

Orchid Conservation At Home

By Emily Noble

At first glance, I wasn't so sure that my story of orchid conservation would satisfy the invitation by the Australian Orchid Foundation to write and share ideas and experiences related to the initiatives and practices in the cultivation and conservation of orchids. I don't grow orchids in a limited space, or a controlled environment context. I don't use water or electricity to grow my orchids. I don't even propagate my orchids. My treatment of this essay topic, and the exploration of my own unique challenges in growing orchids, centres on the fact that my orchids grow themselves.

I now own 16 Ha of remnant bush 20 minutes south west of Ballarat, on which I have discovered more than of 30 native orchid species so far. As I considered the key words of the general aims of the essay topic, words such as: approaches; philosophies; problems; challenges and obstacles, I became inspired to share my story of in-situ conservation of orchids at my home-to-be, and the tale of challenges I have faced.

The central theme of my unique cluster of challenges, all be the ones I set for myself, is that I want to eventually build a stone home on the property, and live in the environment, sharing it with my indigenous friends; a tantalizing array of orchid colonies growing naturally among an abundance of small grass trees, heath, peas and lilies in a Red Stringy-bark Woodland and Heathy Dry Forest.



'Our bush block'

My challenges for conservation constitute a rather daunting list of issues, concerns and considerations. I want to move in with my orchid friends without compromising the integrity of their natural environment. It is such a pleasure to observe them in the wild on a daily basis. However, the idea of treading lightly is very difficult to outwork when you factor in the inevitable introduction of excavators, concrete trucks, driveways, concrete slabs, and eventually, a stone home and workshop. This "invasion" also necessitates that as uninvited guests, we exercise due care so as not to introduce pathogens and weeds to their home.

This tale of ambitioned conservation is a massive work in progress, with a host of quite fluid variables; even after mapping the orchid colonies for over 18 months, I keep stumbling upon new colonies and species not previously noted in my monitoring. Add to this that I am still mastering (in my dreams!) my identification skills, given that I am only a relatively recent convert to an interest in native orchids. I now rate myself as an orchid nut, a status I infer from having amassed over 3000 photos of orchids in their natural habitat in just 2 years. I have observed the premature fate of some of my native friends from the early morning nibbling habits of the local fauna, both native and introduced. I have observed certain colonies over successive seasons, and noticed differences in the density of population, height of stem, and general health of the plants. I have noticed that some colonies proliferate in disturbed soil, others in undisturbed soil, some on compacted earth, and others in more friable substrates.

So, as you can see at first glance, the challenges are complex and numerous, and are principally created out of my desire to move in amongst the orchids and share their environment without interfering with what they have managed to secure, judging by the health and spread of some colonies, as an ideal habitat.



'The Bearded Midge Orchid'

As I have considered the range of issues and considerations that beg to be addressed in the task of conserving my orchid patch, and how best to address them in this essay, I have decided to treat them in the order with which my husband and I were confronted by them.

The most time-consuming challenge of all, one that requires hours of dedicated wandering, is to map and identify the orchid colonies. Of course, this could not be done in just one thorough wandering. I go looking for spider orchid flowers in November, having noticed their first shoot of growth in June. I search out the duck orchids in December, having mapped the sites of their first leaves in May. The same goes on for the bird orchids, the tiger, hyacinth, and midge orchids, greenhoods and the rest. What I've found is that a set of first shoots can disappear in an instant. It would appear that the kangaroos that frequent our property take delight in the succulent first shoots if they are lucky enough to find them. Alternative explanations for their premature demise could be the wallabies or wombats, or grubs and slugs. Whatever; we have come to observe, with a hint

of grief, that we cannot presume that a healthy mass showing of first shoots, even from an established colony, will eventuate as a healthy mass of flowering specimens.

In our mapping and identification of healthy plots, the time challenge still confronts us. I want to photograph each of the growing stages from first emergence of the shoot, through stem growing and flower bud formation, to flowering of course, but also pollination and the gentle reprise of all back to the compost below. To date, we customarily walk the block each fortnight, and record the stage of all known species on film. This is not a task, as many would well know, of point and shoot. A recurring challenge is to get down to the height of the orchids to take the shot. This requires such delicate camera preparation, to get the right elements of the plant's anatomy in focus, a necessity for accurate plant identification. Impediments to this process include wind, rain, light, and the ever-irritating life of the camera battery. Squatting down low, or lying on the ground, with camera poised for the perfect shot, waiting for a stilling of the subject draws down on the life of the battery. Moreover, this process of recording and identifying our species set is complicated by the specific identification criteria for each potential variety.

