
DEPARTMENT OF THE INTERIOR**Fish and Wildlife Service****50 CFR Part 17****Endangered and Threatened Wildlife and Plants; Threatened Status for *Cirsium pitcheri***

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The Service proposes to determine a plant, *Cirsium pitcheri* (Pitcher's thistle), to be a threatened species under the authority contained in the Endangered Species Act of 1973, as amended (Act). The species occurs on the shores of the Great Lakes in Indiana, Michigan, and Wisconsin in the U.S., and Ontario, Canada. Development, loss, and disturbance of dunelands by the public are the principal threats to the species. This proposed rule, if made final, will extend the Act's protection to *Cirsium pitcheri*. Critical habitat is not proposed for this plant. The Service seeks data and comments from the public on this proposed rule.

DATES: Comments from all interested parties must be received by September 18, 1987. Public hearing requests must be received by September 3, 1987.

ADDRESSES: Comments and materials concerning this proposal should be sent to the Endangered Species Division, U.S. Fish and Wildlife Service, Federal Building, Fort Snelling, Twin Cities, Minnesota 55111. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: James M. Engel (see **ADDRESSES** section) at 612/725-3276 or FTS 725-3276.

SUPPLEMENTARY INFORMATION:**Background**

Cirsium pitcheri (Pitcher's thistle) was discovered by Z. Pitcher in the 1820's and first described by Torrey as *Chicus pitcheri* (Eaton 1829); the first use of the current binomial was by Torrey and Gray in 1841. *Cirsium pitcheri*, a member of the composite or sunflower family, Asteraceae, possesses dense white-wooly and deeply divided leaves

with long petioles (Smith 1966, Alverson 1981). Other general characteristics include cream-colored or yellowish flowers in heads borne singly or few together on numerous stem branches up to 30 inches (0.76 meters) tall (Alverson 1981). Flowering occurs in late May and seed dispersal begins in late July (Keddy and Keddy 1984).

Cirsium pitcheri occurs primarily in the dry sand of stabilized, well developed dunes along the shorelines of the Great Lakes. It is also found in dry areas of loose sand ("sand blows" or "blowouts") behind main dunes in open areas of older dunes from higher Pleistocene lake levels (Alverson 1981). Plants are frequently found on the lower, moist to wet areas of the beach which are more frequently inundated and disturbed by storm wave action (Alverson 1981). Apparently, *Cirsium pitcheri* can tolerate infrequent disturbance to its habitat (i.e., once every 5-10 years), and it has also been shown to colonize disturbed areas. Periodic disturbance of this species' habitat apparently helps maintain an earlier successional stage of sparsely vegetated, open dunes; colonies of these plants appear to thrive on sites with these ecological conditions. These earlier-to-mid successional stage sites are well drained and support dry sand, prairie-like vegetation communities; sites are sunny and open (Nepstad 1981). However, colonies of this plant do not tolerate frequent (i.e., monthly to annual) modification or disturbance to their habitat (see discussion below).

This plant appears to have originated in the Great Plains area and migrated east to its present range through suitable sandy habitats as the last ice age receded (approximately 8,000 years ago, Moore and Frankton 1963). *Cirsium pitcheri* is closely related to *Cirsium canescens*, a plant characteristic of the western U.S. Sand Hills flora (Ownby and Hsi 1963).

The greatest part of the species' range is in Michigan, where it occurs in 18 counties along Lakes Huron, Michigan, and Superior (Nepstad 1981). Although the plant is still widespread in Michigan, it depends on dynamic dune processes that have largely disappeared. The species is restricted to only one or two sites in each of the 18 counties in Michigan. In Wisconsin the species currently exists at eight sites in four counties on the Lake Superior shoreline (Alverson 1981). No known historic colonies of *Cirsium pitcheri* in Wisconsin have been extirpated but present activities have reduced existing colonies, and threats to these colonies continue (Alverson 1981). In Indiana

Cirsium pitcheri is restricted to three sites along Lake Michigan, and in Illinois the species is extirpated. This plant also occurs on lands managed by the U.S. National Park Service (NPS) (Indiana Dunes National Lakeshore in Indiana, and Sleeping Bear Dunes and Pictured Rocks National Lakeshores in Michigan), and on a small (100 yard or 91 meter) stretch of shoreline on Lake Michigan (Wisconsin) that is managed by the U.S. Coast Guard. It also occurs on numerous sites within State Parks in Indiana, Michigan, and Wisconsin, and on one site in Ontario, Canada.

