) 2010, personal communication (pers. comm.)). Ecologically the tree has taken on the character of an understory shrub similar to *Castanea dentata* (American chestnut) (Paillet 2010, pers. comm.) due to the fungus parasite (*Cryphonectria parasitica*) that is responsible for the chestnut blight disease, which has adversely affected many *Castanea* spp. populations in the United States (Tucker 1983, pp. 8–9; Steyermark 1963, p. 531). However, Paillet (1991, p. 10; 1993, pp. 261–262) noted an area on the Ozark National Forest that was cut 4 to 5 years previously that was full of broad chinquapin crowns, and the ground littered with burrs from the summer's nut crop. Ozark chinquapin differs in its growth and ability to put out an earlier seed (nut) crop compared to *Castanea dentata,* and appears to allow for an abundant but short-lived pulse of seed germination in the decade following opening of the forest canopy due to disturbance (Paillet 2010, pers. comm.).

Habitat

Ozark chinquapin has been described as historically common in thin woods, edges of woods, and mid-successional woods (Tucker 1983, pp. 8–9). Turner (1935, p. 419) describes Ozark chinquapin as ''fairly common'' on north, east, and west facing slopes, ravines, gullies, or narrow valleys, and less frequently in the deep, narrow south-facing gullies or ravines in the white oak, red oak, red maple, hard maple hickory association of northwest Arkansas. It historically occupied canopy and subcanopy positions on a variety of habitats, including dry upland (the higher ground of a region or district; an elevated region) deciduous or mixed hardwood-pine communities on acid soils of ridge-tops, upper slopes adjacent to ravines and gorges, and the tops of sandstone bluffs (C. McDonald 1987, pers. comm.). It is well documented that fire frequency had a major role in shaping landscape and regional vegetation patterns in the Interior Highlands (Batek *et al.* 1999, pp. 407–409; Spetich 2004, pp. 21–28, 49–50, 65–69; Guyette and Spetich 2002, pp. 466–473; Guyette and Spetich 2003, pp. 463–474; Bidwell *et al.* undated, pp. 2877–2–2877–12; Elliot and Vose 2010, pp. 49–66). Ozark chinquapin is fire tolerant, but sprouts may be damaged by fire (Kral 1983, p. 287).

Ozark chinquapin occupy sandstone areas in Alabama, but occupy limestone, sandstone, chert rock, and possibly a combination in the Interior Highlands of Arkansas, Missouri, and Oklahoma (Johnson 1988, p. 43). Associated trees in these habitats include *Quercus alba* (white oak), *Quercus stellata* (post oak), *Quercus rubra* (northern red oak), *Nyssa sylvatica* (black gum), *Pinus echinata* (short-leaf pine), *Morus rubra* (mulberry), *Carya* spp. (hickories), *Ulmus americana* (American elm), and *Ostrya virginiana* (ironwood) (Steyermark 1963, p. 531; G. Tucker 1976, pers. comm.). Soil conditions typically are acid and sandstone-derived, and soil moisture conditions vary from mesic (drains well but retains water) to dry; shade is variable (G. Tucker 1976, pers. comm.; C. McDonald 1987, pers. comm.).

Faber-Langendoen (2001, pp. 444, 446, and 449) describe three forest types that Ozark chinquapin is associated with in the Interior Highlands. These include: (1) Short-leaf pine, white oak, *Schizachyrium scoparium* (little bluestem) woodland, (2) *Pinus echinata* (shortleaf pine), *Quercus velutina* (black oak), post oak, *Vaccinium* spp. (blueberry species) forest, (3) white oak, northern red oak, *Acer saccharum* (sugar maple), *Carya cordiformis* (bitternut hickory), and *Lindera benzoin* (northern spicebush) forest.

The first of these forest types is reported from Missouri and Arkansas, where it is known from the Ozark and Ouachita Mountains, and may extend into Oklahoma (this forest type is synonymous (the same or similar) with acid bedrock savanna in Missouri and dry mesic slope Woodland (Smith *et al.* 2000 in Faber-Langendoen 2001, p. 444)). It contains an open canopy (woodland), and Ozark chinquapin is reported as comprising a portion of the shrub and sapling strata.

The second of these forest types white oak ranges from eastern Oklahoma to the southwestern corner of Illinois, but may have been widespread prior to excessive harvest of shortleaf pine. It is synonymous with the dry acid bedrock forest in Missouri (Faber-Langendoen 2001, p. 446) and (in part) dry shortleaf pine–oak–hickory forest (Allard 1990 in Faber-Langendoen 2001, p. 446) and dry south slope woodland (Smith *et al.* 2000 in Faber-Langendoen 2001, p. 446). The tree canopy is short, spreading, open, and contains numerous branches; a shortleaf-pine emergent canopy often forms over a shorter canopy of oaks. Ozark chinquapin comprises a portion of the shrub layer in Arkansas, Missouri, and Oklahoma.

The third forest type (little bluestem woodland) is known from the South-Central United States, particularly the Ozark and Ouachita Mountain regions in Arkansas, Missouri, and Oklahoma. It is synonymous with the mesic forest, mesic limestone–dolomite forest, acid bedrock forest (mesic sandstone forest and mesic igneous forest) in Missouri, and mesic oak–hickory forest (Tucker 1989 in Faber-Langendoen 2001, p. 469). The canopy is dominated by oaks, sugar maple, and hickories, while the understory closure varies with moisture status at the site, being more closed under greater moisture conditions. Ozark chinquapin comprises a portion of the shrub layer in moderately well-drained soils.

Distribution

Ozark chinquapin is located throughout the Interior Highlands in Arkansas, Missouri, and Oklahoma (Kartesz 1994; ANHC 2010, pers. comm.; USDA Forest Service (USFS) 2010, pers. comm.; Missouri Department of Conservation 2010, pers. comm.). In Arkansas, it is in 39 counties, represented by thousands of elements of occurrence (known locations of individual(s) based on field observation). In Missouri, it is found in 9 counties, including but not limited to 48 elements of occurrence representing multiple individuals on the Mark Twain National Forest, Big Sugar Creek State Park, and Roaring River State Park. In Oklahoma, the species is in 8 counties.

Ozark chinquapin currently is widespread and abundant within the Interior Highlands of Arkansas, but is less common and widespread within the uplands of southwestern Missouri and eastern Oklahoma. For example, Waterfall and Wallis (1963, p. 14) report Ozark chinquapin occurrence in only three of seven Oklahoma counties (Adair, Cherokee, and Delaware) in the Ozark uplift portion of the Interior Highlands.

Localities with seed-producing trees are common on public and private lands in the Interior Highlands. Based on a detailed reconstruction of Ozark chinquapin in the pre-blight forests of northwest Arkansas, almost none of the original trees survived the arrival of blight circa 1957. Most Ozark chinquapin sprouts form after the blight infestation and represent old seedlings, which may represent an extreme case of a reproductive strategy based on advanced regeneration (Paillet 2010, pers. comm.). Ozark chinquapin populations still occur throughout the tree's historical core distribution in the Interior Highlands.