First a general shot must be taken, then a retreat from the field to plant my head in the books, to ascertain what bits need to be in focus and from what angle. A gaggle of questions abound at this point: are its pantaloons red or green, baggy or close fitting; is it wearing a hat or a tennis cap; are its whiskers long and curly, or has it just shaved; what might it be mimicking, a gnat, a mosquito, a wasp; are its tonsils swollen, or is it's tongue showing signs of oxygen deprivation; is it singing the Polish national anthem, or is it dancing like a court jester?



Stylish red and green pantaloons

Along with the task of constant monitoring of the colonies we know, is the chance encounter of a solitary orchid, pushing up through the most unlikely set of conditions, sometimes in the most unexpected of places. Such chance discoveries only exacerbate the challenge of identifying all species on our plot. We don't know where a plant could be waiting dormant, and so therefore must wander with an open vigilance and suspicious determination over each and every square metre.



Oxygen deprived tongues

Flowing on from this challenge, of mapping all plants and species, was the task of working out where we could build our stone home. The associated intrusions included the installation of a driveway, extending the existing one further into the block. We have noted that the entrance to the block runs right through the middle of a mass of nodding greenhoods, common bird orchids, and parson's bands. It is conceivable, given my current heightened degree of protectiveness, that had the driveway not

already been installed, we would have had real trouble negotiating its path. Other intrusions include the pad for the shed and the house. The pad for the shed was excavated by the previous owner, but we still had to dedicate a space for us to live: a plot for the house. We watched the orchids come and go for a year or so, and were finally able to pick a spot that was 15 metres south of a rich colony of tiger orchids, 10 metres north of a patch of spider orchids and beard orchids, and north-west of a sparse family of midge orchids. We breathed a huge sigh of relief when, after a period of keen and careful observation, we were able to lock in a spot for the house that required no damage to any orchid colonies.

In the process of preparing the house lot, a small dam north of the plot required some modifications to the spillway. With pipes prepared, an excavator dug the trench. The termination point of the trench resulted in the excavator being “locked in” between a patch of tiger orchids, and a patch of spider orchids, flanked by a dam bank to the right, and a mass of grass trees and red stringy-barks to the left.



‘...an action of delicate and precarious manoeuvring...’

The easy way out was to tip-toe (yeah, right) the excavator through the tiger orchid colony, but no, it had to be up the dam bank, an action of delicate and precarious manoeuvring by my husband. The art of prioritising orchid habitat over all else has been a slight point of contention between my husband and I. He, on the one hand, will prioritise aspect, efficiency and practicality. I, on the other, vehemently prioritise the habitat of those who we are joining with in this place. However, I am very blessed to now declare that he has so fashioned his sensitivities as to now be as mindful as I am about every single plant. So together, we now tread with deft care as we go about making a space for our home to be.

As we have begun preparing for the major works, there have been weekends when my ambition was to begin to improve the habitat in which some colonies grew. In one of these well-intentioned moments, I set to weeding carefully around a plot of greenhoods. The sweet vernal grass, which has also colonised our lowlands, is one introduced pest that we are keen to control. At the conclusion of four hours of painstaking work, I stepped back to admire the first fruit of my weed eradication program, a carefully weeded colony of nodding greenhoods. Upon the very next visit to the block a fortnight later, I was utterly horrified and devastated to find that all orchid shoots had been nibbled back to nothing. I cursed that apparently I had removed from the area the common foodstuff of the local herbivores, and maybe the necessary camouflage of the orchid shoots, leaving them exposed and unprotected for an ensuing carnage. Herein lies one challenge of well-intentioned weed control, and the possible lessons I need to learn about how that is best achieved, given that the priority is conservation and proliferation of our orchid colonies.

In installing our mains power supply, along a line carefully picked out to avoid all known orchid colonies, we proceeded slowly, carefully separating the topsoil from the clay sub-soil as we dug the trench, so that we could replace the clay first and re-cover with topsoil to enhance regeneration on the disturbed line. Despite our mindfulness, part of the patch that was weeded, exposed, and nibbled back was inadvertently covered with a thin layer of clay from our trench excavation. This was a double blow of disappointment, more in our selves, for we had now not only caused the demise of a whole new crop of greenhoods, but allowed the spot to be polluted by spoil from the trench. Our despondency and guilt brewed for half a season, until upon a hopeful re-wandering of the area, we discovered a fresh, vibrant and luscious crop of greenhood shoots pushing up through the spoil. They appeared



Budding beautifully in the clay spoil



‘...singing the Polish national anthem...’

to be more vigorous than the last year's crop. We were faced with another challenge. Should we just leave well alone, or should we try and gently sweep away some of the clay spoil? We decided to leave them, to not interfere, and celebrated their demonstrated resilience. They are now budding beautifully.



