

COSEWIC
Assessment and Update Status Report

on the

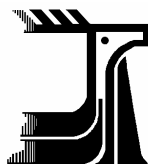
Climbing Prairie Rose
Rosa setigera

in Canada



SPECIAL CONCERN
2003

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 2003. COSEWIC assessment and update status on report on the climbing prairie rose *Rosa setigera* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 15 pp.

Previous Reports:

COSEWIC 2002. COSEWIC assessment and update status on report on the climbing prairie rose *Rosa setigera* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 15 pp.

Ambrose, J.D. 2002. Update COSEWIC status report on the climbing prairie rose *Rosa setigera* in Canada, *in* COSEWIC assessment and update status report on the climbing prairie rose *Rosa setigera* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. 1-15 pp.

Ambrose, J.D. 1986. COSEWIC status report on the climbing prairie rose *Rosa setigera* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. 21 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 du rosier sétigère (*Rosa setigera*) au Canada – Mise à jour

Cover illustration:

Climbing Prairie Rose — Photograph by Jason M. Spangler, Austin, Texas, USA.

©Her Majesty the Queen in Right of Canada 2003
Catalogue No. CW69-14/291-2004E-PDF
ISBN 0-662-35886-4
HTML: CW69-14/291-2004E-HTML
0-662-35997-2



Recycled paper



COSEWIC Assessment Summary

Assessment Summary – May 2003

Common name

Climbing prairie rose

Scientific name

Rosa setigera

Status

Special Concern

Reason for designation

This is a shrub of remnant prairie habitats and clearings that is capable of also colonizing a variety of open disturbed sites within a geographically and climatically restricted region where decline in the extent and quality of habitat continues. Threats include factors such as urban expansion and intensive agricultural land use.

Occurrence

Ontario

Status history

Designated Special Concern in April 1986. Status re-examined and uplisted to Threatened in May 2002. Downlisted to Special Concern in May 2003. Last assessment based on an existing status report with an addendum.



**COSEWIC
Executive Summary**

Updated in 2003

**Climbing Prairie Rose
*Rosa setigera***

Species information

Climbing prairie rose (*Rosa setigera*) is an arching/climbing shrub in the rose family. Flowering plants have trifoliate leaves and large attractive pink flowers that occur from late June to mid-July.

Distribution

This species occurs in central North America, from extreme southwestern Ontario and adjacent Michigan to outlying areas in New York and Pennsylvania, south along the western foothills of the Appalachian Mountains to Georgia and west to eastern Texas. In Ontario it occurs in the extreme southwestern region, primarily in Essex County, with additional populations, in adjacent Chatham-Kent Region and Lambton County and one site just across the Middlesex County line.

Habitat

It is typically found in open habitats with heavy soils, such as early successional old fields as well as prairies and shrub meadows.

Biology

Climbing prairie rose is functionally dioecious (but morphologically the flowers appear perfect), with male and female flowers occurring on separate plants. The flowers are insect pollinated. Seeds are likely bird and/or mammal dispersed and seedlings appear in early successional fields. Individuals are sometimes clonal so each may consist of adjacent crowns of arching stems.

Population sizes and trends

Four core populations are known, each with 5 to 20+ individuals and abundant fruit production. There are likely a few more populations that produce sufficient fruit for

dispersal into adjacent habitats, especially in the northeast part of Windsor. In comparisons with populations surveyed in the early 1980s, five populations have been lost, 10 could not be found but their habitats appear intact, 6 are in decline, 7 are stable and 3 new sites are recorded (plus unverified sight records). Of those 18 sites with abundance data from 1984 (plus three new sites and six sites without previous abundance) numbers of mature individuals have declined from 116 to 64. None were seen at 8 sites lacking previous abundance data. In three new sites and six without previous abundance data there were 28 mature individuals. It is estimated that there are an additional 81 individuals in the 17 sites not re-surveyed (Ambrose, 1984 and NHIC, 2000, most with no abundance data) and at the sightings near Windsor (ERCA, 1992), for a total current population estimate of 145 mature individuals from known sites.

Limiting factors and threats

This species appears dependent on open habitats, old fields recently released from cultivation or more stable shrub meadows and prairies. Human activity, including development of land for housing or other activity, inappropriate land management and recreational use of vehicles in natural areas, is negatively impacting this species.

Special significance of the species

Climbing prairie rose is a component of the open habitats of the Carolinian Zone. With much emphasis on restoring forested habitats, species of meadows and prairies often receive less attention. Biologically it is unusual for a rose, being both a climber and dioecious.

Summary of status report with addendum

The species has experienced a decline in number of sites and a decline in population sizes in most of the sites resurveyed from the 1984 status report. However, additional sites have been recorded at the Natural Heritage Information Centre and by the Essex Region Conservation Authority and there are still several populations with secure population sizes and continuing evidence of reproduction and recruitment of seedlings on new sites.

In early 2003, the Ontario Ministry of Natural Resources (OMNR) submitted an addendum to the update Status Report on the climbing prairie rose, based on new information from surveys done by OMNR in 2002. This addendum is presented hereafter.

**Addendum to the
Update COSEWIC Status Report**

on the

Climbing Prairie Rose
Rosa Setigera

Michael J. Oldham
Kelly Ramster
P. Allen Woodliffe

2003

Ontario Natural Heritage Information Centre
Ministry of Natural Resources
P.O. Box 7000 Peterborough
ON K9J 8M5

In 1986 COSEWIC designated Climbing Prairie Rose (*Rosa setigera*) as nationally Vulnerable (now Special Concern), based on the status report by Ambrose (1986). Based on an Update COSEWIC Status Report (Ambrose 2001a), this status was upgraded to nationally Threatened in May 2002. Ontario's Committee on the Status of Species at Risk in Ontario (COSSARO) recently recommended a status of Special Concern in Ontario. This addendum to the 2001 Update COSEWIC Status Report presents information relevant to the status of Climbing Prairie Rose which was either not included in the Update COSEWIC Status Report or gathered subsequent to it.

In the original COSEWIC status report Ambrose (1986) reported Climbing Prairie Rose from 33 extant and one historic site in Canada. All sites were in southwestern Ontario except for the historic site in Prince Edward County at the eastern end of Lake Ontario. In the Update COSEWIC Status Report Ambrose (2001a, 2001b) reported the species from 52 extant sites, 19 of which were confirmed during fieldwork. By extracting additional records from several reports on natural areas in Essex County (Johnson and Wannick 1977; Oldham 1983; Essex Region Conservation Authority 1992; Essex Region Conservation Authority 1994; Kamstra, Oldham and Woodliffe 1995; Prince, Silani and Associates 1996) in combination with recent survey data gathered by the Ontario Ministry of Natural Resources (Woodliffe 2002), we now have information on 104 sites for Climbing Prairie Rose in Ontario.

