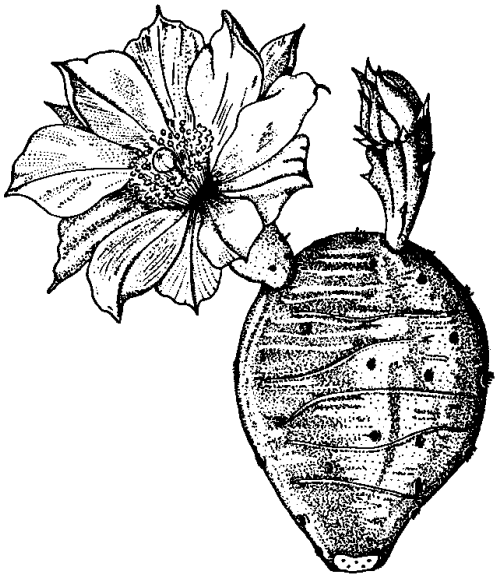
# COSEWIC
# Assessment and Update Status Report

on the

# Eastern Prickly Pear Cactus
*Opuntia humifusa*

**in Canada**



**ENDANGERED**
**2000**

**COSEWIC**
COMMITTEE ON THE STATUS OF
ENDANGERED WILDLIFE
IN CANADA

**COSEPAC**
COMITÉ SUR LA SITUATION DES
ESPÈCES EN PÉRIL
AU CANADA

COSEWIC status reports are working documents used in assigning the status of wildlife species suspected of being at risk. This report may be cited as follows:

Please note: Persons wishing to cite data in the report should refer to the report (and cite the author(s)); persons wishing to cite the COSEWIC status will refer to the assessment (and cite COSEWIC). A production note will be provided if additional information on the status report history is required.

COSEWIC 2000. COSEWIC assessment and update status report on the eastern prickly pear cactus *Optunia humifusa* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 7 pp.

White, D.J. 1998. Update COSEWIC status report on the eastern prickly pear cactus *Opuntia humifusa* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. 1-7 pp.

Previous report:

Klinkenberg, B. and R. Klinkenberg. 1985. COSEWIC status report on the eastern prickly pear cactus *Opuntia humifusa* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. 43 pp.

For additional copies contact:

COSEWIC Secretariat
c/o Canadian Wildlife Service
Environment Canada
Ottawa, ON
K1A 0H3

Tel.: (819) 997-4991 / (819) 953-3215
Fax: (819) 994-3684
E-mail: COSEWIC/COSEPAC@ec.gc.ca
http://www.cosewic.gc.ca

Également disponible en français sous le titre Rapport du COSEPAC sur la situation de l'oponce de l'Est (O*puntia homifusa*) au Canada — Mise à jour

Cover illustration:
Eastern prickly pear cactus — Reprinted with permission from *The New Britton and Brown Illustrated Flora of the Northeastern United States and Adjacent Canada* (Volume 2), copyright 1952. The New York Botanical Garden.

©Minister of Public Works and Government Services Canada, 2002
Catalogue No. CW69-14/98-2002-IN
ISBN 0-662-31704-1

Recycled paper

# COSEWIC
# Assessment Summary

**Assessment Summary – May 2000**

**Common name**
Eastern prickly pear cactus

**Scientific name**
*Opuntia humifusa*

**Status**
Endangered

**Reason for designation**
Two existing natural populations with one near extirpation and continued threats from collection.

**Occurrence**
Ontario

**Status history**
Designated Endangered in April 1985. Status re-examined and confirmed Endangered in April 1998 and in May 2000. May 2000 assessment based on new quantitative criteria applied to information from the existing 1998 status report.

# COSEWIC
# Executive Summary

## Eastern Prickly Pear Cactus
*Optuntia humifusa*

### Description

Eastern Prickly Pear (*Opuntia humifusa*) is a low, spreading, succulent cactus with jointed, roundish but flattened green stems. Leaves are generally absent but the stems are sparsely covered with clusters of barbed bristles and spines. Large, waxy, yellow flowers with red centres appear in June. The edible fruit are oblong and turn red when mature. Prickly Pear occurs as small patches or large scattered colonies of thousands of stems.