Cirsium pitcheri may require up to five years to reach its flowering stage, and seeds are dispersed by a pappus which acts like a parachute for wind dispersal (Keddy and Keddy 1984). Most seeds are dispersed and settle downwind (inland) from parents, and seedling clusters appear to result from seeds that are dispersed with entire heads rather than separate achenes (Keddy and Keddy 1984). Because of their weight, entire seed heads are also more likely to be buried in the sand than are individual seeds. Keddy and Keddy (1984) suggest that dispersal of entire heads rather than separate achenes may be a mechanism that restricts seedling establishment to a narrow band of open beach rather than having all seeds blow inland to shrub and forest habitats. The combination of these reproductive factors, and other life-history requirements, may restrict these plants to clusters in narrowly-defined microhabitats along shorelines of the Great Lakes. These reproductive limitations may also affect the selection of conservation strategies that might be used to protect this species (see discussion in Factor E of the "Summary of Factors Affecting the Species" section).

Federal government actions on this species began on December 15, 1980, when the Service published a revised notice of review for native plants (45 FR 82480). *Cirsium pitcheri* was included in that notice as a Category 1 species. Category 1 includes those species for which the Service has sufficient biological data to propose to list them as endangered or threatened species. In subsequent notices published on November 28, 1983 (FR 48 53640), and September 27, 1985 (50 FR 39526), *Cirsium pitcheri* remained in Category 1.

Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 et seq.) and regulations (50 CFR Part 424) promulgated to implement the listing provisions of the Act set forth the

procedures for adding species to the Federal Lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Cirsium pitcheri* (Torrey) Torrey and Gray are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* The development of beaches has and will continue to reduce the range of *Cirsium pitcheri*. In Michigan, approximately 5-10 percent of this species' suitable habitat has been lost due to construction of roads, houses, and other facilities (Sue Christman, Michigan Natural Heritage Program, personal communication, 1987). Although there has been little documented loss of *Cirsium pitcheri* from sites throughout this plant's range, many colonies have been reduced in size (Alverson 1981). The reduction of colony size may severely hamper the ability of this plant to recolonize sites that are disturbed naturally (i.e., high water) (see discussion in Factor E of this section).

Historical records indicate that this plant may have occurred on the shores of Lake Michigan in Illinois (Paulson and Schwegman 1976), but recent surveys have failed to relocate any colonies in this State. There are no data to indicate how these colonies might have been lost.

As indicated in the "Background" section, this plant can withstand periodic disturbance to its habitat, and may colonize sites where disturbance creates an earlier successional stage (i.e., open grass dune). However, frequent disturbance and trampling destabilize dunes resulting in reduction or loss of *Cirsium pitcheri* colonies. In addition, road and housing construction result in the permanent loss of dune habitat. In some areas dunes have been bulldozed to reduce relief to provide a better view of the lake for cottage residents (Alverson 1981). On private land some landowners have attempted to eradicate the species because they believed it was a weed (Alverson 1981). As far as is known, all attempted eradications have been via mechanical means; there are no reports of chemical applications. There are sites within the range of *Cirsium pitcheri* that appear to be suitable, but there are no individual plants or colonies on these sites (Nepstad 1981). Whether this is due to human disturbance, ecological limitations, or environmental factors is unknown.

As previously mentioned, this plant occurs on various public lands, including

three National Lakeshores, a small stretch of shoreline managed by the U.S. Coast Guard, and several State parks. Although the maintenance of quality shoreline habitat is an objective of agencies who manage these lands, hikers, campers, swimmers, and others using beach areas unknowingly disturb or trample *Cirsium pitcheri*. Again, these activities appear to be detrimental only when they occur frequently (i.e., monthly to yearly) over a period of years.

The Indiana Dunes, Sleeping Bear Dunes, and Pictured Rocks National Lakeshores are managed by the NPS, and management plans for these sites have provisions for protecting colonies of these plants. No other current or planned projects appear to threaten the existence of this plant of these National Lakeshores. The NPS is currently evaluating a request for road access through the Indiana Dunes National Lakeshore to a proposed marina on private land. However, neither the road nor proposed marina site have any known colonies of *Cirsium pitcheri*, although some colonies occur in the general area.