Herbarium specimens are all that remains to support the existence of Ozark chinquapin in Alabama (in Bibb, Lawrence, Tuscaloosa, Walker, and Winston Counties in the Appalachian Mountains). Data to support the abundance and distribution of Ozark chinquapin in the Appalachian Mountains is lacking, and researchers have been unable to find extant populations in this region. While it is the opinion of tree experts that Ozark chinquapin is the best taxonomic classification (see Taxonomy and Species Description), the Ozark Chinquapin Foundation reports Ozark chinquapin co-occurrence with *Castanea pumila* var. *pumila* in the coastal plain of Louisiana and Mississippi (S. Bost, Ozark Chinquapin Foundation, pers. comm. 2010). The Service, however, has no documentation available to substantiate these records. For the present, according to the best available scientific literature, Ozark chinquapin is best treated as a separate species. The Interior Highlands in Arkansas, Missouri, and Oklahoma contain the only known extant populations of Ozark chinquapin at this time (Johnson 1988, pp. 43–45).

At present, there are thousands of element occurrences in the Interior Highlands. Individual site records commonly report multiple Ozark chinquapin sprout clumps and trees producing fruit. These vary from tens to hundreds of individual sprout clumps at an element occurrence record site (Kartesz 1994; ANHC 2010, pers. comm.; USFS 2010, pers. comm.; Missouri Department of Conservation 2010, pers. comm.).

Summary of Information Pertaining to the Five Factors

Section 4 of the Act (U.S.C. 1533 *et seq.*) and implementing regulations (50 CFR 424) set forth the procedures for adding species to the Federal Lists of Endangered and Threatened Wildlife and Plants. Under section 4(a)(1) of the Act, a species may be determined to be endangered or threatened based on any of the following five factors:

A. The present or threatened destruction, modification, or curtailment of its habitat or range;

B. Overutilization for commercial, recreational, scientific, or educational purposes;

C. Disease or predation;

D. The inadequacy of existing regulatory mechanisms; or

E. Other natural or manmade factors affecting its continued existence.

In making this finding, information pertaining to Ozark chinquapin in relation to the five factors provided in section 4(a)(1) of the Act is discussed below.

In considering what factors might constitute threats to the species, we must look beyond the exposure of the species to a factor to evaluate whether the species may respond to the factor in a way that causes actual effects to the species. If there is exposure to a factor and the species responds negatively, the factor may be a threat and, during the status review, we attempt to determine how significant a threat it is. The threat is significant if it drives, or contributes to, the risk of extinction of the species such that the species may warrant listing as endangered or threatened as those terms are defined in the Act.

Factor A. Present or Threatened Destruction, Modification, or Curtailment of the Species' Habitat or Range

Under Factor A, we evaluated the following threats: Habitat loss and/or fragmentation; and forest composition, structure conversions, and forest and fire management (fire use, fire suppression, and forest silvicultural practices; timber harvest, salvage logging, forest thinning, and forest restoration projects).

Habitat Loss and Fragmentation

Johnson (1988, pp. 41–45) recognized Ozark chinquapin records from the Interior Highlands and Appalachian Mountains. Herbarium specimens are all that remain to support the existence of Ozark chinquapin in Alabama (in five counties in the Appalachian Mountains; Johnson 1988, p. 43). Data to support the abundance and distribution of the Ozark chinquapin in the southern Appalachian Mountains are lacking, and researchers have been unable to find extant populations in this region. While there is support for an Appalachian-Ozarkian floristic (relating to flowers) relationship by other taxa such as *Neviusia alabamensis* (Moore 1956 in Johnson 1988, p. 44), floristic relationships to the lower Mississippi Valley and Gulf Coastal Plain (Ozark Chinquapin Foundation 2010, pers. comm.) can only be considered speculative at this time (Johnson 1988, p. 47; ANHC 2010, pers. comm.). Steyermark (1963, p. 531) states that Louisiana and Mississippi are sometimes included as part of the Ozark chinquapin range, but specimens examined from those States have been proven not to be Ozark chinquapin. Ozark chinquapin is sympatric over virtually its entire range with *Castanea pumila* var. *pumila* and with *Castanea dentata* in Alabama. Further compounding questions regarding taxonomy of the species, herbarium, laboratory, and field studies indicate that in areas of sympatry the two varieties of *Castanea pumila* may be intermediate and identification of the two species may not always be possible (Johnson 1988, p. 43).

Ashe (1923) described the range of the species as ''north of the Arkansas River and westward from Center Ridge, Arkansas, northward to southwestern Missouri and westward to the Valley of the White River.'' Tucker (1983, p. 16) reported a large number of populations of Ozark chinquapin in the Interior Highlands of Arkansas, Missouri, and Oklahoma. Nearly 20 years later, the distribution and abundance of populations remain similar. The largest populations occur on public lands (such as the Ouachita National Forest (AR and OK), Ozark National Forest (AR), Mark Twain National Forest (MO), State Wildlife Management Areas and Parks (AR, MO, and OK), Buffalo National River (AR), Hot Springs National Park (AR), and Pea Ridge National Military Park (AR). Thousands of elements of occurrences represented by numerous individuals occur in the Interior Highlands (ANHC 2010, pers. comm.; USFS 2010, pers. comm.; Missouri Department of Conservation 2010, pers. comm.; and Oklahoma Natural Heritage 2010; National Park Service (NPS) 2010 and 2011).

The Ozark–Ouachita Highlands Assessment (OOHA) 1999 Terrestrial Vegetation and Wildlife Report, prepared by a collaborative team of natural resource specialists and research scientists, examined historical and existing forest conditions throughout the Interior Highlands of Arkansas, Missouri, and Oklahoma (USFS 1999, section 5). The area of analysis overlaps much of the range of Ozark chinquapin. The upland oak–hickory forest type provided the dominant cover within the region at the time of the OOHA. It covered 15 million acres (6.1 million hectares) or about 36 percent of the area. The oak–pine forest type provided the second most extensive cover. It covered 4.4 million acres (1.8 million hectares) or 11 percent of the area. In 1999, clear-cutting had declined by 97.5 percent over a 10-year period in National Forests within the planning area. Additionally, herbicide application in the National Forests experienced an 83 percent decline over the same period (USFS 1999, p. 73; UUSFS 2005a, pp. 2–5, 2–6 and 2–27; USFS 2005b, pp. 176–178). Oak–hickory and oak–pine forest types continue to be common forest types in the Interior Highlands. OOHA descriptions of vegetation cover or silvicultural practices do not indicate significant reductions in suitable habitat for *Castanea pumila* var. *ozarkensis.*

Moreover, the majority of Ozark chinquapin habitat is located on State and Federally managed lands. Ozark chinquapin is designated as a USFS sensitive species. Land and resource management plans have recently been revised for National Forests within the range of the species. Revisions of these plans include development of standards to protect the species while allowing normal forest management activities, including the use of prescribed fire, thinning, and natural gas development. These standards further demonstrate that management activities (for example, prescribed fire and thinning) on public lands enhance sprouting, flowering, and fruit production of this species, thus enhancing stewardship for the species. The general direction within these plans is for the National Forests to manage habitat to move species toward recovery and delisting and to prevent the listing of proposed or sensitive species (USFS 2005a, p. 2–13; USFS 2005b, p. 76).

