

# Invasive Burweed in Ruckle Provincial Park, British Columbia

## Problem

Carpet burweed<sup>1</sup> (*Soliva sessilis*) was discovered in Ruckle Provincial Park in British Columbia in the spring of 1996. The distribution and density of burweed has increased dramatically since it was first discovered (Tables 1, Figure 1).

Results of intensive burweed surveys (2002 – 2004) within the main camping meadow of the park are displayed in Figure 1. Although surveys from 2004 show a significant decrease in density of burweed, there is an increase in distribution of the species. Several treatments aimed at eradicating this species have been attempted since it was first discovered (Table 2). Results from the 2004 intensive survey may be confounded by the timing of the 2004 treatments (herbicide, hot foam, tiger-torching, hand-pulling) relative to the timing of these surveys.

Burweed is one of hundreds of exotic species in the protected areas system in the province.

### What makes burweed worth spending time and money to control?

Ruckle Provincial Park has six blue-listed plant species, four of which occupy similar habitat as burweed (Table 3). Burweed presents a potentially serious competitive threat to these species. The proximity of Ruckle Provincial Park to sites of similar habitat and the ease with which the species spreads increases the threat it poses to conservation of rare species and ecosystems.

<sup>1</sup> Also known as: lawnweed, lawn burweed, spurweed, prickleweed, field burweed, field soliva, common soliva, onehunga weed, jo-jo, bindyi

Table 1. Number of 4 m<sup>2</sup> cells occupied by burweed (*Soliva sessilis*) by percent cover class in the camping meadow.

Year	<5	5 - <25	25 - <50	=50	Total
2002	119	84	34	4	241
2003	281	228	37	17	906
2004	607	162	23	0	794
Percent Change 2002 to 2003	236	271	1	425	575
Percent Change 2003 to 2004	216	(29)	(38)	(100)	(12)
Percent Change 2002 to 2004	182	193	(37)	(100)	329



## Opportunity

Invasive alien plants are serious threats world-wide resulting in species loss, loss of ecosystem services and extraordinary direct and indirect economic costs associated with eradication and remediation efforts (Plant Talk On-line). Economic impacts of invasive alien plants are in the billions of dollars annually world-wide (McNeely et al. 2003, Pimentel et al. 2000). Invasive alien species are one of the most significant threats to the Garry Oak ecosystems which are found in Ruckle Provincial Park (GOERT).

Eradication should be a primary management goal when early detection occurs, and distribution is limited. McNeely et al. (2003), based on their work with alien plants in California, suggested infestations of 1000ha or more were unlikely candidates for eradication. Infestations in the 0.1 – 1.0 ha range had 85%-45% chance of eradication success respectively. Eradication of carpet burweed from Ruckle Provincial Park is a reasonable and appropriate objective as the current infestation is approximately 0.7 ha. Unchecked, this could cover all suitable habitat in the park in three years at the current rate of increase.

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### Biology of *Soliva sessilis*

Burweed is a member of the Asteraceae family and is native to South America. Outside its natural range this species has become adapted to disturbed areas such as hard-packed trails, pathways, roadsides and lawns. The success of this species is due, in part, to the fact that it is a herbaceous winter annual germinating in the fall and beginning its active growth over the winter. During this time most other plant species (either annual or perennial) have not begun their seasonal growth period. Burweed is able to colonize unoccupied areas and eliminate competition from other plants by forming a dense cover (Johnson, 1980).

Burweed grows very close to the ground (2-7 cm tall) and is less than 25 cm in diameter (Hickman, 1993). The seeds have stiff hairs and spines forming a bur which aids in dispersal by humans (or animals) as they readily attach to clothing, skin, camping equipment, shoes and tires. Once dispersed, seeds remain dormant in the soil through the summer drought until fall when the annual life cycle begins again.

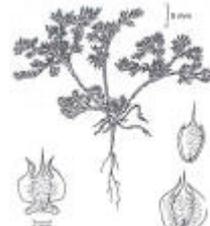


Table 3. Rare Plants in Ruckle Park

Species name	Ranking	Status	Habitat
<i>Agrostis pallens</i> (Dune Bentgrass)	S3	Blue	Mesic to moist sand dunes and rocky sea cliffs in the lowland zones
<i>Carex feta</i> (Green-sheathed Sedge)	S2S3	Blue	Marshes, wet meadows and ditches in lowland and montane zones
<i>Isotetes nuttallii</i> (Nuttall's Quillwort)	S3	Blue	Vernal pools and ephemeral winter seeps in lowland zones
<i>Limnanthes macounii</i> (Macoun's Meadowfoam)	S3	Blue	Wet depressions, vernal pools and seepage sites in lowland zones
<i>Sagina decumbens</i> ssp. Occidentalis (Western Pearlwort)	S3	Blue	Margins of vernal pools, mesic forest openings and dry hillsides in lowland zones
<i>Spergularia macrotheca</i> (Beach Sand-spurry)	S2S3	Blue	Wet to moist salt marshes and sandy to rocky coastal beaches in lowland zones

Table 2. Treatment history in Ruckle Provincial Park

Date	Coverage (m <sup>2</sup> )	Treatment
1996	Several hundred plants	none
1997	900 (estimated)	Hand pulling; plastic covering; area closures
1998	Thought to be very low or nil after treatment	Killax (2,4-D)
1999	--	Killax
2000	--	Hand pulling
2001	--	--
2002	1468 (measured)	Tiger torch; plastic covering; temporary closures
2003	5260 (measured)	Experimental approach using several eradication techniques
2004	7000 (estimated)	Tiger torch; herbicide; hot foam; hand pulling, area closures



Figure 1. Extent of burweed in Ruckle Provincial Park from 2002 – 2004.

### References

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- Additional Reading:  
Written Findings of the State Noxious Weed Control Board - Class A Weed. [www.wa.gov/agr/soec/ncwb/040201\\_inf/04020101.htm](http://www.wa.gov/agr/soec/ncwb/040201_inf/04020101.htm)