Most of the core Climbing Prairie Rose populations are under protection (Ambrose 2001a) and the species occurs in the following protected areas: Wheatley Provincial Park, Ojibway Prairie Provincial Nature Reserve, Fish Point Provincial Nature Reserve, Lighthouse Point Provincial Nature Reserve, Devonwood Conservation Area, Ruscom Shores Conservation Area, Maidstone Conservation Area, Hillman Marsh Conservation Area, Tilbury West Conservation Area, Wheatley Conservation Area, Point Pelee National Park, and Stone Road Alvar (jointly owned by Essex Region Conservation Authority, Nature Conservancy Canada, and Federation of Ontario Naturalists). The species also occurs in other sites with some degree of protection, such as Areas of Natural and Scientific Interest (e.g. Cedar Creek, Springarden Road Prairie), Environmentally Significant Areas (e.g. Sandwich West Woodlot, Middle Point), Boy Scout Camp (e.g. Canard River Scout Camp), and First Nations Reserves (e.g. Walpole Island, St. Anne Island).

Of the 104 known Climbing Prairie Rose sites, 82 are presumed to be extant (verified within the past 20 years), 17 are considered historic (not seen in the past 20 years, but suitable habitat probably still present), and 5 sites are extirpated (extensive surveys have not revealed plants and/or suitable habitat is no longer present). Thirty-seven of the 104 Climbing Prairie Rose sites were contained in various natural area survey reports but not included in Ambrose (1986, 2001a, 2001b) and 16 were discovered in 2002 by P.A. Woodliffe, subsequent to the Update COSEWIC Status Report. Note that on the accompanying distribution map, one extant record from Middlesex County and one extirpated record from Prince Edward County are not mapped.

Based on the information presented above and in Woodliffe (2002), we believe that the abundance of Climbing Prairie Rose has been underestimated in the two COSEWIC

status reports. Additional surveys and earlier information not included in the Update COSEWIC status report indicate that this species is known from between 82 and 99 extant Canadian sites and we are convinced that additional surveys would reveal even more populations. This species is quite inconspicuous when not in flower, is easily confused with other rose species, and some populations flower infrequently or not at all in dry years (such as 2001 when fieldwork was conducted for the COSEWIC update status report). Ambrose (2001a) estimated 125-150 mature individuals in Canada, however Woodliffe (2002) located 491 clumps (443 of which were flowering) during surveys in a portion of the species' range in 2002. These results indicate that the true abundance of Climbing Prairie Rose has been grossly underestimated in the Update COSEWIC Status Report.

Climbing Prairie Rose is an opportunistic early successional species that colonizes roadsides, ditches, abandoned fields and other similar open areas. The suggested decline in Climbing Prairie Rose (Ambrose 2001a) was based on a resurvey in 2001 of sites visited in 1984. Because many of these sites have become more overgrown in the 17 years between surveys, it is to be expected that an early successional species such as this one would decline at some of these sites.

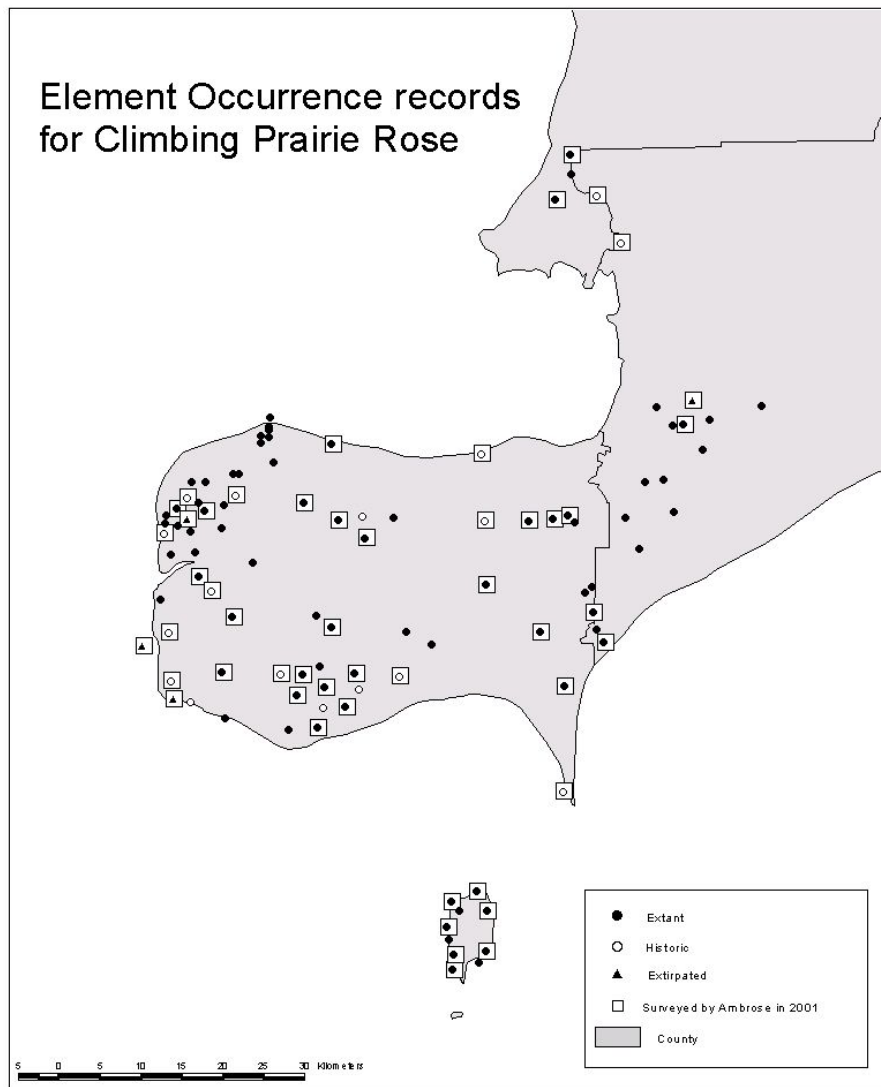
ACKNOWLEDGEMENTS

Kara Brodribb kindly prepared the accompanying map and Alan Dextrase, Irene Bowman, and Kara Brodribb reviewed a draft of this report and provided useful comments.