### Distribution

The cactus occurs in the United States from New England and Wisconsin south to Texas and Florida. Its only Canadian occurrence is in southwestern Ontario at Point Pelee National Park and the southern tip of Pelee Island.

### Habitat

Prickly Pear Cactus requires a dry substrate that is in the early stages of succession. Both sites are on sand spits that jut into Lake Erie.

### General biology

This is a low-growing cactus that is of interest to many gardeners. It is easy to remove and conceal a stem segment, transport it, and root it in the garden, thus putting the original colony at risk.

### Population size and trends

In 1985, the cactus was known from four stations in southwestern Ontario. Since that time, two of the stations have been shown to be transplants and the third has declined and is now very precarious. The fourth station is robust and occurs in a national park.

## Limiting factors and threats

The main limiting factor is the lack of dry, sandy, open habitat in the warm climate of extreme southwestern Ontario. Such areas receive much recreational use and are at risk from vegetation succession.

## Existing protection

The species is protected under the Ontario Endangered Species Act. The station in Point Pelee National Park now has a management plan to protect and maintain the cactus. The other site has been designated a Nature Reserve. Some management has been carried out in the Nature Reserve to curtail the succession of woody vegetation but there is no formal management plan.

## COSEWIC MANDATE

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) determines the national status of wild species, subspecies, varieties, and nationally significant populations that are considered to be at risk in Canada. Designations are made on all native species for the following taxonomic groups: mammals, birds, reptiles, amphibians, fish, lepidopterans, molluscs, vascular plants, lichens, and mosses.

## COSEWIC MEMBERSHIP

COSEWIC comprises representatives from each provincial and territorial government wildlife agency, four federal agencies (Canadian Wildlife Service, Parks Canada Agency, Department of Fisheries and Oceans, and the Federal Biosystematic Partnership), three nonjurisdictional members and the co-chairs of the species specialist groups. The committee meets to consider status reports on candidate species.

## DEFINITIONS

| | |
|---|---|
| Species | Any indigenous species, subspecies, variety, or geographically defined population of wild fauna and flora. |
| Extinct (X) | A species that no longer exists. |
| Extirpated (XT) | A species no longer existing in the wild in Canada, but occurring elsewhere. |
| Endangered (E) | A species facing imminent extirpation or extinction. |
| Threatened (T) | A species likely to become endangered if limiting factors are not reversed. |
| Special Concern (SC)* | A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events. |
| Not at Risk (NAR)** | A species that has been evaluated and found to be not at risk. |
| Data Deficient (DD)*** | A species for which there is insufficient scientific information to support status designation. |

* Formerly described as “Vulnerable” from 1990 to 1999, or “Rare” prior to 1990.
** Formerly described as “Not In Any Category”, or “No Designation Required.”
*** Formerly described as “Indeterminate” from 1994 to 1999 or “ISIBD” (insufficient scientific information on which to base a designation) prior to 1994.

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) was created in 1977 as a result of a recommendation at the Federal-Provincial Wildlife Conference held in 1976. It arose from the need for a single, official, scientifically sound, national listing of wildlife species at risk. In 1978, COSEWIC designated its first species and produced its first list of Canadian species at risk. Species designated at meetings of the full committee are added to the list.

Environment Canada | Environnement Canada
Canadian Wildlife Service | Service canadien de la faune

Canada

The Canadian Wildlife Service, Environment Canada, provides full administrative and financial support to the COSEWIC Secretariat.

# Update
# COSEWIC Status Report

on the

# Eastern Prickly Pear Cactus
*Opuntia humifusa*

**in Canada**

David J. White[1]

1998

[1]R.R. No. 3
Lanark, ON
K0G 1K0

# TABLE OF CONTENTS



**List of figures**

## INTRODUCTION

Eastern Prickly Pear Cactus (*Opuntia humifusa* (Raf.) Raf.) was designated as endangered in 1985 due to its limited number of locations in Canada, its decline at most sites, and the continued threat posed by horticultural collectors (Klinkenberg & Klinkenberg, 1985). Prior to 1985, the plant was known from a small population on Pelee Island, from 13 sites within Point Pelee National Park, and from two small, inland populations in Kent County. Prickly Pear Cactus requires dry, sandy habitats in an early successional stage (Klinkenberg & Klinkenberg, 1985).