Private property development and land use activities may threaten Ozark chinquapin due to habitat conversion or loss. On the other hand, private landowners interested in the conservation of Ozark chinquapin have been able to sustain isolated, moderately sized individuals capable of seed production on small tracts of private land. In short, as the human population continues to increase in the Interior Highlands, we believe loss or conversion of forested habitat on private lands and its effect on Ozark chinquapin will be minimal, due to the wide distribution and vast amount of contiguous habitats afforded the species on State and Federal lands. While we expect some element occurrences to be lost on private land, we conclude that habitat loss and fragmentation are not current threats to Ozark chinquapin, nor do we believe they will be in the foreseeable future.

Forest Composition, Structure Conversions, Forest and Fire Management

It is generally accepted that climate, topography, and substrate place fundamental constraints on vegetation at many different spatial and temporal scales, but at the landscape scale, vegetation patterns also may be controlled by disturbance histories (Zedler *et al.* 1983; McCune and Allen 1985; Myers 1985 in Batek *et al.* 1999, p. 398). Much of our knowledge of fire effects on trees comes from a relatively small collection of studies throughout the eastern United States during the period 1957 to 1998 (Dey and Hartman 2005, p. 38). Fire suppression is one of the major determinants of contemporary vegetation patterns in the Interior Highlands. Batek *et al.* (1999, pp. 407–410) concluded that where fire regimes are primarily anthropogenic, as in the Interior Highlands (specifically in the Ozarks), they exert strong constraints on vegetation composition and patterns. Based on their reconstruction analysis, the Interior Highlands vegetative community was replaced during the 19th century by a more homogenous landscape dominated by several oak species. Most of the shortleaf pine was felled from 1888 to 1909 (Steven 1991 in Batek *et al.* 1999, p. 410), and fire suppression since 1940 has favored invasion of fire-sensitive species that were more restricted in distribution 150 years ago (Batek *et al.* 1999, p. 410; Arthur *et al.* 1998, p. 225).

Historically, the Interior Highlands landscape consisted of a mosaic of prairies, savannas, woodlands, and forests maintained by fires and adapted to disturbance. Based on Government Land Office (GLO) survey records interpreted by the ANHC, only 33 percent of the Ozark Mountains was described as closed forest (much in steep slopes). The remaining 67 percent at the time of the GLO surveys had average tree densities ranging from 38 to 76 trees per acre.

European settlement brought changes to the ecosystem that led to extensive timber harvest and fire suppression. As a result, the average tree density per acre (ha) increased from 52 to 148 (21 to 60) trees. Even more staggering was the increase from 300 to 1,000 stems per acre (121 to 405 stems per ha) in the sapling and shrub layers. Increased trees per acre competing for the same amount of nutrients and water put the ecosystem under stress. There is nothing in the post-glacial record that suggests that the Interior Highlands have been previously affected by changes of this magnitude or rapidity (Spetich 2004, pp. 28 and 304). Despite this forest conversion after European settlement, Ozark chinquapin remained a prized source of edible nuts, fence posts, and railroad ties in the Interior Highlands until its rapid ecological and socioeconomic demise in the mid-1940s from chestnut blight (Tucker 1983, p. 7). Canopy closure in undisturbed woods did not seem to have a major effect on Ozark chinquapin populations (Paillet 2010, pers. comm.).

Hyatt (1993, pp. 116–118) recounts the floristic history of Baxter County in north central Arkansas from the earliest floristic survey in 1818 to present day. Ecologically and floristically, Baxter County was very different during Hyatt's 1987–1988 surveys, as compared with the county's surveys from the early 19th century, when many upland areas were once prairie. Much of this prairie had disappeared by 1880 and was replaced with ''upland hardwood'' and ''pine-hardwood'' forest. By the late 19th century, nearly all of the existing forest land was logged for railroad ties and lumber (Hyatt and Moren 1990 in Hyatt 1993, p. 117). Hyatt (1993, pp. 119 and 127) describes Ozark chinquapin as ''common, diseased, [and] rarely reproductive,'' and from only ''Deciduous Forest.''

Chapman *et al.* (2006) describe long-term dynamics from 1934 to 2002 in oak stands within the Sylamore Experimental Forest (SEF), located in the Ozark National Forest in north central Arkansas. When SEF was established in 1934, it was representative of typical unharvested forests of the region that had a long history (100 plus years) of frequent fire. Some cutting (harvest) was conducted after establishment (start of growth) and a fire prevention program was implemented, but little management occurred after 1960. Total tree density increased from 899 to 2,550 trees per ac (364 to 1,032 trees per ha) and basal area (an area of a given section of land that is occupied by the cross-section of tree trunks and stems at their base) from 25 to 57 m^2/ac (10 to 23 m^2/ha). Increases occurred among understory, midstory, and overstory trees for most species, except Ozark chinquapin, which decreased markedly in all three categories, and *Quercus velutina* (Black oak). Chestnut blight is the probable cause of the Ozark chinquapin decline, but fire suppression also may have exacerbated the decline.

Spetich (2004, p. 49) evaluated fire-scarred trees and stumps at the Big Piney Ranger District (formerly Bayou and Pleasant Hill Ranger Districts), Ozark National Forest, north central Arkansas, for the three time periods 1747 to 1764, 1804 to 1906, and 1916 to 1954. From 1747 to 1764, the fire return interval ranged from 1 to 3 years, with a mean return interval of 2.4 years. From 1804 to 1906, the fire interval ranged from 1 to 9 years, with a mean return interval of 4.4 years. From 1916 to 1954, the fire return interval ranged from 1 to 12 years, with a mean return interval of 5.3 years. This validates what other researchers have found to be a positive correlation between fire frequency and low levels of human population and a negative correlation between fire frequency and high levels of human population density. Thus, increasing human settlement and fragmentation of the landscape resulted in a decrease of fire return interval (Spetich 2004, pp. 49, 463, 469–473).

In 2003, an administrative study designed to monitor the immediate and short-term effects of prescribed fire on individual Ozark chinquapin stems was implemented north of the Crystal Mountain Recreation Area on the Caddo-Womble Ranger District, Ouachita National Forest, AR. Three areas were studied: An area thinned in previous years, an area with no harvest, and an area that served as a reference site. The monitoring was designed to capture the current stand conditions and health and abundance of individual Ozark chinquapin stems. The harvest/burn area showed the widest range of variability and the greatest increase in number of Ozark chinquapin sprouts; there was also an increase in the number of Ozark chinquapin sprouts in the burned area, which had no previous harvest treatments and little to no change in the reference area (USFS 2003, pp. 4–5).

Historical descriptions of vegetation and flora of the Ouachita Mountains (a portion of the Interior Highlands) in eastern Oklahoma are very similar to those previously discussed for this region. Nuttall (1780 to 1820) and Rice and Penfound (1953 to 1957) accounts of an area dominated by pines and hardwoods intermixed with open prairies contained a mosaic of vegetation types established by frequent anthropogenic fire and lightning-caused fires (Thwaites 1905, Curtis 1956, Pyne 1982, and Masters 1991 in Crandall and Tyrl 2006, p. 65; Rice and Penfound 1959, pp. 595–596). They reported Ozark chinquapin from stands in eastern and central Oklahoma, but provide no discussion on its status, distribution, or abundance. With the implementation of fire suppression in the 1920s, the region changed to a landscape of predominately forest (Crandall and Tyrl 2006, p. 65; Rice and Penfound, pp. 606–607).