LITERATURE CITED

- Ambrose, J.D. 1986. Status report on the Climbing Prairie Rose (*Rosa setigera*). Committee on the Status of Endangered Wildlife in Canada (COSEWIC).
- Ambrose, J.D. 2001a. Update COSEWIC Status Report on Climbing Rose (*Rosa setigera*). Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 17 pp.
- Ambrose, J.D. 2001b. Precise locations for all known extant (and recently extirpated) populations of *Rosa setigera*. Confidential appendix of "Update COSEWIC Status Report on Climbing Rose (*Rosa setigera*)", dated November 2, 2001. 6 pp.
- Essex Region Conservation Authority. 1992. City of Windsor Candidate Natural Heritage Site Biological Inventory Evaluation Report December 1992. Essex Region Conservation Authority, City of Windsor (Department of Planning, Department of Parks and Recreation). 212 pp.
- Essex Region Conservation Authority. 1994. Environmentally Significant Areas Status Update. Unpublished report. Essex Region Conservation Authority, Essex.
- Johnson, J.W. and W. Wannick. 1977. A Study of Biologically Significant Natural Areas of the Essex Region. Essex Region Conservation Authority, Essex, Ontario. 563 pp.

- Kamstra, J., M.J. Oldham, and P.A. Woodliffe. 1995. A Life Science Inventory and Evaluation of Six Natural Areas in the Erie Islands (Ontario). Ontario Ministry of Natural Resources. 140 pp. + appendices + maps.
- Oldham, M.J. 1983. Environmentally Significant Areas of the Essex Region: A Background Report to the Essex Region Conservation Plan. Essex Region Conservation Authority, Essex, Ontario. viii + 426 pp.
- Prince, Silani and Associates Ltd. 1996. Candidate Natural Heritage Area Biological Inventory and Land Use Planning Policy Direction. Discussion Paper No. 1. Town of Lasalle, Ontario. 102 pp.
- Woodliffe, P.A.. 2002. A Survey of Climbing Prairie Rose (*Rosa setigera*) in parts of Essex and Chatham-Kent. Ontario Ministry of Natural Resources, Alymer District, Chatham Area.. 5 pp. + figures, table and appendix.



Revised Technical Summary Information

prepared by the

COSEWIC Vascular Plants Specialists Subcommittee

for

Climbing Prairie Rose

Rosa setigera

(based on the Addendum submitted by the Ontario Ministry of Natural resources)

Facts:

- Perennial shrub of open habitats, opportunistic and adaptable to various sites and prone to extirpation at sites subject to shading due to successional changes
- Currently documented at 82-99 extant Canadian sites (in 2002) of a total of 104 current and historic sites; 33 sites considered extant in 1986
- Documented as occurring in many natural areas and protected sites
- Current counts of mature shrubs, based on 2002 data for only a portion of the species' range, total 491 clumps of which 443 were flowering. This compares with 125-150 estimated in the update report based on fieldwork during 2001, a dry year when flowering was apparently reduced and the shrubs not as readily detected.
- No overall decline in the Canadian population has been demonstrated although historical extirpations are recorded, original prairie habitats have been greatly reduced in size historically, and recent losses and declines in individual populations have been noted; more sites are now known, however, than recorded in the original status report, likely based on more intensive surveys
- Extent of occurrence is about 3200 km²
- Area of occupancy is perhaps 20 km² or more
- Threats include land development (especially in Windsor area); successional changes of open habitats; inappropriate management of conservation areas and roadsides; unrestricted recreational use of all terrain vehicles (ATVs); invasive exotic shrubs.



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

Climbing Prairie Rose
Rosa setigera

in Canada

John D. Ambrose¹

2002

¹34 Norwich Street East
Guelph, ON
N1H 2G6

TABLE OF CONTENTS

SPECIES INFORMATION.....	3
Name and Classification	3
Description.....	3
DISTRIBUTION	4
Global Range.....	4
Canadian Range.....	5
HABITAT	6
Habitat Requirements	6
Trends	6
Protection/Ownership	6
BIOLOGY	7
General.....	7
Reproduction	7
Survival.....	7
Dispersal.....	7
Nutrition and Interspecific Interactions.....	8
Adaptability	8
POPULATION SIZES AND TRENDS.....	8
LIMITING FACTORS AND THREATS	10
SPECIAL SIGNIFICANCE OF THE SPECIES	11
EXISTING PROTECTION OR OTHER STATUS	11
SUMMARY OF STATUS REPORT	11
TECHNICAL SUMMARY.....	12
ACKNOWLEDGEMENTS	14
LITERATURE CITED	14
Pertinent Web Sites.....	14
BIOGRAPHICAL SUMMARY OF AUTHOR.....	15
AUTHORITIES CONSULTED	15
COLLECTIONS EXAMINED	15

List of figures

Figure 1. Flowers of Climbing Prairie Rose	3
Figure 2. North American range of Climbing Prairie Rose.....	4
Figure 3. Distribution of <i>Rosa setigera</i> in Canada.....	5

List of tables

Table 1. Ontario sites of <i>Rosa setigera</i> with available comparative data	9
--	---

SPECIES INFORMATION

Name and Classification

Rosa setigera Michaux, climbing prairie rose, is an arching/climbing shrub in the rose family (Rosaceae). This species was first included as part of *R. carolina* in the late 1700s. In 1803 Michaux described it as a new species. It is taxonomically distinct in its northern range. Details of taxonomic revisions are given in the original status report (Ambrose, 1986) and Lewis (1958).

Description

Climbing prairie rose is a robust shrub with arching or climbing branches, often several metres long and forming peripheral plants where tips of branches touch the ground. Prickles are broad based and recurved. Leaflets are three on flowering branches and three or five on juvenile or vegetative branches. Flowering occurs in late June to mid-July with terminal corymbs (Figure 1) on current year lateral shoots from the previous year's long shoots. Petals are 2-3 cm long, pink; styles are united into an exserted column, fruit is globose and reddish-orange. It is further described and illustrated in Soper & Heimburger, 1982. A photograph is given on the ROM/OMNR web site.

Distinguishing characteristics from other roses: long arching branches, leaflets 3 on flowering stems and 3-5 on vegetative and juvenile stems, prickles broad-based and recurved.



Figure 1. Flowers of Climbing Prairie Rose (Jason M. Spangler, Austin, Texas).

