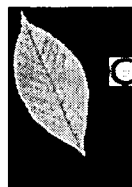


**West Castle Ski Resort Expansion  
2002 Rare Plant Survey  
Technical Report**

**Prepared for:  
West Castle Ski Resort**

**Prepared by:  
Clark EcoDynamics Inc.  
Bragg Creek, Alberta**

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**CLARK ECODYNAMICS INC**

19, 2002. In order to obtain a representation of different plant communities and sample those with high rare plant potential, areas such as creeks, rock outcrops, drainages, and open slopes were targeted in this predominately forested area. A species list was compiled during the surveys. A random meander technique was used whereupon all species were identified at a site until no more new species were found (Lancaster 2000). Plant species requiring verification were collected and their identification later confirmed at the University of Calgary Herbarium.

When rare plant species were observed, the site was searched to determine the extent and status of the population. GPS coordinates were recorded and specimens collected and/or photographs were taken of the specimen and habitat. Voucher specimens of rare plants species were collected following the guideline put forth by the Alberta Native Plant Council which is that only one specimen can be collected for every 20 observed (Lancaster 2000). Species nomenclature follows "The Flora of Alberta" (Moss 1983). Common names follow "Alberta Plants and Fungi - Master Species Checklist and Species Group Checklists" (Alberta Environmental Protection 1993).

## 4 Results

Surveys conducted for rare plants in 1991-1992 for the Westcastle Expansion EIA (HBT Hardy 1992) reported five rare species, of which one, lapland rosebay, (*Rhododendron lapponicum*) is considered rare today (Vujnovic and Gould 2002). This species was not recorded during the 2002 survey, but had been reported in the area as sparsely occurring at the tree line. However, its location was not provided and this species is unlikely to occur in the area. Table 1 provides a description of the ANHIC rankings, provincial (S) and global (G), which are assigned to every species in the province. Those of an S1 or S2 ranking are considered rare. No rare plant communities were observed during the surveys.

The rare vascular plants that occur in the Subalpine and Montage Subregions are presented in Appendix 1. A vascular plant species list for the area was compiled and is presented in Appendix 2.

**Table 1: ANHIC Rankings of Rare Plants.**

S Rank	G Rank	Description
S1	G1	5 or fewer occurrences; or only a few remaining individuals.
S2	G2	6 to 20 occurrences or with many individuals in fewer occurrences
S3	G3	21-100 occurrences, may be rare and local throughout its range, or in a restricted range (may be abundant in some locations or may be vulnerable to extirpation because of some factor of its biology)
S4	G4	Apparently secure under present conditions, typically >100 occurrences but may be fewer with many large populations; may be rare in parts of its range, especially peripherally
S5	G5	Demonstrably secure under present conditions, > 100 occurrences, may be rare in parts of its range, especially peripherally

SOURCE: Vujnovic and Gould (2002)

## 5 Appendices

### 5.1 Appendix 1: Rare Vascular Plants within the Subalpine and Montane Subregions.<sup>1</sup> (Bold indicates species previously recorded within several kilometres of the study area (Rintoul 2002).

Scientific Name	Common Name	SRank	GRank
<i>Adenocaulon bicolor</i>	pathfinder	S2S3	G5?
<i>Adiantum aleuticum</i>	western maidenhair fern	S2	G5?
<i>Agoseris lackschewitzii</i>	pink false dandelion	S2	G4
<i>Agropyron x brevifolium</i>		S?	HYB
<i>Agrostis exarata</i>	spike redtop	S2	G5
<i>Agrostis humilis</i>	low bent grass	S1	G4
<i>Agrostis mertensii</i>	northern bent grass	S2	G5
<i>Agrostis thurberiana</i>	Thurber's bent grass	S2	G5
<i>Allium geeyeri</i>	Geyer's onion	S2	G4G5
<i>Alopecurus alpinus</i>	alpine foxtail	S2	G5
<i>Antennaria aromatica</i>	scented everlasting	S2	G4
<i>Antennaria corymbosa</i>	corymbose everlasting	S1	G5
<i>Antennaria luzuloides</i>	silvery everlasting	S1	G5
<i>Antennaria monocephala</i>	one-headed everlasting	S2	G4G5
<i>Anthoxanthum monticola</i>	alpine sweet grass	S2	G5
<i>Aquilegia formosa</i>	Sitka columbine	S2	G5
<i>Aquilegia jonesii</i>	Jones' columbine	S2	G4
<i>Arabis lemmonii</i>	Lemmon's rock cress	S2	G5
<i>Arctagrostis arundinacea</i>	polar grass	S1	G?
<i>Arenaria longipedunculata</i>	sandwort	S1	G3Q
<i>Arnica amplexicaulis</i>	stem-clasping arnica	S2	G4
<i>Arnica longifolia</i>	long-leaved arnica	S2	G5
<i>Arnica parryi</i>	nodding arnica	S2	G5
<i>Artemisia furcata</i> var <i>furcata</i>	forked wormwood	S1	G4T?
<i>Artemisia tridentata</i>	big sagebrush	S2	G5
<i>Aster campestris</i>	meadow aster	S2	G5
<i>Aster eatonii</i>	Eaton's aster	S2	G5
<i>Aster x maccallae</i>		S1S2	HYB
<i>Athyrium alpestre</i> var <i>americanum</i>	alpine spleenwort	S1	G4G5
<i>Barbarea orthoceras</i>	American winter cress	S2	G5
<i>Botrychium ascendens</i>	ascending grape fern	S1	G2G3
<i>Botrychium crenulatum</i>	scalloped grape fern	S1	G3
<i>Botrychium lanceolatum</i>	lance-leaved grape fern	S2	G5
<i>Botrychium michiganense</i>		S1	G?
<i>Botrychium minganense</i>	mingnan grape fern	S2S3	G4
<i>Botrychium multifidum</i> var <i>intermedium</i>	leather grape fern	S2	G5T4?
<i>Botrychium paradoxum</i>	paradoxical grape fern	S1	G2
<i>Botrychium pedunculatum</i>	stalked grape fern	S1	G2?
<i>Botrychium pinnatum</i>	northwestern grape fern	S1	G4?
<i>Botrychium simplex</i>	dwarf grape fern	S2	G5