Field work at the Pelee Island site in 1984 by the status report authors, just prior to designation, discovered that the colony had been greatly reduced—apparently by winter storms—from the 18 patches seen in 1981 to only 4 patches (Klinkenberg & Klinkenberg, 1985). In Point Pelee National Park, 19 separate sites were reported in 1976 but only 13 could be confirmed in 1983 (Klinkenberg & Klinkenberg, 1985). Some of the sites within the park are the result of transplantations and hence are not native locations. Although the populations within the park are ostensibly protected from horticultural collectors, evidence at the time of the status report indicated that cacti were still being removed from the park (Klinkenberg & Klinkenberg, 1985). The two Kent County sites—documented in the 1985 status report—were later determined to be transplants from Point Pelee Park (Klinkenberg, 1987).

## DISTRIBUTION

Eastern Prickly Pear Cactus occurs in the United States from New England and Wisconsin south to Texas and Florida. Its only Canadian occurrence is in southwestern Ontario. There are two extant, native locations: Point Pelee National Park and the southern tip of Pelee Island (Figure 1).

## PROTECTION

Since the designation of Eastern Prickly Pear Cactus as an endangered species, steps have been taken—formally and informally—to enhance the species' chances of survival in Ontario. The cactus is protected under the Ontario Endangered Species Act. The Pelee Island station has been designated as the Fish Point Nature Reserve. The reserve is managed by the Ontario Ministry of Natural Resources, and there has been much discussion among ministry staff as to what steps are needed to maintain the Eastern Prickly Pear Cactus there. Allen Woodliffe is the district ecologist for the Ontario Ministry of Natural Resources' Chatham District and he has been monitoring the Pelee Island population of *Opuntia* for a number of years. Although no formal recovery plan has been developed for the cactus on Pelee Island, Woodliffe has done some manual clearing of competing shrubby vegetation—Common Juniper (*Juniperus communis*), young Ash saplings (*Fraxinus* spp), and Fragrant Sumac (*Rhus aromatica*)—at the site in the last year or two (A. Woodliffe, pers. com., 1997).