DISTRIBUTION

Global Range

The range of this species is mainly through the central United States, with a small area in adjacent Canada (Figure 2). In the south, it ranges from the western foothills of the Appalachian Mountains, through the Mississippi valley, to eastern Texas. In the north, it reaches southern Michigan and adjacent Ontario, with outlying areas of New York, Pennsylvania and small isolated populations east of the Appalachian Mountains; the latter likely represent introductions from cultivation (Lewis, 1958). Maps are given for the species in the original status report (Ambrose, 1986). These are reproduced by Keddy (1984) and on the ROM/OMNR web site with some updates in localities as given in this update report.

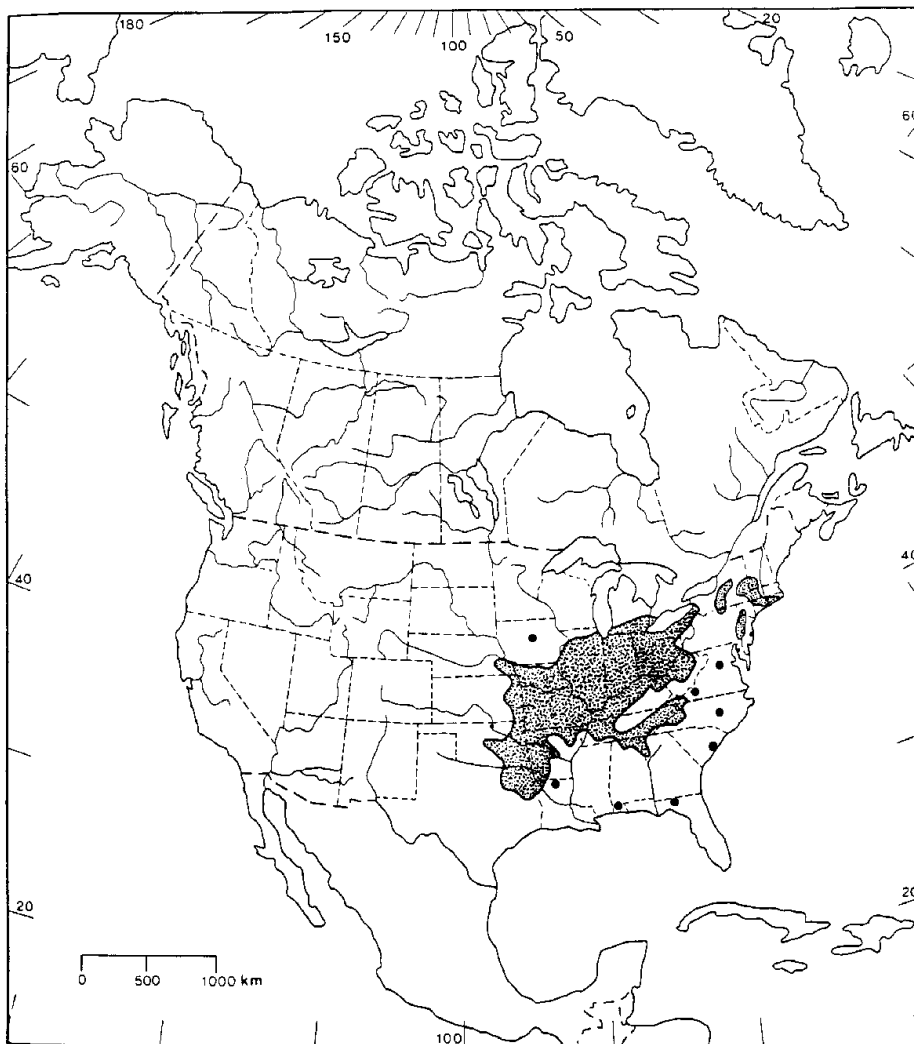


Figure 2. North American range of Climbing Prairie Rose (*Rosa setigera*), based on Lewis 1958.

Canadian Range

In Canada it occurs in extreme southwestern Ontario (Figure 3) with records in Essex County (Amherstburg, Malden, Pelee Island and Tilbury) known since the late 1800s (Macoun, 1883-6). The natural areas within the boundaries of the Essex Region Conservation Authority were thoroughly surveyed and reported by Oldham (1983). It is also known in the adjacent Chatham-Kent Region and Lambton County, and recently just over the county line in Middlesex. One disjunct collection was made in Prince Edward County in 1944 but has not been recently verified.