Crandall and Tyrl (2006, p. 65) and Smith *et al.* (1997 in Hoagland and Buthod 2009, pp. 78–81) documented 447 and 359 species at the Pushmataha Wildlife Management Area and McCurtain County Wilderness Area, McCurtain County, Oklahoma, respectively, but no Ozark chinquapin were reported within these areas (collectively comprising 33,090 ac (13,391 ha)). Hoagland and Buthod (2008, pp. 18 and 24; 2009, pp. 61 and 85) reported Ozark chinquapin presence at The Nature Conservancy's T. Nickel Family Nature and Wildlife Preserve and Cucumber Creek Nature Preserve, Cherokee and LeFlore Counties, Oklahoma. They reported Ozark chinquapin in xeric forests, predominately on south facing and exposed slopes at the preserve.

In summary, the OOHA recognized Ozark chinquapin as a species of viability concern, the habitat description being ''woodland, fire maintained'' (USFS 1999, p. 137). Loss of natural fire regimes is recognized as a threat to the health and sustainability of oak–hickory and oak–pine ecosystems in which Ozark chinquapin occurs (Spetich 2004, pp. 49–50 and 65–66). Given the current understanding of fire as it relates to ecosystem health and sustainability within most of the habitats where Ozark chinquapin is known to occur, we cannot conclude that fire, whether natural or prescribed, is negatively influencing the species. Fire plays a vital role in the management of Ozark chinquapin by maintaining open habitat, encouraging both seed germination and vegetative regeneration. While fire may injure or kill individuals, long-term effects on sustaining viable populations are beneficial. It is well documented that fire suppression adversely effects reproduction of Ozark chinquapin. In contrast, prescribed fire reduces fuel availability in the forest, which reduces the threat of catastrophic wildfires that are likely a greater threat to Ozark chinquapin than prescribed fire.

Scientific literature supports widespread forest composition and structure changes throughout the Interior Highlands beginning in the late 1800s and extending over one century. Tucker (1983, p. 15) stated that Ozark chinquapin formerly was a member of the climax (the highest or most intense point in the development) community, but presently is one of the first species to regenerate following a disturbance (for example, clear-cut and prescribed fire). Paillet (1991, p. 10; 1993, pp. 261–262) noted an area on the Ozark National Forest that was cut 4 to 5 years previously that was full of broad chinquapin crowns, with the ground littered with burrs from the summer's nut crop. Despite these changes, Ozark chinquapin remains common throughout its historical distribution in the Interior Highlands. Current land management efforts, particularly on State and Federal lands, favor Ozark chinquapin persistence in this region.

Summary of Factor A

We evaluated habitat loss, fragmentation, forest composition, structure conversions, forest management, and fire management as threats to the Ozark chinquapin. We found that habitat loss and fragmentation may be happening on private lands, but that its effect on Ozark chinquapin is minimal due to widespread distribution and vast amounts of contiguous habitats afforded the species on State and Federal lands. Forest composition and structure conversions have occurred throughout the species' range, but despite these changes, Ozark chinquapin remains common throughout its historical distribution in the Interior Highlands. Additionally, current forest management efforts, particularly on State and Federal lands, favor Ozark chinquapin persistence in this region. Fire management was the last threat we evaluated. Fire plays a vital role in the management of Ozark chinquapin by maintaining open habitat, encouraging both seed germination and vegetative regeneration. While fire may injure or kill individuals, long-term effects on sustaining viable populations is beneficial.

Based on our review of the best available scientific and commercial information, we conclude that the Ozark chinquapin is not threatened by the present or threatened destruction, modification, or curtailment of its habitat or range now or in the foreseeable future. Additionally, for these reasons, we conclude that alterations to forest composition and structure and forest and fire management do not pose an imminent threat to Ozark chinquapin now or in the foreseeable future.

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

We do not have any evidence of risks to the Ozark chinquapin from overutilization for commercial, recreational, scientific, or educational purposes, and we have no reason to believe this factor will become a threat to the species in the future. Therefore, based on a review of the best available scientific and commercial information, we find that overutilization for commercial, recreational, scientific, or educational purposes is not a threat to Ozark chinquapin now or in the foreseeable future.

Factor C. Disease or Predation

Under Factor C, we evaluated the following diseases: ink disease (*Phytopthera cinnamomi*) and chestnut blight (*Cryphonectria parasitica*). We do not have any information to indicate that any other disease or that predation poses a threat to Ozark chinquapin at this time.

Ink Disease

Ink disease, caused by the fungus *Phytopthora cinnamomi,* is known to attack the root systems of all North American *Castanea* species. It has been present in the southeast United States for over a century. The pathogen is slow spreading. *Phytopthora cinnamomi* spores spread through groundwater, and thus are most prevalent in low-lying areas. The pathogen also appears to be restricted to relatively warm temperatures (generally south of Philadelphia, PA) and heavier soils (Paillet 2010, pers. comm.). The relatively coarse sandstone and chert loam upland soils where Ozark chinquapin thrives may be too well drained for the pathogen (Paillet 2010, pers. comm.). For these reasons, we conclude that ink disease does not pose an imminent threat to Ozark chinquapin now or in the foreseeable future.

Chestnut Blight

Chestnut blight, caused by the fungal parasite *Cryphonectria* (formerly *Endothia*) *parasitica,* attacks the stems of all North American *Castanea* species, but is not directly pathogenic to the root system. *Castanea* species evolved in

North America with little or no resistance to chestnut blight, due to isolation from the Asiatic *Castanea* species, which evolved with this parasitic fungus and developed some resistance (Anagnostakis 1982 p. 466). The chestnut blight was first found in *Castanea dentata* (American chestnut; 1904). Over a period of approximately 20 years, the blight spread throughout the range of the American chestnut, reducing this important forest tree to a shrub or small tree. The fungus enters wounds in the bark and grows under the bark, eventually killing the cambium (a layer of living cells, between the bark and hardwood, that each year produces additional wood and bark cells) encircling the infected area. This results in top-kill of the tree (above the ground). After top-kill, sprouts develop at the base of the tree from dormant buds. These sprouts grow, become infected, and die, and the process is repeated (Anagnostakis 2000, p. 1). Chestnut blight is widely recognized as the dominant threat to Ozark chinquapin. The blight's effect on Ozark chinquapin was first noted in the 1940s (Tucker 1983, p. 7). However, while there is an abundance of scientific literature addressing the effects of chestnut blight on the American chestnut, literature addressing its effects on Ozark chinquapin specifically is very limited. There are clearly a number of similarities in the current status of the two species (Paillet 2010, pers. comm.). The long-term threat posed to both species is that: (1) Trees survive by avoiding chestnut blight, so there is little selective pressure to generate blight resistance; and (2) chestnut blight severely restricts reproduction (cross pollination and seed production), which may serve as resistance genes through normal cross breeding species that are not self fertile.

