

ORIGINAL PURPOSE To preserve outstanding Garry oak-wildflower communities

OVERVIEW

Date established:	16 May	Location:	4 km ENE of Duncan, Vancouver Island
ORC #:	1984		
Map number:	3112	Latitude:	48°47'N
	92 B/13	Longitude:	123°38'W

Total Area:	18 ha	Elevation:	120-280 m
Land:	18 ha		

Access: Accessible by road, and bounded on the north by a residential sub-division.

Biogeoclimatic Zone: Coastal Douglas-Fir (CDF)
Biogeoclimatic Variant: CDF mm CDF Moist Maritime
Ecosection: Nanaimo Lowland
Region: Vancouver Island
Management Area: Cowichan

COMPOSITION

Physical: Mount Tzuhalem consists of strongly bedded conglomerates and sandstones. The reserve, at middle elevations on the western side of the mountain, faces southwest and has strongly sloping, internally hilly terrain. Soils, where developed, are shallow Sombric and Dystric Brunisols. Hollows between rock outcrops may contain seepage water in spring, but the whole area dries out quickly in summer.

Biological: Groves of Garry oak separated by wildflower meadows and mossy outcrops, together with scattered, gnarled, Douglas-fir and arbutus trees, give the site a parkland appearance. The dense, showy wildflower stands are at their best in April and May. Seven plant communities have been described.

Garry oak-common snowberry woodland occurs on the deeper soils and among rock outcrops. Douglas-fir and arbutus are present, and conspicuous shrubs are ocean-spray and tall Oregon-grape. The wildflower meadows, dominated by camas and sea blush, occur on shallow soils subject to summer drought. Six or more species of grass occur in the meadows, of which Kentucky bluegrass and sweet vernalgrass are most common. Legumes are also diverse, including bicolored lupine, bird's-foot trefoil, four species of clover, and two vetches. Showy subdominant wildflowers are shooting stars, western buttercup, field chickweed, dovefoot geranium, death-camas, fool's-onion, yarrow, chocolate lily, Menzie's larkspur,

Hooker's onion, and forget-me-nots. Wet hollows in the meadows commonly support grassland saxifrage, blinks, and narrow-leaved montia. A fringe community, dominated by tall Oregon-grape and white fawn lily, sometimes forms a transition between oak woodlands and camas meadows. Four other communities are associated with rocky habitats.

Cultural: The Tzuhalem area is an historical harvesting location for the Vancouver Island Coast Salish First Nations. The reserve is a camas harvesting site which was traditionally burned to increase yields and maintain the open park-like habitat.

MANAGEMENT CONCERNS

SIGNIFICANT SPECIES	BC LIST STATUS	COSEWIC STATUS	CF PRIORITY
Garry oak-California brome association	Red listed		2
Garry oak-oceanspray association	Red listed		2
deltoid balsamroot	Red listed	Endangered (2009)	1
purple sanicle	Red listed	Threatened (2001)	2
white meconella	Red listed	Endangered (2005)	1
Scouler's catchfly	Red listed	Endangered (2003)	1
small-flowered godetia	Red listed		1
yellow montane violet	Red listed	Endangered (2007)	1
California-tea	Blue listed		2
Ermine, ssp. <i>anguinae</i>	Blue listed		2
farewell-to-spring	Blue listed		2
Nuttall's quillwort	Blue listed		2
arbutus			6
white-top aster	Red-listed	Special Concern (2009)	1
coast Douglas-fir			6
common camas			2
Garry oak			6
Golden-crowned Sparrow			6
Hermit Thrush			5
Hooker's onion			4
Northern Flicker			6

THREATS

Climate Change: Garry oak ecosystems are endangered in this province, largely due to rural and urban development. As the projected climate becomes warmer and drier, Garry oak ecosystems may theoretically fare well considering the favourable environment, but this would require appropriate land management and the creation and/or maintenance of ecological corridors.

Harvest: The illegal harvest of Deltoid balsam-root, chocolate lily, camas and fawn lilies occurs within the reserve. These are rare native species that are being harvested for personal

landscaping and possibly commercial sale.

Non-native species:	Scotch broom, St. John's Wort and Orchard grass are displacing native species.
Recreation:	Non-regulated foot-traffic occurs within reserve.
Urban and/or rural development:	Development is encroaching on the boundary of the reserve.

**ER WARDEN
ACTIVITIES**

- Monitor/report illegal activities where observed
- Survey fauna present in ER
- Monitor for invasive plants (control or eradicate where possible)
- Ingress of Douglas fir is threatening the viability of several plant species. Action should be taken to limit Douglas fir encroachment.

SCIENTIFIC NAMES OF SPECIES MENTIONED IN THE MOUNT TZUHALEM ER ACCOUNT

Flora

arbutus (*Arbutus menziesii*)
aster, white-top (*Aster curtus*)
balsam-root, deltoid (*Balsamorhiza deltoidea*)
blinks (*Montia fontana*)
bluegrass, Kentucky (*Poa pratensis*)
buttercup, western (*Ranunculus occidentalis* var. *occidentalis*)
camas, common (*Camassia quamash*)
catchfly, Scouler's (*Silene scouleri* ssp. *grandis*)
chickweed, field (*Cerastium arvense*)
death-camas (*Zigadenus* sp.)
Douglas-fir, coast (*Pseudotsuga menziesii* var. *menziesii*)
farewell-to-spring (*Clarkia amoena*)
fools-onion (*Triteleia hyacinthina*)
forget-me-not (*Myosotis* spp.)
geranium, dovefoot (*Geranium molle*)
godetia, small-flowered (*Clarkia purpurea* spp. *quadrivulnera*)
larkspur, Menzies' (*Delphinium menziesii*)
lily, chocolate (*Fritillaria affinis*)
lily, white fawn (*Erythronium oregonum*)
meconella, white (*Meconella oregana*)
montia, narrow-leaved (*Montia linearis*)
oak, Garry (*Quercus garryana*)
ocean-spray (*Holodiscus discolor*)
onion, Hooker's (*Allium acuminatum*)
Oregon-grape, tall (*Mahonia aquifolium*)
quillwort, Nuttall's (*Isoetes nuttallii*)
sanicle, purple (*Sanicula bipinnatifida*)

saxifrage, grassland (*Saxifraga integrifolia*)
seablush (*Plectritis congesta*)
shootingstar (*Dodecatheon pulchellum* ssp.)
St. John's-wort (*Hypericum* sp.) (may be invasive)
trefoil, bird's-foot (*Lotus corniculatus*)
vernalgrass, sweet (*Anthoxanthum odoratum*)
violet, yellow montane (*Viola praemorsa* ssp. *praemorsa*)
yarrow (*Achillea* spp.)

Invasive

broom, Scotch (*Cytisus scoparius*)
orchard-grass (*Dactylis glomerata*)

Fauna

Ermine, *anguinae* subspecies (*Mustela erminea anguinae*)
Flicker, Northern (*Colaptes auratus*)
Sparrow, Golden-crowned (*Zonotrichia atricapilla*)
Thrush, Hermit (*Catharus guttatus*)