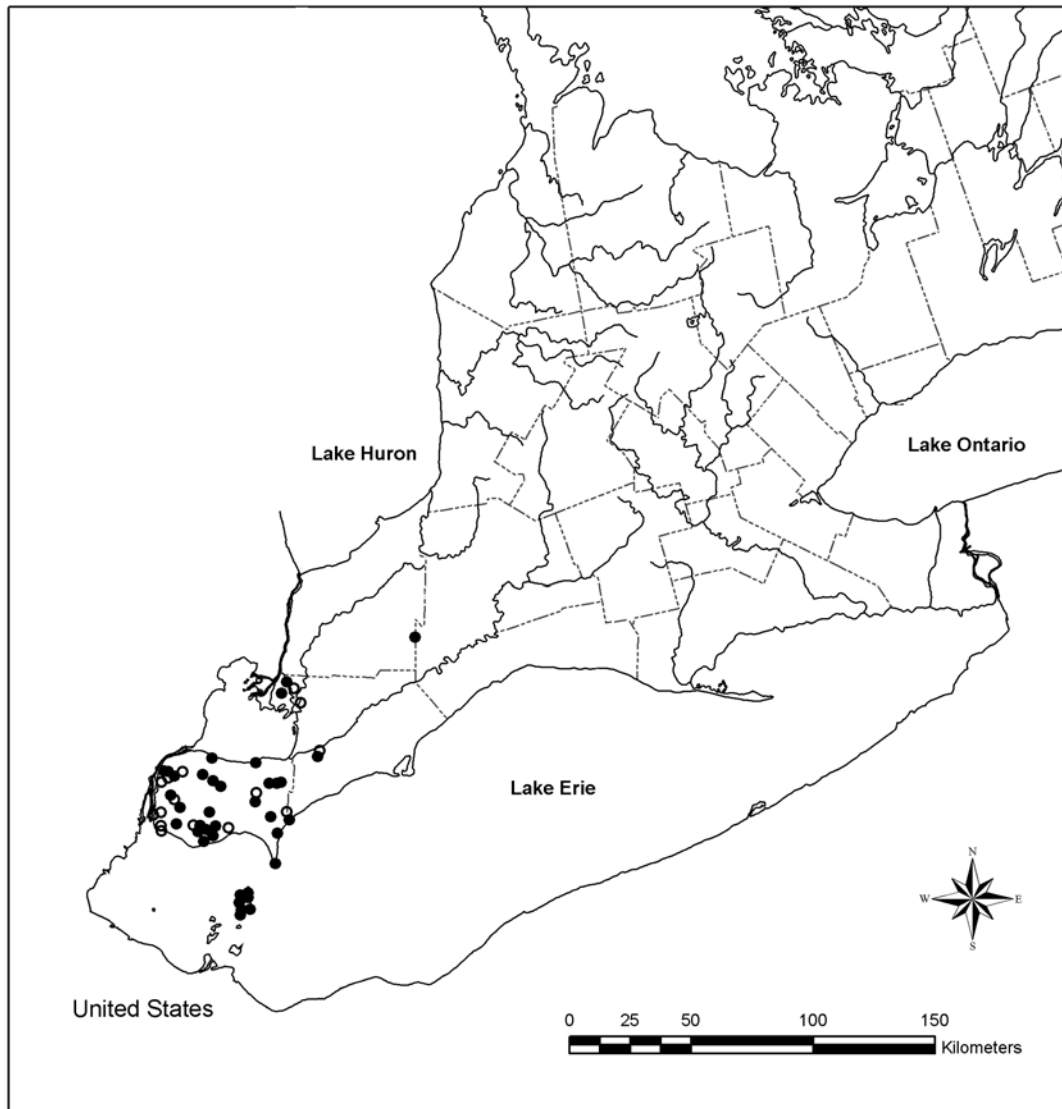


Figure 3. Distribution of *Rosa setigera* in Canada. Each dot corresponds to a site. Hollow circles represent extirpated sites from Table 1, solid circles represent extant sites from Table 1 and presumed extant sites not surveyed in 2000-01.

HABITAT

Habitat Requirements

In Canada, *Rosa setigera* occurs in old fields and shrub thickets, most commonly on sites with moist heavy soils, but occasionally on sandy or shallow soils that dry out during part of the growing season. Climbing prairie rose colonizes open habitats, often in abandoned agricultural fields and vacant urban land. As succession progresses the habitats often become less favourable for this species; senescent individuals can be seen in older shrub thickets. The shifting habitat of this species provides a challenge to making an accurate assessment. With continuing colonization an important factor in maintaining populations on such a landscape, there is a dependence on core populations that can provide abundant seeds for dispersal to new habitats. Very few of these were recorded; they include shrub meadows at Wheatley Provincial Park, St. Clair College prairie, Stone Road Alvar and Rowsoms Conservation Area. There are likely others, such as in the northeastern region of Windsor (ERCA, 1992) where it is indicated as a common shrub in a few natural areas.

It occurs in areas with a long growing season and a climate moderated by Lake Erie. Seedlings establish in open or thinly vegetated fields and meadows (all observations are by the author unless otherwise referenced).

Trends

A comparison of sites resurveyed in 2000-01 with the earlier records in the 1986 status report and Natural Heritage Information Centre (NHIC) records, reveals a decline of about 38% (about 48% loss and 10% gain) in numbers of known sites, with additional unconfirmed sites near Windsor. Habitat is being lost in urban areas, such as around Windsor, as building development continues in peripheral areas. Succession in shrub meadows also leads to degradation or loss of habitat. However, the species colonizes open habitats so there are likely several unrecorded new sites near core populations. Many habitats are maintained by active management for conservation lands (alvars, prairies and savannahs) in southwestern Ontario, but much of the potential habitat is on the edge of agricultural or developed land that is subject to changes in management and loss of habitat quality.

Protection/Ownership

Most of the core populations are under protection; the following have public ownership: Wheatley Provincial Park (provincial); Rowsoms Conservation Area and Hillman Marsh (conservation authority). Stone Road Alvar is owned and managed by the Federation of Ontario Naturalists, Nature Conservancy of Canada and Essex Region Conservation Authority. Walpole Island is managed by the Walpole Island First Nation. About six populations with several individuals each occur on private land around Windsor (ERCA, 1992). Smaller populations occur at Point Pelee National Park (but likely introduced there, V. McKay, pers. comm.) and on other private land.

BIOLOGY

General

Climbing prairie rose is an arching/climbing shrub of old fields and shrub meadows. Its long arching branches and recurved prickles allow it limited climbing ability over other shrubs, but often it is suppressed and ultimately shaded out as nearby shrub growth becomes dense. It is dioecious (Kevan et al., 1990), an unusual condition in roses. Fruit develops on the females and is likely dispersed by birds and small mammals. First year seedlings were not seen in the field surveys, but in a few old fields recently released from cultivation juvenile plants were observed near mature populations. Limited vegetative proliferation occurs from the tips of arching stems.

Reproduction

Flowers are visited by a diversity of pollinating insects, mostly bees and flies. Plants were found to be cryptically dioecious (i.e., male and female plants have morphologically similar flowers). Both males and females produce pollen, although the pollen on the female flowers was not functional in stimulating fruit production in other plants and male plants produce no fruit (Ambrose & Kevan, 1990; Kevan et al., 1990). Being functionally dioecious, isolated individuals are not able to produce fruit. The fruit is a hip, typical of roses, with a fleshy receptacle enclosing hairy achenes. Clonal reproduction is occasionally seen around older plants, in the form of new plantlets developing where the tips of branches touch the ground.

Survival

As a species of early successional or open communities, individuals can be short lived (perhaps 10-20 years) unless conditions are present which keep the habitat open. Where plants were found in the same location as the previous survey in the early 1980s the stems were relatively young indicating new growth from the crown, vegetative plantlets or locally dispersed seeds rather than persistent old stems. Where shrubby vegetation becomes dense this species is suppressed, fails to flower and dies out. In dense vegetation it also appears to be more prone to mildew. In 2000, mildewed flower buds were observed on this species in two dense shrub meadows with several individuals each; they failed to open and no fruit was produced.

Dispersal

The firm fleshy reddish-orange fruit, containing hard seeds, are likely dispersed by birds and mammals. When seed sources are nearby young plants have been observed in old fields in early stages of succession, leading to the conclusion that dispersal is effectively taking place. The rarity of this species in the states to the south and west reduces the likelihood of long distance dispersal into Ontario.

Nutrition and Interspecific Interactions

Pollinating insects and seed dispersers are important for fruit set and seed dispersal to new habitats. Flowers of both male and female plants produce pollen, gathered by pollinating insects, but no nectar. While the pollen of female flowers is non-functional for stimulating fruit production, it appears to provide a nutritional reward to the insects.

Invasive exotic shrubs are seen in some habitats (e.g., *Elaeagnus umbellatus*) and could become significant competitors. For this species of open habitats, natural succession can also reduce the suitability of sites.

