Update
COSEWIC STATUS REPORT
on

Giant Helleborine
(Epipactis gigantea)

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David J. White & George W. Douglas

VULNERABLE
1998

COSEWIC
COMMITTEE ON THE STATUS OF ENDANGERED WILDLIFE IN CANADA

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COMITÉ SUR LA SITUATION DES ESPÈCES EN PÉRIL AU CANADA

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Cover illustrations:
Giant Helleborine - Erich Haber, *National Botanical Services*, Ottawa.

Giant Helleborine

Reason for status: Downlisted to vulnerable based on discovery of sizeable populations but continued risks due to highly restricted habitat preference and collection. [Designated threatened in 1984 and downlisted to vulnerable in 1998.]

Occurrence: British Columbia

NOTES

COSEWIC status reports are working documents used in assigning status. Reports are released in their original form in the interest of making scientific information available to the public.

 The report may be cited as follows:

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COSEWIC

A committee of representatives from federal, provincial and private agencies that assigns national status to species at risk in Canada and the chairs of the scientific species specialist groups

COSEPAC

Un comité de représentants d'organismes féderaux, provinciaux et privés qui attribue un statut national aux espèces canadiennes en péril ainsi que des président(e)s des groupes des spécialistes scientifiques.

Update
COSEWIC Status Report

on

Giant Helleborine
(*Epipactis gigantea*)

by

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Environment Canada

Executive Summary

Description

Giant Helleborine (*Epipactis gigantea*) is a perennial herb arising from short rhizomes. The stems are mostly 0.3- 0.7 m tall bearing a number of lance-shaped leaves that clasp the stem at their base and become progressively larger further up the stem. The 3-15 showy flowers are borne at the top of the plant in a raceme with the flowers tending to bend to one side. The sepals and petals are similar in colour, with a coppery-green hue and brownish-veins; the petals are thinner than the sepals and tend to have darker brownish-purple veins.

Distribution

The species has a broad range in western North America, occurring in northern Mexico and ranging northward throughout most of the western United States through the Rocky Mountains to both sides of the Cascades in Washington. Disjunct populations occur in South Dakota and Wyoming. In Canada, the only occurrences are in southern British Columbia.

Habitat

This orchid prefers damp areas around lakes, springs and seepage areas. Giant Helleborine is particularly common where springs flow through porous limestone; in parts of its range it is also found around salt springs and alkaline meadows. In British Columbia, its localities are found in the lowland and montane zones. Because of its preference for the banks of streams, it has also been called Stream Orchid.

General Biology

Plants have been widely grown in the western United States in wildflower gardens. It has also proven to be quite hardy in England where it has been grown at the Royal Botanic Gardens, Kew, since at least the turn of the century.

Population Size and Trends

When first designated in 1984, only four populations were known to be extant. Since then nine new sites for the orchid have been found, some consisting of hundreds or thousands of plants.

Limiting Factors

The orchid has a relatively restricted habitat preference for lime-rich sites. Even where relatively abundant, the plants tend to be restricted to a narrow zone within its habitat. Some of the lakeshore and hot spring sites preferred by the orchid are prime candidates for development.

Existing Protection

Some of the colonies occur in established or proposed Ecological Reserves. Several large populations occur in a provincial park.

Evaluation and Status

Because of the increase in numbers of sites now known, the large size of some populations and the protection afforded some of these in Reserves and in a provincial park, the species is presently subject to a lower risk of extirpation than it was in 1984. The species is still vulnerable, however, due to its specific habitat requirements and relatively restricted geographical range in Canada.

Prepared by

Erich Haber, Co-Chair, Vascular Plants, Mosses and
Lichens Species Specialist Group
Sept. 1999

Résumé

Description

L'épipactis géant (*Epipactis gigantea*) est une plante vivace à rhizomes courts. Ses tiges mesurent de 0,3 à 0,7 m et portent plusieurs feuilles lancéolées, embrassantes à la base et de plus en plus larges en montant sur la tige. On trouve de trois à quinze fleurs imposantes en un racème terminal qui tend à pencher d'un côté. Les sépales et pétales, d'une teinte analogue vert-de-gris, sont veinés de brun. Les pétales sont plus minces que les sépales, et le brun de leurs veines est plus foncé.

Distribution

L'espèce est largement répandue dans l'Ouest de l'Amérique du Nord, se retrouvant au nord du Mexique et s'étendant vers le nord dans presque tout l'Ouest des États-Unis, à travers les Montagnes Rocheuses jusqu'aux flancs de la chaîne des Cascades dans l'État de Washington. Des populations isolées poussent dans le Dakota du Sud et au Wyoming. Au Canada, on ne la retrouve qu'au sud de la Colombie-Britannique.

