Responses to replacement, recovery and threat abatement strategies

In this response I will present data on only those species with which I have been personally involved. Most are in the Shoalhaven LGA.

***Caladenia tessellata*:** This species came to note after extensive naturally occurring bushfires during the summer of 2002-2003. Since that time the vegetation has overgrown the orchid population to the extent that no orchids have been seen on the site since 2010. The population has slowly decreased in numbers and visibility since that date. Sparse vegetation of less than one metre in the initial years following the fire is now over two metres and the density has markedly increased. This has suppressed orchids to the point where they are unable to flower. Spread throughout the same habitat was once tall individuals of *Diuris sulphurea* but these also no longer produce flowering plants. I feel a proper and timely fire regime is the only means of re-introduction of *C. tessellata* to this site. Following approaches to local OEH staff I was informed that no conservation initiatives would be commenced unless funding was available as part of the PAS 2 determinations. As I took part in many of these talks I fail to see their purpose if funding is not guaranteed in some measure for all of the species which were the focus of the program.

Calochilus pulchellus: The vegetation on both sites has not altered significantly since the original discovery and both sites are relatively secure. However numbers at the Vincentia site began at four, all of which were hastily relocated to permit the Stockland residential development. This was permitted as the species had not yet been formally described and named. All relocated species died. Another population was later found nearby and numbers have increased over the years from five to eleven but this year two individuals only managed to flower. An EA has been conducted for a very large development south of Nowra which is known as the Comberton Grange site for the Shaolin Temple. The EA noted a "Beardy orchid", which so far remains unidentified. This species could be *C. pulchellus* as it was rediscovered less than 10 km from the site. A failure to identify terrestrial species is not uncommon in the Shoalhaven LGA. This species is endemic to the Shoalhaven LGA.

Pterostylis pulchella: There is no immediate threat to the population on the Cambewarra Range as few people are aware of the site and access is quite difficult. An occasional site inspection will be of benefit.

Pterostylis gibbosa: The population at Yallah is in need of an environmental burn as the entire site is overgrown with low non-native weeds. Other weeds such as *Lantana* and an increase in *Pittosporum undulatum* can be controlled by voluntary labour via ANOS Illawarra but one other weed *Bryophyllum delagoense* (Mother of Millions) has in the past few years appeared along the eastern fence line adjacent to the railway line. Therefore any burn or eradication of *Bryophyllum delagoense* will require the collaboration of Rail Corp, Shellharbour Council and the electricity authority. The population at Croome is now more secure since the installation of a water main to control school holiday fires.

The population at Milbrodale in the Hunter region is under extreme threat from illegal activities associated with off-road racing. *P. gibbosa* and an unnamed *Diuris* sp. are situated on Dodds Travelling Stock Route which is currently being seriously degraded. Apart from racing activities, a parking area has been established and has been mowed, cultivated and fertilised. I am aware the Environment Minister has been informed in the past few days. If

these illegal activities continue, these populations will be destroyed. The population in the Worrigee Nature Reserve fluctuates with weather patterns.

Genoplesium plumosum: More than one population is subject to herbivore predation but whether this is by native or non-native species is so far inconclusive despite the installation in 2013 of motion detection cameras. Vehicle access to the population immediately north of the residential section and golf course is available but should be restricted. Several annually monitored Control Plots exist at various locations.

Cryptostylis hunteriana: One of the most pertinent points regarding the recovery of this species is the inability of those entrusted with environmental assessments for a range of developments to recognise the species. The fluctuating flowering patterns are also a contributing factor, in that plants do not flower to any reliable pattern. Insufficient recording of disjunct populations is also a contributing factor. This applies to the already mentioned environmental surveyors and amateur orchid enthusiasts.

Diuris aequalis: The population at Mount Rae is under extreme threat due to the logging of trees under the guise of a Private Native Forestry Operation. Unfortunately PNF is a voluntary operation with no requirement to survey for, record or report any threatened species note before or during the operation. Until this legislation is changed the Mt. Rae population will remain under this threat. The existence of the few plants on the Wombeyan Caves road verge should be provided (if not already) to the ULSC in order for normal road maintenance to be conducted having regard for proper protection of these plants.

Genoplesium superbum: The population in the Morton National Park adjacent to Braidwood Road is yet to fully recover from actions by road construction equipment which removed a small section of the NP with a Grader. The spoil from this operation was deposited on the site and later cleared by hand. A prosecution was not enacted despite habitat being destroyed. Other populations at Mongarlowe are subject to vehicle access and this is the major threat.

Genoplesium baueri: The population of 72 plants at Callala are currently secure; however this population was originally located during a survey for a residential development. The species was not identified by those undertaking the survey but by an amateur orchid enthusiast. The status of the development is at this stage unknown. Three individuals were deliberately destroyed at Bomaderry Creek in February 2013 but no action was possible. Most populations, despite the existence of some in a NP, are subject to threats such as track widening. This also is a little recognised species, subject to seasonal variances. Other populations in the Shoalhaven LGA are under development pressure, mainly from a development focussed council.

Prasophyllum affine: Fortunately the population at Vincentia is secure as 53 ha of habitat were “gifted” to the OEH by the developer. Three annually monitored Control Plots are situated on this “gifted land. One of these plots is under threat from inundation from adjacent building construction, however the SCC is unconcerned. The largest population known population occurs on private land and its security cannot be assured despite the EPBC TSC listing. Cattle graze this property with not protective barriers for any individual plant.

Four annually monitored Control Plots are on the property. This species is endemic to the Shoalhaven LGA.

Pterostylis ventricosa: Another little recognised species and possibly threatened by the Shaolin Temple development at Comberton Grange, south of Nowra. A population is less than one kilometre from the development but the species was not subject to a survey. A *Pterostylis* species was noted in the EA Report and my concern is it may have been *P. ventricosa* as its preferred habitat type exists on the site. This is a common trait among those involved in EA work. In 2013 three individuals were destroyed by a PNF west of Nowra but again no action is possible. An unknown number of this species exists on private property subject to grazing at Sussex Inlet. This property is one of several Paper Estates in the Shoalhaven LGA. This species is endemic to the Shoalhaven LGA.

Pterostylis vernalis: Relatively secure but numerous plants occur on the Shoalhaven Campus of the University of Wollongong and although the university has ample room for building expansion, a close watch must be kept on individuals which are *in situ.* A new population of approximately 50 plants was located in 2013 during work to replace power poles. This area was shown to the electricity company and any impact was avoided. This species is endemic to the Shoalhaven LGA.

Rhizanthella slateri: One site for this species in the Shoalhaven LGA has been destroyed as despite a 50 metre exclusion from the orchid was introduced, that exclusion zone is now below 20 metres and I believe the orchid is lost from that site due to the lack of enforcement and oversight of the exclusion zone by the SCC. The condition of the first discovery of *R. slateri* is unknown as the owner has moved, although the property has not been sold.

The preceding is the most recent information available to me regarding the species mentioned. I realise many of the responses contain my concerns about specific surveys and orchid sites but experience indicates the quality of surveys for orchids is poor. This is in part due to the lack of interest/knowledge among many who undertake this work and PAS 2 can remedy this situation, not only with increased funding but publicity among professional surveyors regarding identification and recording of all species located during surveys

Alan W. Stephenson
Conservation Director
Australian Orchid Council (AOC)
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