The Coast Guard operates a lighthouse on a 100 yard (91 meter) stretch of shoreline that has a colony of *Cirsium pitcheri*. That agency neither currently conducts nor plans to conduct any activities that would threaten *Cirsium pitcheri* on this stretch of shoreline.

B. Overutilization for commercial, recreational, scientific or educational purposes. Not applicable.

C. Disease or predation. White *et. al.* (1983) report that total seed production of *Cirsium pitcheri* in Pukaskwa National Park, Ontario is reduced by larvae of a plume moth (*Platyptilia carduidactyla*) that feed on immature seeds, and Nepstad (1981) states that juvenile plants are lost due to herbivory by rabbits. It is not known if these forms of predation threaten *Cirsium pitcheri*.

D. The inadequacy of existing regulatory mechanisms. *Cirsium pitcheri* is listed as threatened by Indiana, Michigan, and Wisconsin, and as rare in Ontario. However, State listing does not protect this plant's habitat, and habitat modification appears to be the principal reason for this plant's decline.

E. Other natural or manmade factors affecting its continued existence. As previously mentioned, this plant appears to have reproductive characteristics that limit its establishment to clusters within narrow ecological conditions in open dunes along lakeshores. Because of its limited ability to disperse seed and establish seedlings, this plant may require relatively large colonies to effectively colonize and recolonize

naturally and artificially disturbed sites. Reduction of colony size due to frequent, human-induced disturbance may decrease the ability of this plant to recolonize sites that are disturbed by natural phenomena such as high water. For example, 100 acres (42 hectares) of habitat was recently lost in Wisconsin due to high water (June Doggerpuhl, Wisconsin Department of Natural Resources, personal communications). The probability of successful recolonization of this site after the water recedes is greater if the colony size is large prior to inundation; however, small colonies are less likely to survive. Large colonies are especially important in areas where plants are widely dispersed since this plant does not disperse seed over large distances. In addition to a lowered ability to survive catastrophic events, the fitness of smaller colonies is also more likely to be lowered by predators such as rabbits and larvae of plume moths. Therefore, conservation strategies for this plant should include establishment and maintenance of large clusters rather than numerous small colonies spread out over the entire range of this plant.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to propose this rule. Based on this evaluation, the preferred action is to list *Cirsium pitcheri* as threatened. Threatened as opposed to endangered because the species is not in immediate danger of extinction, but does have a restricted range and is confronted by a variety of problems. Critical habitat is not being proposed for reasons discussed in the following section.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that to the maximum extent prudent and determinable, the Secretary designate any habitat of a species which is considered to be critical habitat at the time the species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not prudent for *Cirsium pitcheri* at this time. Publishing a detailed description and map of this species' habitat might stimulate public interest and make this species more vulnerable to vandalism and taking by collectors. No benefit would be derived from designating critical habitat and so it would not be prudent or beneficial to determine critical habitat for *Cirsium pitcheri* at this time.

Available Conservation Measures

Conservation measures provided to species listed as endangered or

threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following the listing. Some may be undertaken prior to listing, circumstances permitting. Potential habitat management actions that might benefit *Cirsium pitcheri* include: Increasing protection of shorelines within National Lakeshores, setting back succession to an early-to-mid stage on dunes, establishing large colonies of plants in areas with suitable habitat, and reducing frequent disturbance to this plant's habitat throughout its range. The protection required of Federal agencies and the prohibitions against taking are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR Part 402. Section 7(a)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species, the responsible Federal agency must enter into formal consultation with the Service. *Cirsium pitcheri* is known to occur on the Indiana Dunes, Sleeping Bear Dunes, and Pictured Rocks National Lakeshores and on a 100 yard (91 meter) stretch of Lake Michigan that is managed by the U.S. Coast Guard. Habitat management strategies currently employed on the National Lakeshores should eventually help improve the condition of colonies on these sites. No Federal activities or projects are currently proposed on the National Lakeshores that would jeopardize this plant. As mentioned in the "Background" section, the NPS is evaluating a request for road access

through the Indiana Dunes National Lakeshore to a proposed marina. However, neither the use of the road, nor the construction of the proposed marina are expected to impact existing *Cirsium pitcheri* colonies. No current or planned activity of the U.S. Coast Guard is expected to jeopardize any colonies of this plant.