Habitat

Cette orchidée préfère les bordures humides des lacs, des ruisseaux et les zones de suintement. On trouve fréquemment l'épipactis géant près des sources dans le calcaire poreux; dans son aire de répartition, on le retrouve aussi autour des sources salées et dans les prés alcalins. En Colombie-Britannique, il pousse dans les terres basses et dans les zones montagnardes. Sa préférence pour les berges des ruisseaux lui a valu le surnom de « Stream Orchid » (orchidée des ruisseaux).

Biologie générale

On le cultive largement dans les jardins de fleurs sauvages de l'Ouest des États-Unis. Très bien adapté au climat anglais, il croît aux Jardins botaniques royaux de Kew depuis le début du siècle.

Taille et tendances de la population

Au moment de sa désignation en 1984, seules quatre populations étaient connues. Depuis lors, on a découvert neuf nouveaux sites pour l'orchidée, certains regroupant des centaines ou des milliers d'individus.

Facteurs limitants

L'épipactis a une préférence nette pour les habitats riches en calcaire. Même là où il abonde, il préfère se limiter à une bande étroite de son habitat. Certains des sites le long des lacs ou des sources chaudes qu'il favorise sont des zones d'un grand intérêt pour l'aménagement.

Protection existante

Certaines colonies croissent dans des réserves écologiques existantes ou proposées. Un des parcs provinciaux accueille plusieurs grandes populations.

Évaluation et statut de l'espèce

En raison du plus grand nombre de sites connus, de la grande taille de certaines populations et de la protection dont elles jouissent dans des réserves et un parc provincial, le risque de disparition au Canada que court l'espèce est

moindre qu'en 1984. À cause de ses besoins d'un habitat particulier et de sa répartition peu étendue au Canada, elle reste cependant vulnérable.

Préparé par

Erich Haber
Coprésident du groupe de spécialistes
des plantes vasculaires, des mousses et des lichens
Septembre 1999.

Introduction

Giant Helleborine (*Epipactis gigantea* Dougl. Ex Hook.) is a western species that occurs from southern British Columbia south through the Rocky Mountains to Mexico. In Canada, Giant Helleborine requires a moist, calcareous habitat (Brunton, 1984). Suitable conditions occur at the Fairmont Hot Springs where warm, lime-rich, spring water flows over tufa—a rock that is mostly calcium carbonate precipitate (Brunton, 1984). Other sites occur on lakeshores and adjacent to mineral springs where there is an ample supply of base-rich water (M. Martin, pers. com. to E. Haber, 1995). The species was designated as threatened in 1984 as only a few populations were known in southern British Columbia, the largest of which was considered to be in danger of extirpation at the Fairmont Hot Springs (Brunton, 1984).

Distribution

Giant Helleborine occurs in the United States from Washington and Idaho south to California, Texas, and Mexico (Brunton, 1984). There are disjunct populations in South Dakota and Wyoming. The only Canadian occurrences are in southern British Columbia (Figure 1).

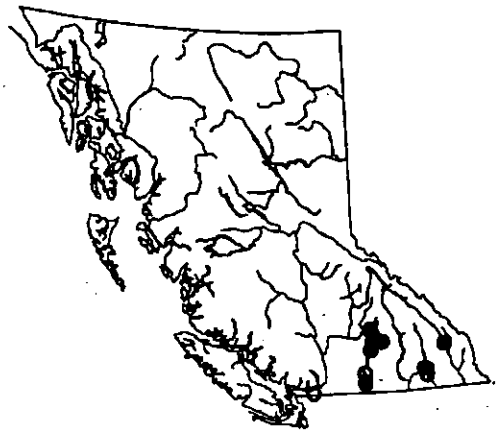

Figure 1. Distribution of Giant Helleborine in British Columbia
(Map provided through the courtesy of the British Columbia Conservation Data Centre).

Protection

Since the designation of Giant Helleborine as a threatened species, several areas in which the orchid occurs have been declared or proposed as Ecological Reserves. No other steps are known to have been taken to enhance the species' chances of survival in Canada.

Population Size and Trend

Giant Helleborine has been known in British Columbia since 1877. At the time of the status report in 1984, the orchid had been recorded at 15 sites in the province. Six were assumed to be extirpated, five were considered probably extirpated, and four populations were thought to be extant (Brunton, 1984). For three of the four stations reported as extant in Brunton (1984), there is new information.

Celista (Shuswap Lake): reconfirmed by A. Ceska in 1994 (population size not known).

Fairmont Hot Springs: seen by G. Douglas in 1993 (75-100 plants) and in 1996 (slight decrease in numbers since 1993).

Mara Meadows Ecological Reserve: seen by M. Martin in 1990 (population size not known).

Since 1984, nine new sites have been reported. All are within the previously-known range of the species as mapped by Brunton (1984). The new sites present a very different picture of the status of the orchid.

Boswell: recorded by H. Roemer in 1996 (population size not known). This may be the same site recorded as last seen in 1944 with 1984 status unknown in Brunton (1984).