The ability of Ozark chinquapin to produce a mast crop after 4 to 5 years of age increases the likelihood of cross pollination (fertile individuals) and subsequent seed production. This allows for a significant but short lived pulse of cross pollination and seed production in the decade following a release response (release of seeds and pollination) (Paillet 2010, pers. comm.). Although most Ozark chinquapin specimens now found are infertile multi-stemmed understory shrubs due to chestnut blight, it is not exceedingly rare to find fertile specimens in a variety of Arkansas habitats or to find young specimens with single trunks and no evidence of chestnut blight–killed older trunks, indicating recent seed production (ANHC 2010, pers. comm.). In one Arkansas locality, the sprouts produced seeds within a few years of release (Paillet, 1993, p. 267). This indicates there is some level of reproduction (cross pollination and subsequent seed production and germination) (ANHC 2010, pers. comm.), albeit degraded by chestnut blight (Tucker, 1983, pp. 9, 16).

Ozark chinquapin, like American chestnut, also has suppressed sprout clumps that reside on the forest floor. Almost all sprout clumps represent ''old seedlings'' that never grew to tree size. Many of these suppressed Ozark chinquapin sprouts are small and inconspicuous, escaping notice by the casual observer (Paillet 2010, pers. comm.). Nibbs (1983 in Paillet 2002, p. 1527) showed that suppressed seedlings of several New England tree species are capable of sprouting and that sprouts from seedlings established before tree harvest were more successful in regenerating forests in Massachusetts than were either stump sprouts or new seedlings. Much of the adaptive character of American chestnut as an understory shrub applies as well to Ozark chinquapin.

The Ozark-St. Francis National Forest, Wedington Unit, is involved in a detailed reconstruction of Ozark chinquapin in the pre-chestnut blight forests of northwest Arkansas. Although in modern forests we think of Ozark chinquapin growing in clumps of sprouts, most of the original trees had a single, upright dominant trunk. Most of these original trees did not survive by resprouting. Most surviving Ozark chinquapin sprouts, as in the case of the American chestnut, represent ''old seedlings.'' This may represent an extreme case of a reproductive strategy based on advanced regeneration (Paillet 2010, pers. comm.), but limited information is available to support or refute this hypothesis.

An understanding of adaptive genetic differentiation among populations is of primary importance in the conservation of *Castanea* species in North America (Dane and Hawkins 1999, p. 2). Stillwell *et al.* (2003, pp. 3–4) discuss several effects to the American chestnuts as a consequence of chestnut blight, including ecological changes and the diminished importance of cross pollination, seed production, and germination on the amount and distribution of genetic diversity in the species. First, the chestnut blight significantly alters the ecology of American chestnut, which may reduce the overall level of genetic diversity. Secondly, chestnut blight may affect the distribution of genetic variance within and among populations. This could occur by genetic drift from the reduced population size or from the vegetative expansion of root collars, both of which would tend to diminish genetic variance within patches.

Dane and Hawkins (1999) characterize the genetic diversity within and between populations of the Ozark chinquapin to provide an understanding of overall genetic composition and its relationship to the vulnerability of the species to chestnut blight. The proportion of genetic diversity found among the studied Ozark chinquapin populations was slightly greater than that observed for other *Castanea* species, other long-lived perennial species, wind-outcrossing (to cross-pollinate (reproduce) by wind dispersal) species, and late-successional species (Hamrick and Godt 1996 in Dane and Hawkins 1999, p. 8). ANHC (1996, p. 5) also found similar results in four Arkansas Ozark chinquapin populations, although the amount of genetic diversity found among the populations was very low. They reported a high level of heterozygosity within populations that may have been the result of tree recovery in clear-cut areas following the incidence of chestnut blight. Dane *et al.* (2003, p. 319) found high genetic diversity in the more narrowly distributed Ozark chinquapin, similar to that in regionally distributed *Castanea pumila* var. *pumila* (Allegheny chinquapin). While Fu and Dane (2003, pp. 228–229) found that genetic diversity in Allegheny chinquapin was much higher than that observed in the American chestnut, which is geographically sympatric (Johnson 1988, p. 42), and is similar to that of the closely related Ozark chinquapin. The greater level of genetic diversity in Ozark chinquapin may be related to its origin as it is less evolved than the more common Allegheny chinquapin as evidenced by its lack of stoloniferous (producing stolons; putting forth suckers) growth (an adaptation for survival in early successional stages and areas with low soil fertility), its arborescent (having the size, form, or characteristics of a tree) habit, and other habitat requirements (Dane and Hawkins 1999, p. 8).

There are high levels of outcrossing and gene flow among Ozark chinquapin populations. Indirect estimates of outcrossing rates suggest that most populations are highly outcrossed (Dane and Hawkins 1999, p. 9). Johnson (1988, pp. 37–40) found the *Castanea* species to be mainly wind-pollinated, and detected infrequent occurrences of self-compatibility and apomixis (reproduction without meiosis (the process of cell division in sexually reproducing organisms that reduces the number of chromosomes) or formation of gametes (eggs)).

Knowles and Grant (1981, p. 4, in Stillwell *et al.* 2003) and Mitton and Grant (1980, p. 4, in Stillwell *et al.* 2003) present contrasting information on long-lived trees and the general perception that more heterozygous individuals are less variable and better adapted in fluctuating environments. Stillwell *et al.* (2003, pp. 9–11) suggest that the chestnut blight has had significant effects on the genetics of American chestnut populations. They found that a slight growth advantage for heterozygous genotypes has resulted in a profound excess of heterozygotes within populations. Studies of different age classes (seeds, seedlings, and stands of differing ages) show an increase in heterozygosity with increasing age within other tree species. The difference observed by Stillwell *et al.* (2003, pp. 9–11) is that all extant American chestnut genotypes are more than 70 years old and many that succumbed to the blight as mature canopy trees are much older. Therefore, as selection favors a population of heterozygous individuals, there are no new recruits to restore the population toward Hardy-Weinberg equilibrium (a constant state of genetic variation in a population from one generation to the next in the absence of disturbance). Prolonged absence of cross pollination and subsequent new recruitment from seed germination in the American chestnut has resulted in a change in population genetics, yet it is not well documented whether these same effects have resulted in similar changes to population genetics of the Ozark chinquapin due to its ability to produce mast crops before succumbing to chestnut blight.

The high mortality of American chestnut stems in conjunction with near total elimination of reproduction through cross pollination could have resulted in the loss of some (mostly rare) alleles (one of two or more alternative forms of a gene that arise by mutation and are found at the same place on a chromosome) (Loveless and Hamrick 1984; Leberg 1992 in Stillwell *et al.* 2003, pp. 207–213). It is not clear; however, whether this slightly lower genetic diversity is a result of the chestnut blight epidemic. Huang *et al.* (1998, pp. 1015–1019) suggested that the low genetic diversity of the American chestnut resulted in the high susceptibility to attack by blight, rather than that the low genetic diversity was a direct consequence of the blight pandemic, and that other *Castanea* species with more diverse allozyme variation are less susceptible to epidemics. In the absence of knowledge of pre-blight genetic population structure, it is difficult to make any definitive statement on changes in genetic diversity due to the chestnut blight pandemic (Stillwell *et al.* 2003, p. 10).