Young leaf of greencombe Spider
Orchid on old mullock heap

As we reflected on this happening, we considered other settings in which the orchids have flourished. Much of the property shows signs of having been extensively dug over during the gold rush of the 1860's. There are many slag heaps of clay, shale, and mine spoil. These, we have found, are populated by a dense variety of mosses, fungi and lichen, and quite unexpectedly, orchids. In some places, a solitary stem rises from the spoil, and has produced a beautiful flower. From among other piles, set beneath the red stringy-barks, narrow-leaved peppermints and cherry ballarts, whole colonies of spider orchids and greenhoods proliferate. There is little rhyme or reason, from our grid of understanding, as to how orchids come to inhabit such a diverse range of conditions. These discoveries have forced us to abandon our early ambitions of restoring the original topography back to pre-Gold Rush conditions by smoothing out the "heaps" back into the old, dug-out areas.

With the use of different machines for different works on and down into the soil, we have had to be mindful of what pathogens and weeds we could potentially introduce. To ameliorate this, we have set aside a wash-down area and liberally spray fungicides onto the vehicles and machinery that come onto the property. This quarantine is a challenge due to the time, cost, and effort required, not to mention the patience of visiting contractors. One such contractor stood in utter disbelief as my husband meticulously applied Phytoclean to a truck's underbits before it delivered its cargo. Herein lies another challenge: that of the mindset of the as-yet unaware, the rampant naivety of the masses who have not yet had the wonderful conversion experience of looking down and seeing what rarity and beauty grows up from beneath our feet.

As we think about our rationale and scope for the future conservation of the orchids that grow naturally on our block, the mission is not over. While we have saved the block from its advertised destiny of it being an ideal retreat as a dirt bike riding haven and bushies weekender, or alternatively a potentially neglected bush block upon which the uncontrolled spread of blackberries, radiata pine, gorse and sweet vernal grass might have eventually strangled the native flora, we still have many challenges ahead. While we will have no trouble in keeping motorbikes, horses, cattle and sheep off the property, wild goats that roam the neighbouring Enfield State Forest could, in a brief moment, decimate a season's growth, and compromise the necessary cycle of pollination. Similarly, while we are dependant on seasonal rainfall, and have no control over its provision, the management of water on the block to avert potential soil erosion, maintain pondage levels in the four dams on the block that are a wildlife magnet, and provide for our own reticulated water, becomes implicated in our overall preeminent philosophy of preserving and now enhancing the native orchid habitat.

Questions that have yet to be answered are numerous. One, for example, is to what length should we go in our quest to minimise the threat of destruction by consumption, courtesy of the wandering and foraging fauna and crawling, leaf-munching insects? One option was inspired by our wanderings through the Otways National Park in hunt for the Anglesea Large Bearded Greenhood orchid, when we stumbled across the late Ted Faggetter's attempt at creating an exclusion zone around a small plot of rare species. Mesh cages might keep the goats off, but they also keep off all the local herbivores. Perhaps an occasional strategically placed fallen branch might serve to protect enough members of a colony to give me peace of mind, but allow grazing by native fauna too. Attempts to control pest insects and invertebrates are just as likely to discriminate against pollinators, or at least thwart a stage of their cycle of life. The overarching approach to finding solutions to such questions lies within the chief question itself, and that is: what can we do, if anything to enhance and encourage the spread of the 30 or so species we find grow naturally on our block? Perhaps we just need to reconcile ourselves to the inevitable grazing by creatures great and small, monitor the impacts on the colonies, and learn to propagate some of our orchids to supplement the populations where necessary.

As we look forward, on through the immediate task of home building, and the related challenges we have before us, we have an abiding passion to minimise any ongoing deleterious impact that arises out of our presence, no matter how discretely we choose to live on this beautiful bush block. Moreover, we are keen to actively learn ways and means to more than merely befriend our indigenous population of native orchids. We want them to prosper.



© Emily Noble 2013

Spilosoma glatignyi (Black and white tiger moth caterpillar) dining on a *Thelymitra* (Sun Orchid) on our block.