James Grant Mabel Lake Ecological Reserve Proposal: recorded by M. Martin in 1994 (over 50 plants).

Kearns Creek: recorded in 1991 by T. Goward (population size not known). It is not clear which Kearns Creek as there are more than one in southern British Columbia.

Mahoney Lake: recorded in 1991 by T. Goward (population size not known).

Okanagan Falls: seen in 1987 by H. Moore (two patches with over 100 plants each).

Pilot Bay Provincial Park: three populations totalling several hundred plants found by S. Hulland in 1994; one of these populations is reported by H. Roemer in 1996 to total 1300 plants in two sub-populations.

Roderick Haig-Brown Park: a large population consisting of 1,000 to 10,000 plants reported by M. Martin in 1996.

Vernon: first recorded by M. Martin about 1984 (50 to 100 plants). Development will probably eliminate this colony in the near future and some plants have been relocated to more secure wetlands in the region (M. Martin, pers. com. to E. Haber, 1995).

White Lake Ecological Reserve Proposal: recorded by A. Ceska and H. Roemer in 1994 (over 500 plants).

Habitat

In Canada, Giant Helleborine requires a moist, calcareous habitat (Brunton, 1984). Suitable conditions occur at the Fairmont Hot Springs where warm, lime-rich, spring water flows over tufa—a rock that is mostly calcium carbonate precipitate (Brunton, 1984). Other sites occur on lakeshores and adjacent to mineral springs where there is an ample supply of base-rich water (M. Martin, pers. com. to E. Haber, 1995). Giant Helleborine also occurs at the base of slopes where sub-surface drainage provides ample, lime-rich moisture (M. Martin, pers. com. to E. Haber, 1995). The orchid can occur in open wetland areas, such as fens, or in broken shade at the forest edge (M. Martin, pers. com. to E. Haber, 1995).

Biology

Giant Helleborine's preferred habitats—hot springs, mineral springs, and lakeshores—are prime candidates for development. This habitat preference could put the plant at risk at some locations.

Limiting Factors

Epipactis gigantea occurs in Canada in areas near hot springs, mineral springs, or seepage areas where there is water that is freely-available and lime-rich. Even in areas where there are large colonies, the orchid is usually restricted to a narrow zone (M. Martin, pers. com. to E. Haber, 1995). Thus, Giant Helleborine not only has a limited distribution in southern British Columbia but it is restricted to a narrow ecological range.

Evaluation and Status Recommendation

When the status designation of threatened was assigned in 1984, Giant Helleborine was known from only four colonies, the largest of which was considered to be in imminent danger of extirpation (Brunton, 1984). By 1996, this orchid has been found at a number of new locations—some of which contain hundreds or thousands of plants. Some of the colonies occur in established or proposed Ecological Reserves. Several large populations occur in a provincial park. Thus, there is reason for optimism and it may be appropriate to change the status designation from threatened to vulnerable for Giant Helleborine.

Acknowledgements

Beth Rogers, British Columbia Conservation Data Centre, provided a listing of known Giant Helleborine specimens and records. Malcolm E. Martin, Vernon, British Columbia, provided details to Erich Haber on several recently-discovered populations of Giant Helleborine.

Literature Cited

Brunton, D. 1984. Status report on the Giant Helleborine (*Epipactis gigantea*) in Canada. Committee on the Status of Endangered Wildlife in Canada. Canadian Wildlife Service, Ottawa. Unpublished report. 26 pp.

Biographical Summary of Authors

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. 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*).

George W. Douglas has a Ph.D. in Plant Ecology and has worked with rare plants for over 15 years. He was senior author of The Rare Plants of the Yukon (1981) and co-authored The Rare Plants of British Columbia (1985). George was also chief editor of the manual, The Vascular Plants of British Columbia (1989-1994). In 1991, George joined the British Columbia Conservation Data Centre, Ministry of Environment as the senior program botanist. Since then, he has been responsible for the documentation and tracking of the rare native vascular plants, bryophytes and lichens of the province. George has written or co-written 15 COSEWIC status reports during this period.

MANDATE

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 groups: fish, amphibians, reptiles, birds, mammals, molluscs, lepidoptera, vascular plants, mosses and lichens.

MEMBERSHIP

COSEWIC is comprised of representatives from each provincial and territorial government wildlife agency, four federal agencies (Canadian Wildlife Service, Parks Canada, Fisheries and Oceans, Canadian Museum of Nature), three national conservation organizations (Canadian Nature Federation, Canadian Wildlife Federation, and World Wildlife Fund Canada) and the chairs of the scientific species specialist groups. The Committee meets annually in April 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.
Vulnerable (V)	- 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.
Indeterminate (I)	- A species for which there is insufficient scientific information to support status designation.

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. COSEWIC meets annually in April each year. Species designated at this meeting are added to the list.

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