Grenate (1965 in Anagnostakis 1987 p. 27) isolated forms of the chestnut blight fungus that had a different appearance and reduced virulence in *Castanea* species infected by chestnut blight in Italy. Hypovirulence is a disease, or a group of diseases, that affect the chestnut blight, reducing the ability of the blight to kill susceptible *Castanea* tree hosts (Van Alfen *et al.* 1975 in Anagnostakis 1987 p. 28). Hypovirulence is controlled by genetic determinants in the cytoplasm of the fungus (Day *et al.* 1977 in Anagnostakis 1987 p. 28). These hypovirulent forms cured existing blight when they were inoculated into cankers of infected trees. Due to successes achieved with hypovirulent strains in Europe, research and conservation efforts began in the early 1970s with the American chestnut (Anagnostakis 1987 pp. 32–33) and continue at present with the Ozark chinquapin. Full restoration of the Ozark chinquapin may prove complicated and might require establishment of a backcross breeding program designed to transfer the blight resistance of *Castanea henryi* (Chinese chinquapin) (Dane and Hawkins 1999, p. 9). Similar efforts are ongoing to discover hypovirulent forms or founder (fall in or give way; collapse) trees with natural chestnut blight resistance in Ozark chinquapin, although there is preference towards the latter (Ozark Chinquapin Foundation 2010, pers. comm.).

Success at bringing chestnut blight into balance in Europe (Italy and France) demonstrates that the fungus might be controlled in North America (Anagnostakis 1987 p. 33). Brewer (1995, pp. 54–55) found that certain ecological factors may explain differential success of hypovirulence in different Michigan soil types: (1) American chestnut has a better competitive advantage on well-drained sandy soils, (2) hypovirulence originates from sandy textured hypovirulence originates soils, and (3) sandy textured soils provide more dispersing agents for hypovirulent strains. While it remains unclear how important each of these factors is in the hypovirulence phenomenon and how chestnut blight, double-stranded RNA, and American chestnut interact, it should enable researchers, foresters, and conservationists the opportunity to better assess hypovirulence as a biological control that also may favor restoration of Ozark chinquapin populations.

Despite the shift in reproductive strategy (seed production/germination versus vegetative regeneration) and a shorter life span for the stems, chestnut blight has not affected the distribution and abundance of Ozark chinquapin in the Interior Highlands of Arkansas, Missouri, and Oklahoma (see ''Distribution''). Tucker (1983, p. 25) states that chestnut blight is responsible for the mortality of extant reproductive populations (those capable of cross pollination and seed production), reducing populations to primarily reproduction via regeneration, and that populations capable of cross pollination and seed production are increasingly rare. However, there are numerous references in the scientific literature and from personal communications with agencies and conservation groups actively involved in the conservation of Ozark chinquapin that indicate that this species is adapted to and capable of producing mast crops annually in areas with active management (such as forest management and prescribed fire) (Paillet 1993, p. 267; Paillet 2002, p. 1528; Paillet 2010, pers. comm.; ANHC 2010, pers. comm.; USFS 2010, pers. comm.; Ozark Chinquapin Foundation 2010, pers. comm.; Missouri Department of Natural Resources 2010, pers. comm.). While not done as extensively as for American chestnut, genetic studies indicate that Ozark chinquapin has greater genetic diversity than American chestnut and similar genetic diversity to Allegheny chinquapin, both of which are more geographically widespread than Ozark chinquapin (Dane and Hawkins 1999, p. 2–9; Stillwell *et al.* 2003, pp. 3–11; ANHC 1996, p. 5; Dane *et al.* 2003, p. 319; Fu and Dane 2003, pp. 228–229; Huang *et al.* 1998, pp. 1015–1019). The greater level of genetic diversity in Ozark chinquapin may be related to evolutionary adaptations for survival in early successional stages and areas with low soil fertility, its arborescent habit, and other habitat requirements (Dane and Hawkins 1999, p. 8). Thus, information available does not indicate that chestnut blight has resulted in a loss of genetic diversity for Ozark chinquapin. While the ecological demise of *Castanea* species is well documented in scientific literature, the seemingly endless cycle of sprouting (regeneration) and reinfection has continued in American chestnut, as well as Ozark chinquapin, unabated to present day (over 100 years in the former species and 70 years in the latter) (Anagnostakis and Hillman undated, pp. 6–7). Success at bringing chestnut blight into balance in Europe (Italy and France) with hypovirulence demonstrates that the fungus might be controlled in North America (Anagnostakis 1987 p. 33). Moreover, similar hypo virulent efforts as those taking place in Europe are ongoing with Ozark chinquapin (Ozark Chinquapin Foundation, 2010 pers. comm.).

Summary of Factor C

Ink disease does not pose an imminent threat now or in the foreseeable future to the continued existence of extant Ozark chinquapin populations; however, chestnut blight has posed a long-term, imminent threat to mature Ozark chinquapins for the past 70 years and will for the foreseeable future. However, chestnut blight does not threaten the continued existence of Ozark chinquapin at this time or in the foreseeable future. Our conclusion is based on the following: (1) The documented widespread distribution and abundance of Ozark chinquapin is more complex than the picture presented by chestnut blight alone and may represent combined effects of changes in disturbance regime, climate, and land use history that extend over a prolonged period (post-glacial history) in the region; (2) it is well documented that the Ozark chinquapin remains widespread and abundant within the Interior Highlands; and (3) due to the life history traits of Ozark Chinquapin, it appears that cross pollination and production of seeds, while rare, does occur, which may allow for a significant, albeit greatly diminished, short pulse of seed production and germination in the decade after a disturbance (release) response. Based on our review of the best available scientific and commercial information, we conclude that the Ozark chinquapin is not threatened by the disease or predation now or in the foreseeable future.

D. Inadequacy of Existing Regulatory Mechanisms

The majority of Ozark chinquapin populations occur on public land. Populations that occur on these lands are protected by State and Federal laws and regulations.

Federal Regulations and Management

The NPS, under its National Park Service Organic Act (16 U.S.C. 1 *et seq.*), is responsible for managing the National Parks to conserve the scenery and the natural and historic objects and the wildlife (see ''Distribution'' section and Factor A, for National Parks with extant Ozark chinquapin populations) found on the parks. The National Parks Omnibus Management Act of 1998 (16 U.S.C. 5934 *et seq.*) requires the NPS to inventory and monitor its natural resources. NPS has implemented its resource management responsibilities through its Management Policies, Section 4.4, which states that the NPS ''will maintain as parts of the natural ecosystems of parks all plants and animals native to park ecosystems.'' Section 207 of the Omnibus Management Act of 1998 allows NPS to withhold from the public any information related to the nature and specific location of endangered, threatened, or rare species unless disclosure would not create an unreasonable risk of harm to the species.