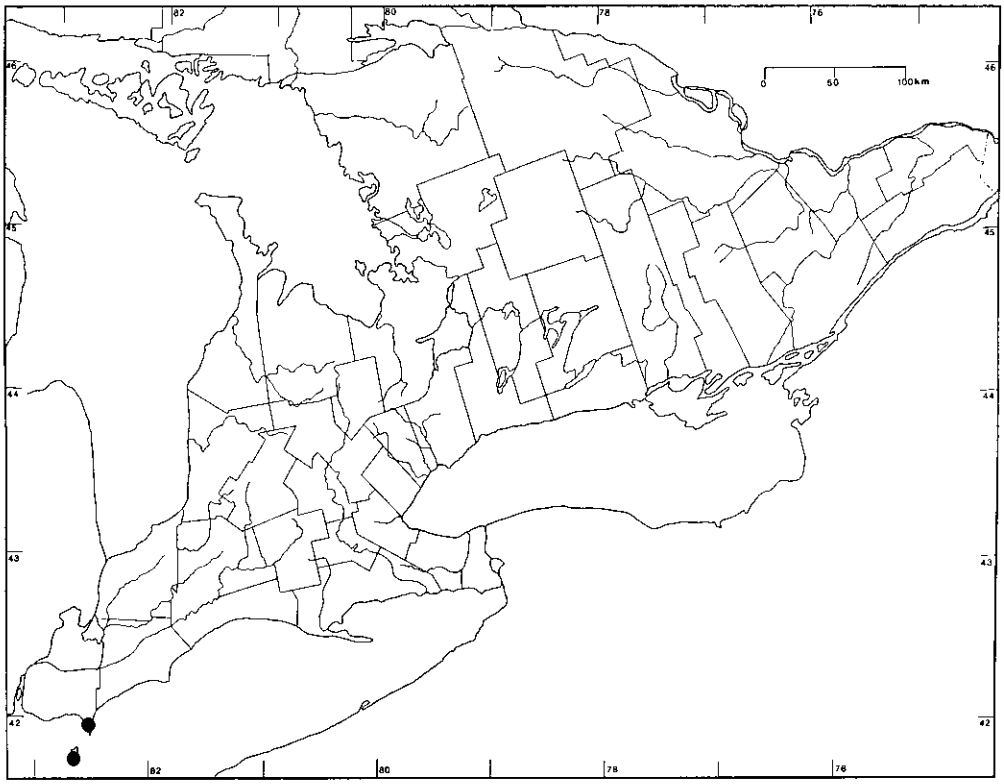



Figure 1. Extant locations for Eastern Prickly Pear Cactus (solid black circles).

Point Pelee National Park has taken steps to thoroughly inventory the cactus within the park and has developed a management plan for the species within the park. According to the park's management plan, cactus sites that occur in communities to be maintained as open habitats, will be cleared of woody vegetation every 5-10 years; cactus sites that are at risk from shading in communities that are to be left to natural succession will be transplanted to sites that will be maintained as open communities; and cactus sites that are at risk from trampling or plant removal will have trails re-routed or public access curtailed (Canadian Parks Service, 1991). Since the 1995 inventory (Whitehead, 1995b), no further cactus monitoring or management has been done in Point Pelee Park (F. Michano, pers. com., 1997).

## POPULATION SIZE AND TRENDS

A thorough inventory was undertaken in 1984 to determine the extent and distribution of the cactus within Point Pelee National Park (Jock, 1984). This study located 31 patches but found many to be small and some of the previously known patches had disappeared or were being crowded out by competing vegetation (Jock, 1984). Although the cactus is unquestionably native in the park, some populations are the result of intentional introductions and transplants by park staff and former cottage owners (Jock, 1984).

Further monitoring in the park was conducted in 1992 (Chiarot, 1992) and located 42 patches. Although this appears to be a significant increase in patches from the count of 9 sites in 1971 and 31 sites in 1984, the apparent increase may be due to primarily to differences in methodology (Whitehead, 1995a). Whitehead (1995b) recorded 85,968 clades (commonly called “pads” or “links”)—an apparently significant increase from the 1971 estimate of 24,000 links made by Ross (1971), however, the methods of Ross are not clear and the 1971 data are probably not comparable to the counts made by Whitehead in 1995 (Whitehead, 1995b). Overall, the Point Pelee populations appear to be in very good condition but it is not known whether the populations are stable, have increased, or have declined since the status designation (Whitehead, 1995b).

The Pelee Island population is much more precarious. From the 1984 count of 4 clumps, the cactus had increased to 7 or 8 clumps by the fall of 1996 but only about 4 plants could be found in 1997 (A. Woodliffe, pers. com., 1997).

## HABITAT

Eastern Prickly Pear Cactus requires a dry substrate that is in the early stages of succession (Chiarot, 1992). Both extant sites are on sand spits that jut into Lake Erie. Habitat changes that are detrimental to the cactus on Pelee Island and in Point Pelee Park are mainly habitat loss due to winter storms and natural succession by woody vegetation that shades out the cactus (A. Woodliffe, pers. com., 1997; Canadian Parks Service, 1991).

## BIOLOGY

It is very easy to move or transplant Eastern Prickly Pear Cactus. The clades (flattened stem segments) detach easily and will root readily when placed on the ground (Klinkenberg & Klinkenberg, 1985). This ease of transplanting puts the plant at increased risk because would-be gardeners can easily conceal, transport, and plant viable propagules.

## LIMITING FACTORS

Natural succession by woody vegetation and shoreline erosion—especially during winter storms—are the main threats at both sites. Removal of plants for gardens is a continuing threat at both sites. Since the Pelee Island station is now so small, any plant removal could be catastrophic (A. Woodliffe, pers. com., 1997).