Adaptability

Most populations occur in old fields and shrub meadows on heavy soils. A few also occur on sand (Pt. Pelee, Ojibway Prairie and LaSalle) and thin soil over limestone (Stone Road Alvar).

POPULATION SIZES AND TRENDS

Previously known populations appear to be in a decline of about 38%, with about a 21% decline in numbers of individuals, from the comparative data of the 1984 report and 2000/01 surveys. There are several core populations that likely are providing fruit and seeds for establishment of smaller and outlying populations on suitable open habitats. After the completion of the second year of fieldwork, a map of additional populations was provided by Paul Pratt of the city of Windsor, from records compiled in 1992 (ERCA, 1992). On this map are six sites with multiple occurrences noted at the eastern limits of the Windsor boundary, plus others with listed presence to the south. Of the intensively surveyed sites and other records, including the above, it is estimated that there are currently about 145 reproductive individuals (This includes the 64 recorded in Table 1 below plus an estimated additional 81 plants in the unsurveyed sites [2 per site for the 18 Ambrose (1984) and NHC (2000) records, 3 per site in the 15 ERCA (1992) sites around Windsor] for a total estimate in known sites of 145). There are likely another 50 individuals in undocumented populations near core reproductive populations, based on undocumented observations of occurrences in nearby habitats by a local field ecologist (G. Waldron, pers. comm.) and the author's own observations in sites on Pelee Island.

With clonal spread within populations it is not possible to obtain accurate counts of genetic individuals with only field observations; however, when clusters of rose crowns were observed in a population they were considered to be clones and in such situations a multi-crowned cluster is counted as an individual. When the species has occupied a site with a long history of being open the clusters become less clear, such as at the Stone Road Alvar where periodic droughts and fires have maintained its open character. The presence of fruiting in this dioecious species gives a clue that more than one individual is present in isolated populations, such as the one in Middlesex County

(no. 53). However, even this is problematic, since dioecious species typically show a small percentage of hermaphroditic individuals (e.g., *Ptelea trifoliata*, Ambrose et al., 1985).

The sites surveyed are tabulated in Table 1. The site numbers in the table refer to the detailed list of all recently known populations (since 1980). It lists both sites for which there were abundance data suitable for comparison in 2000/01 shown here, as well as other reports without data. Records received at NHIC after the 1984 status report were compiled and the Windsor records are listed in the middle column.

Table 1. Ontario sites of *Rosa setigera* with available comparative data.

Site	Co./ Region	Population location	Ambrose 1984	NHIC, 2000; ERCA, 1992	2000-01 survey
EXTANT					
3	Essex	Colchester S. Tp., 0.5 km NW of Arner	4*		1 TH: S/S
19		Malden Tp., 2.5 km NE of Malden Centre	7 + sev		0 + 3 TH: S/S
23		Mersea Tp, Hillman Marsh	---		NEW SITE 3
27		Pelee Is., Mosquito Pt.	Few		2
28		Pelee Is., Red Cedar Savannah roadside	6		2
29		Pelee Is., Sheridan Pt.	6		2 TH: S/S
30		Pelee Is., Stone Rd. Alvar	10 + 3		6 + sev
31		Pelee Is., W Shore Drive	---		NEW SITE 1
36		Tilbury W. Tp., Comber cemetery	P		1
37		Tilbury W. Tp., Comber sewage lagoon	---	1987: P	2
39		Tilbury W. Tp., Rowsoms C.A.	27 + 2		2[+sev?] + 2
41		Windsor, Ojibway Park and Prairie	---		NEW SITE Few at each
42		Windsor, St. Clair College	3		5 + 6
43		Windsor, Springarden Prairie	P		Few TH: ATV
44		Windsor, east and south	---	NEW SITES Sight records, (ERCA, 1992)	---
45	Ch.-Kent	Chatham Tp., S of Whitebread	3		1
48		Raleigh Tp., 2.5 km SSE of Prairie Siding	4 + 1		0 + 1
50		Romney Tp., Wheatley Prov. Park	P		7 + sev TH: IE
52	Lambton	Walpole Island	4 + 1		2
53	Middlesex	Mosa Tp.	---	1987: 1 colony	8 + 12

Site	Co./ Region	Population location	Ambrose 1984	NHIC, 2000; ERCA, 1992	2000-01 survey
		EXTIRPATED			
1	Essex	Anderon Tp., 2 km. E of Amherstburg	2		0: Extirpated? TH: S/S
6		Colchester S. Tp., 3 km N of Harrow	1		0: Extirpated? TH: S/S
12		Gosfield S. Tp., Jack Minor Woods		1984: P	0: Extirpated?
17		Bois Blanc Island	P		0:EXTIRPATED TH: ID
18		Malden Tp., Knapps Island	P		0: Extirpated?
20		Malden Tp., Green Dragon Woods		1985: P	0: Extirpated?
22		Malden Tp., Willowood	12 + few		0:EXTIRPATED TH: ID
34		Sandwich W. Tp., LaSalle	4		0: Extirpated? TH:ID
35		Sandwich W. Tp., Suzanne S		1990: P	0:EXTIRPATED TH:ID
38		Tilbury W. Tp., Roscom R.	P		0: Extirpated?
40		Windsor, Devonwood C.A.	P		0: Extirpated?
46	Ch.- Kent	Dover Tp.	1		0: Extirpated?
47		Raleigh Tp., 1.5 km E of Prairie Siding	5		0:EXTIRPATED TH:IM
49		Romney Tp., Wheatley C.A.	1		0:EXTIRPATED TH: IM
51	Lambton	St. Anne Island		1987: P	0: Extirpated?
Total			116 + 20 +	8 = 124 + 20	64 + 44

*numbers: reproductive plants + vegetative plants (P = present, no abundance data; few = ~3, sev = ~10). TH = Threats: S/S, succession/shade; ID, incompatible development; IM, inappropriate management; ATV, ATVs making trails through habitat; IE, invasive exotics. EXTIRPATED= none observed and habitat altered; extirpated? = none observed but habitat intact.

LIMITING FACTORS AND THREATS

Four sites have been completely or mostly lost due to incompatible urban development since the 1986 status report. Others have been lost or put in jeopardy by insensitive management of the sites with regard to their natural heritage. Some populations that once occurred along rail lines are now in decline as these have been converted to trails and the vegetation that was once controlled on a regular basis is now allowed to proliferate, making the site less favourable to this species. Similar natural successional processes have also reduced a once significant core population to a few senescent individuals (no. 19, Malden); other smaller populations have experienced similar declines.