Hot Springs National Park (HSNP) does not specifically manage for Ozark chinquapin. HSNP's current General Management Plan (GMP) was approved in the 1980s and did not specifically address the Ozark chinquapin. However, HSNP does manage for the entire ecosystem that includes the Ozark chinquapin. For instance, in May 2005, HSNP abandoned its practice of total fire suppression regardless of ignition source and has since utilized fire as an ecosystem restoration tool on Sugarloaf Mountain (the only site in the park with an extant population of Ozark chinquapin). As a result of the new fire regime, young Ozark chinquapin sprouts have responded favorably at sites with suitable habitat. Furthermore, HSNP is currently in the process of developing a new GMP, which will incorporate ecosystem restoration that will prove valuable to Ozark chinquapin restoration at HSNP, with expertise from other agencies and researchers (for example, USFS Southeast Research Station; S. Rudd, NPS, pers. comm. 2011). Similarly, Pea Ridge National Military Park does not currently have a GMP that specifically addresses the conservation needs of Ozark chinquapin, but it actively utilizes fire as an ecosystem restoration tool (K. Eads, NPS, pers. comm. 2011).

Finally, Buffalo National River (BNR) is developing a predictive geographic information system (map) model based on soil types and aspects associated with Ozark chinquapin populations at BNR. This work also includes a better delineation (survey) of Ozark chinquapin populations to aid in a better understanding of its health and spatial distribution, important modeling parameters. This information will be available in summer 2011 and will further help guide Ozark chinquapin habitat restoration efforts at BNR. BNR also began work in 2009 with an arborist to gather seeds from trees at BNR seemingly unaffected by chestnut blight for propagation (B. Wilson, NPS, pers. comm. 2011).

Ozark chinquapin is currently designated as a USFS sensitive species (see Distribution section and Factor A for USFS lands with extant Ozark chinquapin populations). The National Forest Management Act of 1976 (16 U.S.C. 1600 *et seq.*) specifies guidelines for land management plans developed to achieve goals that include protection of sensitive species. USFS Manual 2670, Threatened, Endangered and Sensitive Plants and Animals, sections 22 and 32, requires the USFS to develop and implement management practices that ensure that sensitive species do not become threatened or endangered due to USFS actions. Factor A of this finding discusses some vegetative monitoring and management activities which include the Ozark chinquapin that are conducted and controlled by the USFS.

State Regulations and Management

Additionally, the Ozark chinquapin currently receives protection on State park and natural heritage owned lands (see Distribution section and Factor A) in Arkansas, Missouri, and Oklahoma. State parks in Missouri, similar to Arkansas and Oklahoma, are acquired and managed to protect a well-balanced system of areas with outstanding scenic, recreational, and historic significance (10 CSR 100–1.010). Missouri State parks currently track resiliency and recovery of Ozark chinquapin with implementation of prescribed fire to manage for ecosystem health (such as fire-mediated woodlands that support Ozark chinquapin) and monitor distribution with aid from the Natural Heritage Program (A. Vaughn, Missouri State Parks, pers. comm. 2010). Arkansas Game and Fish Commission (AGFC) has no specific management strategy for Ozark chinquapin on Wildlife Management Areas; similar to other State properties throughout the species range, they maintain a species list for inventory purposes and elements of occurrence and have prescribed fire management plans that benefit Ozark chinquapin (M. Blaney, AGFC, pers. comm. 2011).

The ANHC System of Natural Areas provides long-term protection to some of Arkansas' most ecologically significant lands. ANHC rules and regulations prohibit the collection and/or removal of plants (including fruits, nuts, or edible plant parts), animals, fungi, rocks, minerals, fossils, archaeological artifacts, soil, downed wood, or any other natural material, alive or dead. Natural areas are managed according to an established management plan and a conservation vision aimed at protecting, enhancing, interpreting, and sometimes even restoring the significant ecological values present at the site (for example, natural ecosystem health). To do this, management plans for areas within the system are prepared and updated regularly to set the frameworks for future management activities. ANHC no longer tracks Ozark chinquapin as a State species of concern, due to its widespread distribution and local abundance in Arkansas (C. Colclasure, ANHC, pers. comm. 2010 and T. Witsell, ANHC, pers. comm. 2011).

Summary of Factor D

In summary, we do not consider the inadequacy of existing regulatory mechanisms to be a threat to the populations of Ozark Chinquapin in the national forests and parks and State parks and natural areas in Arkansas, Missouri, and Oklahoma. The regulatory mechanisms discussed above allow the Federal and State agencies to prevent collection or take of Ozark chinquapin and implement management practices to ensure long-term population viability and promote natural ecosystem restoration and health on public property. Furthermore, we do not consider development outside these Federal and State lands to be a threat to Ozark chinquapin populations within these Federal lands. Therefore, based on a review of the available information, we find that inadequacy of existing regulatory mechanisms is not a threat to Ozark chinquapin now or in the foreseeable future.

E. Other Natural or Manmade Factors Affecting the Species' Continued Existence

Climate Change

Habitat is dynamic, and species may move from one area to another over time. Climate change will be a particular challenge for biodiversity, because the interaction of additional stressors associated with climate change and current stressors may push species beyond their ability to survive (Lovejoy 2005, pp. 325–326). The synergistic (combined or cooperative action or force) implications of climate change and habitat fragmentation are the most threatening facet of climate change for biodiversity (Hannah *et al.* 2005, p. 4). Current climate change predictions for terrestrial areas in the Northern Hemisphere indicate warmer air temperatures, more intense precipitation events, and increased summer continental drying (Field *et al.* 1999, pp. 1–3; Hayhoe *et al.* 2004, p. 12422; Cayan *et al.* 2005, p. 6; Intergovernmental Panel on Climate Change (IPCC) 2007, p. 1181). Climate change may lead to increased frequency and duration of severe storms and droughts (Golladay *et al.* 2004, p. 504; McLaughlin *et al.* 2002, p. 6074; Cook *et al.* 2004, p. 1015). According to the Arkansas Statewide Forest Resource Assessment (2010, p. 68), the U.S. Department of Agriculture concluded that species will adjust to suitable conditions or go locally extinct if suitable conditions are no longer available. As climate models project continued warming in all seasons across the Southeast (Karl *et al.* 2009, p. 1), species shift is likely to be northward. The information currently available on the effects of global climate change and increasing temperatures does not make sufficiently precise estimates of the location and magnitude of the effects. Nor are we currently aware of any climate change information specific to the habitat of *Castanea pumila* var. *ozarkensis* that would indicate what areas may become important to the species in the future.

Summary of Factor E

Therefore, we do not have any information of risks to the Ozark chinquapin from other natural or manmade factors, and we have no reason to believe this factor will become a threat to the species in the foreseeable future. Based on a review of the available information, we find that other natural or manmade factors are not a threat to the Ozark chinquapin now or in the foreseeable future.

Finding

As required by the Act, we considered the five factors in assessing whether Ozark chinquapin is threatened or endangered throughout all or a significant portion of its range. We examined the best scientific and commercial information available regarding the past, present, and future threats faced by Ozark chinquapin. We reviewed the petition, information available in our files, and other available published and unpublished information, and we consulted with recognized Ozark chinquapin experts and other Federal, State, and Tribal agencies.