The Act and its implementing regulations found at 50 CFR 17.71 and 17.72 set forth a series of general trade prohibitions and exceptions that apply to all threatened plant species. With respect to *Cirsium pitcheri*, all trade prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.71 would apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export a threatened plant, transport it in interstate or foreign commerce in the course of a commercial activity, or sell or offer it for sale in interstate or foreign commerce, or remove it from areas under Federal jurisdiction and reduce it to possession. Seeds from cultivated specimens of threatened plant species are exempt from these prohibitions provided that a statement of "cultivated origin" appears on their containers. Certain exceptions can apply to agents of the Service and State conservation agencies. The Act and 50 CFR 17.72 also provide for the issuance of permits to carry out otherwise prohibited activities involving threatened species under certain circumstances. It is anticipated that few trade permits would ever be sought or issued for *C. pitcheri*, since the species is not common in cultivation or in the wild. Requests for copies of the regulations on plants and inquiries regarding them may be addressed to the Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, DC 20240 (703/235-1903).

Public Comments Solicited

The Service intends that any final rule adopted will be accurate and as effective as possible in the conservation of endangered or threatened species. Therefore, any comments or suggestions from the public, other concerned governmental agencies, the scientific

community, industry, or any other interested party concerning any aspect of this proposed rule are hereby solicited. Comments particularly are sought concerning:

- (1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to *Cirsium pitcheri*.
- (2) The location of any additional populations of *Cirsium pitcheri* and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;
- (3) Additional information concerning the range and distribution of this species; and
- (4) Current or planned activities in the subject area and their possible impacts on *Cirsium pitcheri*.

Final promulgation of the regulation on *Cirsium pitcheri* will take into consideration the comments and any additional information received by the Service, and such communications may lead to adoption of a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be filed within 45 days of the date of the proposal. Such requests must be made in writing and addressed to the Endangered Species Division (see ADDRESSES section).

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined by the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the Federal Register on October 25, 1983 (48 FR 49244).

References Cited

Alverson, W.S. 1981. Status report on *Cirsium pitcheri* (Torr.) T. & G. Unpub rep. 15 pp.
 Eaton, A. (ed.). 1829. *Cnicus pitcheri* Torrey. P. 180, in Manual of Botany for North America.
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Cirsium pitcheri. Michigan Bot. 23:57-67.
 Moore, R.J. and C. Frankton. 1963. Cytotaxonomic notes on some *Cirsium* species of the western United States. Canadian J. Bot. 41:1553-1567.
 Nepstad, D.C. 1981. *Cirsium pitcheri* Torrey and Gray. Unpub rep. 56 pp.
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 Paulson, G.A. and J. Schwegman. 1976. Endangered, vulnerable, rare and extirpated vascular plants in Illinois. Interim List of Species. Illinois Nature Preserves Commission. Dept. of Conservation. 11 pp. Mimeographed.
 Smith, H.V. 1966. Michigan wildflowers. Cranbrook Inst. of Sci., Bloomfield Hills. 429 pp.
 White, D.J., R.V. Maher, and C.J. Keddy. 1981. *Cirsium pitcheri*. In G.W. Argus and D.J. White (eds). Atlas of the rare vascular plants of Ontario. National Museum of Canada.

Author

The primary author of this proposed rule is John G. Sidle (see ADDRESSES section).

List of Subjects in 50 CFR Part 17

Endangered and threatened wildlife, Fish, Marine mammals, Plants (agriculture).

Proposed Regulation Promulgation

PART 17--[AMENDED]

Accordingly, it is hereby proposed to amend Part 17, Subchapter B of chapter I, Title 50 of the Code of Federal Regulations, as set forth below:

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

Authority: Pub. L. 93-205, 87 Stat. 884; Pub. L. 94-359, 90 Stat. 911; Pub. L. 95-632, 92 Stat. 3751; Pub. L. 96-159, 93 Stat. 1225; Pub. L. 97-304, 96 Stat. 1411 (16 U.S.C. 1531 *et seq.*).

2. It is proposed to amend § 17.12(h) by adding the following, in alphabetical order under Asteraceae, to the List of Endangered and Threatened Plants:

§ 17.12 Endangered and threatened plants.

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Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Asteraceae—Sunflower family:						
<i>Cirsium pitcheri</i>	Pitcher's thistle	U.S.A. (IL, IN, MI, WI), Canada (Ontario)	T		NA	NA

Dated: July 9, 1987.
 Susan Recce,
 Acting Assistant Secretary for Fish and Wildlife and Parks.
 [FR Doc. 87-16359 Filed 7-17-87; 8:45 am]
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