## EVALUATION AND STATUS RECOMMENDATION

When the status designation of endangered was assigned in 1985, Eastern Prickly Pear Cactus was known from Point Pelee National Park, Pelee Island, and two small

inland sites. Since that time, it has been shown that the inland sites are transplants from Point Pelee. The population in Point Pelee National Park is relatively large and healthy. The park populations are at risk from habitat succession, storm damage, and such anthropogenic impacts as trampling and collecting; however, their relatively large size and the management plan developed for the park offer some hope that the cactus there can be protected. The Pelee Island population is very precarious due to its small size. It is vulnerable to the same forces operating in the park but because of the very low numbers of cacti at Pelee Island, the species is at grave risk of being extirpated unless significant efforts are undertaken.

There is reason for optimism in terms of the Point Pelee populations but the decline of the Pelee Island site and the realization of the non-native status of the two Kent County sites shows that, if anything, conditions for the species in Ontario have declined since 1985. Thus, there is little reason to change the designation of endangered status for Eastern Prickly Pear Cactus.

## ACKNOWLEDGEMENTS

Allen Woodliffe, District Ecologist, Ontario Ministry of Natural Resources, Chatham District, provided information on the cactus on Pelee Island that he has been monitoring, at least annually, for a number of years. Dan Reive, Chief Park Warden, Point Pelee National Park, provided information and loaned background reports on the monitoring and proposed management of the cactus within the Park. Mike Oldham, Botanist, Natural Heritage Information Centre, Peterborough, provided a listing of known cactus specimens and records with details of recent confirmations. Funding provided by the Canadian Wildlife Service, Environment Canada.

## LITERATURE CITED

Canadian Parks Service. 1991. Eastern Prickly Pear management plan. 2 vols. Parks Service, Environment Canada.

Chiarot, R. 1992. Eastern Prickly Pear Cactus monitoring report 1992 at Point Pelee National Park. Report prepared for Parks Service, Environment Canada. 42 pp.

Jock, K. 1984. Status report for *Opuntia humifusa* in Point Pelee National Park. Parks Service, Environment Canada. 36 pp.

Klinkenberg, B. 1987. *Opuntia humifusa* (Raf.) Raf. Two pages *in* K.M. Pryer and G.W. Argus, eds. Atlas of the rare vascular plants of Ontario. Part 4. National Museum of Natural Sciences, Ottawa.

Klinkenberg, B. and R. Klinkenberg. 1985. Status report on the Eastern Prickly Pear Cactus (*Opuntia humifusa*) in Canada. Committee on the Status of Endangered Wildlife in Canada. Canadian Wildlife Service, Ottawa. Unpublished report. 35 pp.

Oldham, M.J. 1997. Element Occurrence records of Prickly Pear Cactus (*Opuntia humifusa*) from the database of the Natural Heritage Information Centre, Ontario Ministry of Natural Resources, Peterborough. 4 pp.

Ross, D. 1971. Cactus report: Point Pelee National Park. Unpublished report for Point Pelee National Park.
Whitehead, G. 1995a. Preliminary literature review and proposed methods for the monitoring of the Eastern Prickly Pear Cactus. Report prepared for Parks Service, Environment Canada. 16 pp. + appendices.
Whitehead, G. 1995b. 1995 Eastern Prickly Pear Cactus monitoring report. Report prepared for Parks Service, Environment Canada. 9 pp. + appendices.

## THE AUTHOR

David J. White has a B.Sc. in biology and has been conducting natural area inventories and evaluating the status and significance of rare plants for more than 25 years. He began doing field surveys in 1972 for the International Biological Program. From 1973 to 1983, David was employed by the Canadian Museum of Nature as a research technician. During that period he co-authored a number of publications on rare plants, including the *Atlas of the Rare Vascular Plants of Ontario*. From 1984 to the present, David has worked as a self-employed life science consultant. He has completed projects ranging from natural area inventories and evaluations to reports on invasive species. David has previously written COSEWIC status reports on Ginseng (*Panax quinquefolium*) Golden-seal (*Hydrastis canadensis*), and Branched Bartonia (*Bartonia paniculata*).