SPECIAL SIGNIFICANCE OF THE SPECIES

In Canada, *Rosa setigera* is limited to extreme southwestern Ontario, Essex and adjacent counties. It is the only native climbing rose, is unusual for a rose in being dioecious and has flowers that are very showy. There are no citations for the use of this species on the Native American Ethnobotany Database web site. However, there are numerous listings of other rose species for various medicinal purposes so this species may have been used in a similar manner.

Climbing prairie rose is occasionally available in the specialty native plant horticultural trade.

EXISTING PROTECTION OR OTHER STATUS

The Nature Conservancy gives this species a global rank of G5, a national rank of N2N4 (USA) and N3 (Canada); there are two states where it is listed as imperilled (S1 in Virginia and S2S3 in Michigan) and two states (Iowa S3 and Georgia S3?) and Ontario (S3) where it is listed as vulnerable. For four nearby states it is listed as unranked (S?): Pennsylvania, Ohio, Indiana and Wisconsin. In no state is it listed as secure (S4 or S5) by the most recent listing of 2001, accessible through the NatureServe web site.

It is listed as a species of Special Concern by COSEWIC but is currently without formal protective status in Ontario.

SUMMARY OF STATUS REPORT

Where comparison of current population counts to past estimates is possible, the evidence summarized in Table 1 suggests a decline in numbers of individuals (25%) and occupied habitats (38%). Of the known sites, both from actual counts and estimates of others not surveyed, it is estimated that there are about 145 individual mature shrubs of this species. It was observed to colonize and thrive in early successional old fields and other open habitats, thus there are likely undocumented new populations, possibly reducing the severity of this observed decline.

As pressure increases to develop natural areas around Windsor and at other sites, this species will be in greater jeopardy. However, with better awareness and more sensitive land management, the jeopardy could be greatly reduced. Much of the activity that is causing the loss or decline in populations could be modified to protect this species and other species of plants and animals in jeopardy in open habitats. For example, mowing or herbicide spraying of open meadow habitats, trenching and brush clearing operations along ditches and roadways, parking and trail construction in parkland, and unrestricted use by ATV operators.

TECHNICAL SUMMARY

Rosa setigera	
Climbing prairie rose	Rosier sétigère
Range of Occurrence in Canada: southwestern Ontario, Essex and adjacent counties.	

Extent and Area information																											
• <i>Extent of occurrence (EO)(km²)</i>	<2000 km ²																										
• <i>Specify trend (decline, stable, increasing, unknown)</i>	Stable																										
• <i>are there extreme fluctuations in EO (> 1 order of magnitude)?</i>	No																										
• <i>Area of occupancy (AO) (km²)</i>	15 km ²																										
• <i>Specify trend (decline, stable, increasing, unknown)</i>	Decline, about 38%																										
• <i>are there extreme fluctuations in AO (> 1 order of magnitude)?</i>	No																										
• <i>Number of extant locations</i>	19 confirmed, another 19 sightings 1980-92																										
• <i>Specify trend in # locations (decline, stable, increasing, unknown)</i>	Decline: 5 sites lost, 10 not found, 6 in decline, 7 stable, 4 new.																										
• <i>are there extreme fluctuations in # locations (>1 order of magnitude)?</i>	No.																										
• <i>Habitat trend: specify declining, stable, increasing or unknown trend in area, extent or quality of habitat</i>	Declining; habitat being developed or degraded.																										
Population information																											
• <i>Generation time (average age of parents in the population) (indicate years, months, days, etc.)</i>	3 years to flowering in cultivation (likely longer in the wild).																										
• <i>Number of mature individuals (capable of reproduction) in the Canadian population (or, specify a range of plausible values)</i>	145 estimated from 2001 inventory + sightings since 1980.																										
• <i>Total population trend: specify declining, stable, increasing or unknown trend in number of mature individuals</i>	Slow decline over past 18 years.																										
• <i>if decline, % decline over the last 10 years or 3 generations, whichever is greater (18 year comparison)</i>	21% decline																										
• <i>are there extreme fluctuations in number of mature individuals (> 1 order of magnitude)?</i>	No																										
• <i>Is the total population severely fragmented (most individuals found within small and relatively isolated (geographically or otherwise) populations between which there is little exchange, i.e., < 1 successful migrant / year)?</i>	Total s. Ontario population mostly in clusters: Pelee Is., Windsor, Wheatley, Tilbury, Walpole Is.																										
• <i>list each population and the number of mature individuals in each</i>	<table style="width: 100%; border: none;"> <tr><td>3. Arner</td><td style="text-align: right;">1</td></tr> <tr><td>19. Malden</td><td style="text-align: right;">0</td></tr> <tr><td>24. Hillman Marsh</td><td style="text-align: right;">3</td></tr> <tr><td>27-31 Pelee Is.</td><td style="text-align: right;">13</td></tr> <tr><td>36-7. Comber</td><td style="text-align: right;">3</td></tr> <tr><td>39. Rowsoms C.A. ca.</td><td style="text-align: right;">12</td></tr> <tr><td>41-43. Windsor ca.</td><td style="text-align: right;">14</td></tr> <tr><td>45-6. Whitebread/Pr. Siding</td><td style="text-align: right;">1</td></tr> <tr><td>50. Wheatley Prov. Pk.</td><td style="text-align: right;">7</td></tr> <tr><td>52. Walpole Is.</td><td style="text-align: right;">2</td></tr> <tr><td>53. Mosa Tp.</td><td style="text-align: right;">8</td></tr> <tr><td>19 records not surveyed ca.</td><td style="text-align: right;">81</td></tr> <tr><td>total:</td><td style="text-align: right;">145</td></tr> </table>	3. Arner	1	19. Malden	0	24. Hillman Marsh	3	27-31 Pelee Is.	13	36-7. Comber	3	39. Rowsoms C.A. ca.	12	41-43. Windsor ca.	14	45-6. Whitebread/Pr. Siding	1	50. Wheatley Prov. Pk.	7	52. Walpole Is.	2	53. Mosa Tp.	8	19 records not surveyed ca.	81	total:	145
3. Arner	1																										
19. Malden	0																										
24. Hillman Marsh	3																										
27-31 Pelee Is.	13																										
36-7. Comber	3																										
39. Rowsoms C.A. ca.	12																										
41-43. Windsor ca.	14																										
45-6. Whitebread/Pr. Siding	1																										
50. Wheatley Prov. Pk.	7																										
52. Walpole Is.	2																										
53. Mosa Tp.	8																										
19 records not surveyed ca.	81																										
total:	145																										

