growth of many plants. Maybe it is the unseasonably cool weather which has resulted in a poor show of flowers for this and other species of orchid?

The site had been heavily grazed then de-stocked when the current owner purchased the site. Many improvements in the health of the flowlines through the wetland had been recorded during the second visit and grass tussocks were much denser. It is possible that the Bago Leek Orchid grows better with less competition from grasses which would explain why numbers of the species are less now that the disturbances of grazing have been removed for a longer period of time. The site is in better condition than when the owner bought it but there appear to be less orchids now than when the site was heavily grazed. Do these orchids thrive in areas with a degree of disturbance?

Well, the truth is that it is all speculation. These questions can only be answered with long term, annual monitoring not only of the Bago Leek Orchid numbers but also comparing this information to weather patterns and activities on the site over time.

Ideally, monitoring of this species should be undertaken annually with two site visits to both properties in December

and January of each year. Areas of suitable habitat should be walked and a census of *Prasophyllum* species undertaken. Evidence of disturbance and the density of groundcover should be recorded as well during these visits to enable comparisons between disturbance, grass density and flowering abundance to be made. Furthermore, other areas of suitable habitat in the region should be surveyed to determine if other populations of this species exist and these could also be added to the monitoring program. And even with regular monitoring, questions may still remain, especially with a family of plants which is as complex as the Orchids.

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Vehicle access controls monitored through photopoints

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Monitoring the vulnerable Sand Ixodia

Douglas Point Conservation Park was declared a National Park and Wildlife Reserve back in 1997 to protect an important population of the Sand Ixodia (Ixodia achillaeoides subsp. arenicola). This spectacular coastal plant is a nationally Vulnerable plant species and occurs in south west Victoria and the south east of South Australia. The only protected reserve where this species occurs naturally is the Douglas Point Conservation Park some 30 km south west of Mt Gambier. This park was declared to protect this species but also other flora and fauna species including the Rufous bristlebird (Dasyornis broadbenti).

Off-road vehicles were considered the greatest threat in the reserve with past use being totally uncontrolled and impacts to the Sand Ixodia population being the motivation for proclamation. A local volunteer group (Mt Gambier Friends of Parks Group) set upon a project to improve the plight of this fabulous but fragile coastal park and *Ixodia* species.

In 1998, the enthusiastic volunteers went into action and constructed low cost fencing and barriers, and parking bays to help keep vehicles to defined tracks and away from eroded areas, cliff tops, and the Sand Ixodia population. The going was tough, digging post holes by hand in calcrete/flint topped ridges and cliff tops but all was worth it in the end. Towards the end of 1998 all was complete. Now time to sit back and watch. Monitoring was considered an integral component of this project and photopoints were the option chosen. The aims of the photopoints were to:

- maintain records on the regeneration of the Ixodia population on the trig point
- provide the group with photopoint monitoring experience
- record changes in vegetation structure and regrowth in areas where access control works had been undertaken.

A series of 12 photopoints were set up in 1998 where vehicle control works had been undertaken. Each site

was marked with two small wooden stakes to ensure they blended in with the environment. One was the sight peg and the other the photographers standing point. Each point was logged into a GPS for ease of finding again and a form was filled out noting any features or changes to the site since the last visit. Changes included vegetation growth and increased track use and less vehicle damage from driving off-track. The frequency of the monitoring started out as annual then once every two years and is now once every three years.

Results

The photopoints have created a fantastic historic record of the condition of the reserve at a given point in time allowing us and future land managers to compare how the park and specific locations throughout the park have changed (positively or negatively) after our actions. We would not change anything to our methods only that finding the small pegs have been difficult once sand begins accumulating and vegetation grows. Most of the sites have shown only gradual change (improvements in vegetation growth) with others showing damage to vegetation and highlighting park user preference to old tracks. This is the first time our photos have been used to show case how well photopoints can work.

For the Sand Ixodia, despite the extremely harsh conditions including a rocky shallow soil our photos (without counting plants) show that the population has increased both in numbers and overall plant size. The original access track

has grown back well preventing any further impacts by vehicles to this site. Project successful!!

In 2008, the Department for Environment and Natural Resources staff set up more formal plant monitoring protocols (transect/quadrats) using our photopoints as a guide to more accurately document changes to the population at this site.



Sand Ixodia is a nationally Vulnerable plant species, occuring in south west Victoria and the south east of South Australia. The only protected reserve where this species occurs naturally is the Douglas Point Conservation Park some 30 km south west of Mt Gambier. (Photo: Bryan Haywood)







Photo monitoring clearly shows that the original access track has grown back well preventing any further impacts by vehicles to this site. Project successful!!







A gradual improvement in the Sand Ixodia population growing in a very harsh environment.



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