Scientific Name	Common Name	SRank	GRank
<i>Botrychium spathulatum</i>	spatulate grape fern	S2	G3G4
<i>Botrychium x watertonense</i>		S1	HYB
<i>Boykinia heucheriformis</i>	telesonix	S2	G4
<i>Braya humilis</i> var <i>maccallae</i>	leafy braya	S1	G5T3?Q
<i>Braya humilis</i> var <i>porsildii</i>	leafy braya	S1	G5T?Q
<i>Braya purpurascens</i>	alpine braya	S1	G4G5Q
<b><i>Brickellia grandiflora</i></b>	large-flowered brickellia	S2	G5
<i>Bromus latiglumis</i>	Canada brome	S1	G5
<i>Bromus vulgaris</i>	woodland brome	S2S3	G5
<i>Calamagrostis lapponica</i>	Lapland reed grass	S1	G5
<i>Camassia quamash</i> var <i>quamash</i>	blue camas	S2	G5T?
<i>Campanula uniflora</i>	alpine harebell	S2	G4
<i>Cardamine bellidifolia</i>	alpine bitter cress	S2	G5
<b><i>Cardamine oligosperma</i> var. <i>kamtschatica</i></b>	mountain cress	S2	G5
<i>Carex adusta</i>	browned sedge	S1	G5
<b><i>Carex aperta</i></b>	open sedge	S1	G4
<i>Carex arcta</i>	narrow sedge	S1	G5
<i>Carex backii</i>	Back's sedge	SU	G4
<i>Carex bicolor</i>	two-colored sedge	SU	G5
<i>Carex capitata</i>	capitate sedge	S2	G5
<i>Carex crawei</i>	Crawe's sedge	S2	G5
<i>Carex glacialis</i>	glacier sedge	S2	G5
<i>Carex heleonastes</i>	Hudson Bay sedge	S2	G4
<i>Carex heteroneura</i> var <i>epapillosa</i>	blackened sedge	S1	G5T?
<i>Carex hookerana</i>	Hooker's sedge	S2	G4?
<i>Carex illota</i>	small-headed sedge	S1	G4G5
<i>Carex incurviformis</i> var <i>incurviformis</i>	seaside sedge	S2	G4G5T?
<i>Carex lachenalii</i>	two-parted sedge	S2	G5
<i>Carex lenticularis</i> var <i>dolia</i>	lens-fruited sedge	S1	G5T3Q
<i>Carex leptopoda</i>	taper-fruited short-scale sedge	S1	G5
<b><i>Carex mertensii</i><sup>2</sup></b>	purple sedge	S1	G5
<i>Carex misandra</i>	nodding sedge	S1S2	G5
<i>Carex parryana</i> var <i>parryana</i>	Parry's sedge	S1S2	G4T4
<i>Carex paysonis</i>	Payson's sedge	S1S2	G4
<b><i>Carex petasata</i></b>	pasture sedge	S1S2	G5
<i>Carex petricosa</i>	stone sedge	S2	G4
<i>Carex platylepis</i>	broad-scaled sedge	S1S2	G4?
<i>Carex podocarpa</i>	alpine sedge	S2	G4G5
<i>Carex preslii</i>	Presl's sedge	S2	G4
<b><i>Carex scoparia</i></b>	broom sedge	S1	G5
<i>Carex supina</i>	Weak Sedge	S1	G5
<i>Carex tinctoria</i>	tinged sedge	S1	G4G5
<i>Carex vesicaria</i>	blister sedge	S1	G5
<i>Castilleja cusickii</i>	yellow paintbrush	S2S3	G4G5
<i>Castilleja lutescens</i> <sup>2</sup>	stiff yellow paintbrush	S2S3	G4G5
<i>Castilleja pallida</i>	pale greenish paintbrush	SU	G5
<i>Cheilanthes gracillima</i>	lace fern	S1	G4G5
<i>Chenopodium incanum</i>	goosefoot	S1	G5
<b><i>Cirsium scariosum</i></b>	elk thistle	SU	G5
<b><i>Conimitella williamsii</i></b>	conimitella	S2	G3?
<i>Cornus unalaschensis</i>		S?	G5?
<i>Crepis atriobarba</i>	hawk's-beard	S2	G5

Scientific Name	Common Name	SRank	GRank
<i>Tsuga heterophylla</i>	western hemlock	S1	G5
<i>Vaccinium ovalifolium</i>	oval-leaved blueberry	S2	G5
<i>Vaccinium uliginosum</i>	bog bilberry	S2	G5
<i>Viola pallens</i>	Macloskey's violet	S1	G5T5
<i>Viola praemorsa</i> ssp <i>linguifolia</i>	broad-leaved yellow prairie violet	S2	G5T5
<i>Woodsia glabella</i>	smooth woodsia	S1	G5

1. Source: Alberta Natural Heritage Information Centre (ANHIC).
2. Indicates rare species found on the 2002 rare plant survey.