<ul style="list-style-type: none"> • <i>specify trend in number of populations (decline, stable, increasing, unknown)</i> 	5 lost, 10 not found, 6 in decline, 7 stable, 4 new
<ul style="list-style-type: none"> • <i>are there extreme fluctuations in number of populations (>1 order of magnitude)?</i> 	No
Threats (actual or imminent threats to populations or habitats)	
<ul style="list-style-type: none"> – land being developed, especially in Windsor area – successional development of open habitats – inappropriate management of conservation areas and roadsides – unrestricted recreational use of all terrain vehicles (ATVs) – invasive exotic shrubs a potential problem 	
Rescue Effect (immigration from an outside source)	
<ul style="list-style-type: none"> • <i>does species exist elsewhere (in Canada or outside)?</i> 	Canada: no. USA, yes.
<ul style="list-style-type: none"> • <i>status of the outside population(s)?</i> 	Globally secure (G5); but S1-S2 in 2 states, S3 in 2 states; nowhere S4 or S5
<ul style="list-style-type: none"> • <i>is immigration known or possible?</i> 	Not known but possible through fruit dispersal.
<ul style="list-style-type: none"> • <i>would immigrants be adapted to survive here?</i> 	Likely if from northern source.
<ul style="list-style-type: none"> • <i>is there sufficient habitat for immigrants here?</i> 	Yes, but problem is loss or degradation of habitat.
Quantitative Analysis	
<p>5 populations lost, 10 not found, 6 in decline, 7 stable, 4 new. Comparative counts from survey populations: 1984: 116 + 20 juveniles, 2000-2001: 64 + 44 juveniles. Total current estimated population of all records: 145 reproductively mature and juveniles.</p>	

ACKNOWLEDGEMENTS

Mike Oldham provided the NHIC Element Occurrence reports and was responsible for many of the early reports in the Essex region. Gerry Waldron provided additional observations for Essex County. Paul Pratt provided observations for Windsor sites near Ojibway Park and Prairie, and a summary of the 1992 ERCA report compiled by Dan Lebedyk for Windsor natural areas. Funding provided by the Canadian Wildlife Service, Environment Canada.

LITERATURE CITED

- Ambrose, J.D., 1986. Status Report on *Rosa setigera* (Rosaceae), a Rare Species in Canada. COSEWIC, Ottawa, 21 pp.
- Ambrose, J.D. & P.G. Kevan, 1990. Reproductive biology of rare Carolinian plants with regard to their conservation management, in G.M. Allen et al. (eds.), *Conserving Carolinian Canada*. University of Waterloo Press, Waterloo.
- Ambrose, J.D., P.G. Kevan & R.M. Gadawski, 1985. Hop Tree (*Ptelea trifoliata*) in Canada: population and reproductive biology of a rare species. *Can. J. Bot.* 63: 1928-35.
- ERCA (Essex Region Conservation Authority), 1992. City of Windsor Candidate Natural Heritage Site Biological Inventory. (15 additional sight records in the city of Windsor, not recorded by NHIC and received after completion of field work and flowering time in 2001.)
- Keddy, C.J., 1984, *Rosa setigera*, in G.W. Argus, K.M. Pryer, D.J. White & C.J., Keddy (eds.), 1982-87. *Atlas of Rare Vascular Plants of Ontario*. National Museum of Natural Sciences, Ottawa.
- Kevan, P.G., D. Eisikowitch, J.D. Ambrose & J.R. Kemp, 1990. Cryptic dioecy in *Rosa setigera* Michx. (Rosaceae), a rare plant in Carolinian Canada. *Biol. J. Linn. Soc.* 40:229-243.
- Lewis, W.H., 1958. A monograph on the genus *Rosa* in North America III. *Rosa setigera*. *Southwestern Naturalist* 3:154-174.
- Macoun, J. 1883-6. *Canadian plants: phanerogams*. Geol. Surv. Can., Dawson Bros., Montreal.
- NHIC (Natural Heritage Information Centre), 2000. NHIC Element Report for *Rosa setigera*.
- Oldham, M.J., 1983. *Environmentally Significant Areas of the Essex Region*. Essex Region Conservation Authority, Essex, ON. 426 pp.

Pertinent Web Sites

- Environment Canada: Species at Risk in Canada.
www.speciesatrisk.gc.ca/Species/English/SearchDetail.cfm?SpeciesID=245
- Native American Ethnobotany Database, compiled by Daniel Moerman.
www.umd.umich.edu/cgi-bin/herb/
- NatureServe, Association for Biodiversity Information. www.natureserve.org

Ontario Natural Heritage Information Centre (NHIC)

www.mnr.gov.on.ca/mnr/nhic/nhic.html

ROM/OMNR: Royal Ontario Museum/Ontario Ministry of Natural Resources Species at Risk Module. www.rom.on.ca/cgi-bin/cbcb/fastfact.pl?speciesID=48

BIOGRAPHICAL SUMMARY OF AUTHOR

John Ambrose came to the University of Guelph Arboretum in 1974, after receiving a PhD in Botany from Cornell University. At the Arboretum, in addition to being the Curator, he developed a program based on the rare woody plants of the Carolinian Zone of southern Ontario, including field surveys, status reports and detailed studies of their population and reproductive biology. After 17 years there, he moved to the Toronto Zoo as Curator of Botany/Manager of Horticulture. There he developed new natural habitat exhibits and a naturalization program for peripheral lands of the site, in addition to his exhibit responsibilities. These reflect his growing interest in restoration ecology. In 1999 he left the Zoo to teach a new course in restoration ecology at the University of Guelph. He currently is self-employed and continues to work with endangered species recovery planning, serving on three recovery teams for Carolinian trees.

AUTHORITIES CONSULTED

Mike Oldham of NHIC was contacted for information on file for this species. Paul Pratt provided information of recent sightings at Ojibway Park and Prairie and nearby natural areas, as well as a summary of the 1992 ERCA report on natural areas of Windsor. Gerry Waldron provided information on recent sightings in Essex County.

COLLECTIONS EXAMINED

With good data on collection and site records from the updated element occurrence reports of the Natural Heritage Information Centre (NHIC, 2000) and the COSEWIC status report (Ambrose, 1986), researching time was concentrated on going to representative sites, concentrating on those for which there was good base data on population abundance. Population densities, reproduction and observation of local threats were compared with those recorded earlier. Observations were not made for 18 NHIC element occurrence reports and the 1992 ERCA report for Windsor (15 sub-sites), the latter received after the field work was completed. About 43 person-hours were spent in the field for updating the status of this species.