Based on our review of the best available scientific and commercial information pertaining to the five factors, we find that the threats are not of sufficient imminence, intensity, or magnitude to indicate that Ozark chinquapin is in danger of extinction (endangered), or likely to become endangered within the foreseeable future (threatened), throughout all of its range. Therefore, we find that listing Ozark chinquapin as a threatened or endangered species is not warranted throughout all of its range at this time.

Significant Portion of the Range

Having determined that Ozark chinquapin does not meet the definition of a threatened or endangered species throughout all of its range, we must next consider whether there are any significant portions of the range where Ozark chinquapin is in danger of extinction or is likely to become endangered in the foreseeable future.

In determining whether Ozark chinquapin is threatened or endangered in a significant portion of its range, we first addressed whether any portions of the range of Ozark chinquapin warrant further consideration. We evaluated the current range of Ozark chinquapin to determine if there is any apparent geographic concentration of the primary stressors potentially affecting the species including habitat management, development, climate change, regulation, disease, and genetics. This species' range suggests that stressors are not likely to affect it in a uniform manner throughout its range. As we explained in detail in our analysis of the status of the species, none of the stressors faced by the species are sufficient to place it in danger of extinction now (endangered) or in the foreseeable future (threatened). Therefore, no portion is likely to warrant further consideration, and a determination of significance is not necessary.

We do not find that Ozark chinquapin is in danger of extinction now, nor is it likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Therefore, listing Ozark chinquapin as threatened or endangered under the Act is not warranted at this time.

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

References Cited

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

Authors

The primary authors of this notice are the staff members of the Arkansas Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Authority

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

Dated: June 14, 2011.

Gabriela Chavarria,

Acting Director, Fish and Wildlife Service.

[FR Doc. 2011–16190 Filed 6–27–11; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 229

[Docket No. 110207104–1112–02]

RIN 0648–BA76

List of Fisheries for 2012

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule.

SUMMARY: The National Marine Fisheries Service (NMFS) publishes its proposed List of Fisheries (LOF) for 2012, as required by the Marine Mammal Protection Act (MMPA). The proposed LOF for 2012 reflects new information on interactions between commercial fisheries and marine mammals. NMFS must classify each commercial fishery on the LOF into one of three categories under the MMPA based upon the level of serious injury and mortality of marine mammals that occurs incidental to each fishery. The classification of a fishery in the LOF determines whether participants in that fishery are subject to certain provisions of the MMPA, such as registration, observer coverage, and take reduction plan (TRP) requirements.

DATES: Comments must be received by July 28, 2011.

ADDRESSES: Send comments by any one of the following methods.

(1) Electronic Submissions: Submit all electronic comments through the Federal eRulemaking portal: *http://www.regulations.gov* (follow instructions for submitting comments).

(2) Mail: Chief, Marine Mammal and Sea Turtle Conservation Division, Attn: List of Fisheries, Office of Protected Resources, NMFS, 1315 East-West Highway, Silver Spring, MD 20910.

Comments regarding the burden-hour estimates, or any other aspect of the collection of information requirements contained in this proposed rule, should be submitted in writing to Chief, Marine Mammal and Sea Turtle Conservation Division, Office of Protected Resources, NMFS, 1315 East-West Highway, Silver Spring, MD 20910, or to Nathan Frey, OMB, by fax to 202–395–7285 or by e-mail to *Nathan_Frey@omb.eop.gov.*

Instructions: All comments received are a part of the public record and will generally be posted to *http://www.regulations.gov* without change. All Personal Identifying Information (*e.g.,* name, address, *etc.*) voluntarily submitted by the commenter may be publicly accessible. Do not submit Confidential Business Information or otherwise sensitive or protected information. NMFS will accept anonymous comments (enter ''N/A'' in the required fields if you wish to remain anonymous). Attachments to electronic comments will be accepted in Microsoft Word, Excel, WordPerfect, or Adobe PDF file formats only.

Information regarding the LOF and the Marine Mammal Authorization Program, including registration procedures and forms, current and past LOFs, information on each Category I and II fishery, observer requirements, and marine mammal injury/mortality reporting forms and submittal procedures, may be obtained at: *http://www.nmfs.noaa.gov/pr/interactions/lof/* or from any NMFS Regional Office at the addresses listed below:

NMFS, Northeast Region, 55 Great Republic Drive, Gloucester, MA 01930–2298, Attn: Allison Rosner;

NMFS, Southeast Region, 263 13th Avenue South, St. Petersburg, FL 33701, Attn: Laura Engleby;

NMFS, Southwest Region, 501 W. Ocean Blvd., Suite 4200, Long Beach, CA 90802–4213, Attn: Charles Villafana;

NMFS, Northwest Region, 7600 Sand Point Way NE., Seattle, WA 98115, Attn: Protected Resources Division;

NMFS, Alaska Region, Protected Resources, P.O. Box 22668, 709 West 9th Street, Juneau, AK 99802, Attn: Bridget Mansfield; or

NMFS, Pacific Islands Region, Protected Resources, 1601 Kapiolani Boulevard, Suite 1100, Honolulu, HI 96814–4700, Attn: Lisa Van Atta.

FOR FURTHER INFORMATION CONTACT: Melissa Andersen, Office of Protected Resources, 301–713–2322; David Gouveia, Northeast Region, 978–281–9280; Laura Engleby, Southeast Region, 727–551–5791; Elizabeth Petras, Southwest Region, 562–980–3238; Brent Norberg, Northwest Region, 206–526–6733; Bridget Mansfield, Alaska Region, 907–586–7642; Lisa Van Atta, Pacific Islands Region, 808–944–2257. Individuals who use a telecommunications device for the hearing impaired may call the Federal Information Relay Service at 1–800–877–8339 between 8 a.m. and 4 p.m. Eastern time, Monday through Friday, excluding Federal holidays.

SUPPLEMENTARY INFORMATION:

What is the List of Fisheries?

Section 118 of the MMPA requires NMFS to place all U.S. commercial fisheries into one of three categories based on the level of incidental serious injury and mortality of marine mammals occurring in each fishery (16 U.S.C. 1387(c)(1)). The classification of a fishery on the LOF determines whether participants in that fishery may be required to comply with certain provisions of the MMPA, such as registration, observer coverage, and take reduction plan requirements. NMFS must reexamine the LOF annually, considering new information in the Marine Mammal Stock Assessment Reports (SAR) and other relevant sources, and publish in the **Federal Register** any necessary changes to the LOF after notice and opportunity for public comment (16 U.S.C. 1387 (c)(1)(C)).

How does NMFS determine in which category a fishery is placed?

The definitions for the fishery classification criteria can be found in the implementing regulations for section 118 of the MMPA (50 CFR 229.2). The criteria are also summarized here.

Fishery Classification Criteria

The fishery classification criteria consist of a two-tiered, stock-specific approach that first addresses the total impact of all fisheries on each marine mammal stock, and then addresses the impact of individual fisheries on each stock. This approach is based on consideration of the rate, in numbers of animals per year, of incidental mortalities and serious injuries of marine mammals due to commercial fishing operations relative to the potential biological removal (PBR) level for each marine mammal stock. The MMPA (16 U.S.C. 1362 (20)) defines the PBR level as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. This definition can also be found in the