

# Threatened Plants Tasmania Newsletter August 2018



*Limonium australe* var. *baudinii*, image Joe Quarmby

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## From the President

Inger Visby, August 2018

Dear all,

This newsletter covers field trips and other activities for the second half of the 2017-18 TPT field trip season. As in other years, it has been a wonderful mix of surveys, training, weeding and conservation work. The latter includes the Orchid Conservation Program at the Royal Tasmanian Botanical Gardens, which TPT is very proud to support. This program is working hard on establishing a living collection of our threatened orchid flora, and Autumn 2018 saw the first *Caladenia anthracina* plants survive a summer - well done to Margali, Nigel and team!

TPT has been visiting Calverts Hill since 2013, and many of us have shared the heart-breaking experience of seeing this once stronghold of the federal-listed *Eucalyptus morrisbyi* dwindle to seven adult trees. Thankfully new federal funding has now been received by a NRM South lead project team, who are working hard to protect the remaining adult trees and encourage the juveniles that have popped in recent time. We are very pleased to see this new level of coordination between multiple partners, including Parks & Wildlife Services, UTAS, TPT, pakana Services, The Tasmanian Seed Conservation Centre, Conservation Volunteers Australia and the Understorey Network Nursery. Let's hope it is not too late.

It would be remiss of me not to mention that this year is also a major milestone for TPT, celebrating our 10-year birthday. TPT was created in 2008 with the aim of helping to conserve Tasmania's rare plant species. The initiative came from the senior botanists of the Threatened Species Section (TSS) of DPIPWE, who were struggling having time and enough people-power to conduct much needed threatened flora surveying. An initial grant from the Threatened Species Network funded a part-time project officer, who organised the inaugural meetings and field trips, and established TPT as a sub-group of Wildcare. And now, 10 years later and **over 260 field trips later**, TPT is a well-respected organisation, that conducts important conservation work that has long been appreciated and highly valued by the State Government, the three NRMs, and a large number of private landholders.



December 2017, celebrating 10 Years of TPT at the Botanical Gardens. TPT's four presidents over this time. From left, Inger Visby (4<sup>th</sup>), Alison van den Berg (3<sup>rd</sup>), Viv Muller (2<sup>nd</sup>) and to the right Phil Collier (1<sup>st</sup>). And Richard Schahinger, who was the Threatened Species Section's Senior Botanist who lead the establishment of TPT.

The enduring success of TPT is in large parts due to Richard Schahinger, recently retired Senior Botanist with TSS, the many TPT committee members who have worked tirelessly behind the TPT scene over the years, and of course, and especially, the hundreds of TPT volunteers who have participated in our trips.

I hope you will enjoy the stories from our recent outings and become inspired to join us in the future. Check out the upcoming trips at the end of this newsletter.

Winter warm regards,

Inger Visby

## TPT in the Field

### Central Plateau 6-7 January 2018

By Geoff Curry

A group of a dozen TPT volunteers led by Richard Schahinger spent a weekend in early January surveying areas around Lake Augusta on the Central Plateau for rare and threatened plants such as *Stackhousia pulvinaris* (alpine candles), *Ranunculus jugosus* (twinned buttercup) and *Ranunculus collicola* (lake augusta buttercup), *Australopyrum velutinum* (velvet wheatgrass) and some highland orchids.

After a familiarisation with the target species and the locations they were likely to be found we split into smaller groups to survey as much likely habitat as possible. The terrain was often difficult to traverse but the weather was kind and the survey groups were able to check the target areas and all groups able to add verified locations for threatened plants to the known data for this area.

Over the weekend the group recorded 13 species listed as Rare or Vulnerable on the *Threatened Species Protection Act 1999* and in doing so made a considerable contribution to the knowledge of the flora in this remote area. It is also worth noting that in the wake of the trip, notesheets for two of the target species (*Argyrotegium poliochlorum* and *Ranunculus collicola*) were updated. These are available from [www.threatenedspecieslink.tas.gov.au](http://www.threatenedspecieslink.tas.gov.au).



**Left:** *Trithuria submersa*, one of the rare species found during the survey; **Right:** TPT volunteer Sabine Borgis having a closer look at *Trithuria* (Image: Richard Schahinger)

## Surrey Hills 24 January 2018

By Phil Collier and Robin Garnett

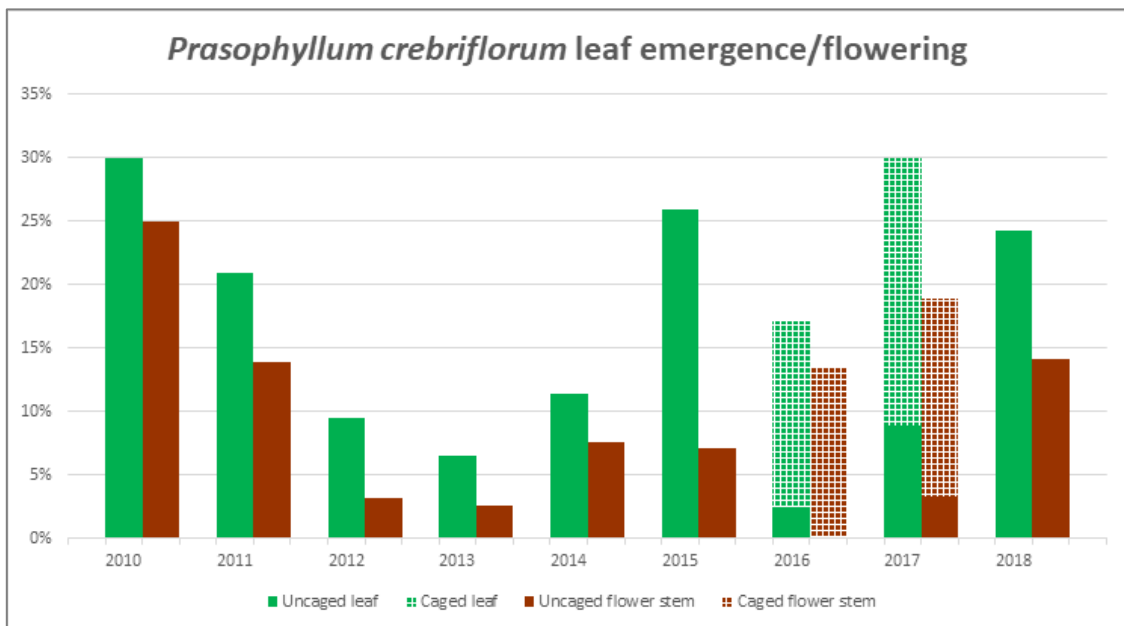
Our transect for monitoring *Prasophyllum crebriflorum* at Westwing Plain was last burned in 2014. The tussock grassland on this fertile well-watered site is now getting quite thick again, and we struggled to find some of our tags. However, we persisted and found nearly all of them. The summary results in terms of the percentage of tagged plants emerged and in flower are some of the best we have seen, see chart. (In the previous two seasons half of the plants were caged, and very few of the uncaged plants flowered successfully.) It seems that *P. crebriflorum* is not a disturbance-dependent species, and we already know that grazing of flowering stems soon after a burn significantly reduces the subsequent flush of flowering.

Just when you think you are seeing a pattern, ecological studies seem to have a habit of producing “inconvenient” results. At our “cricket pitch” quadrat at Hatfield Plain we struggled to find many flowering plants in 2019, this compared to the bumper year at nearby Westwing. The main difference between Westing and Hatfield is a few more years unburnt at Hatfield, the last burn was in 2011. So maybe *P. crebriflorum* is disturbance dependent, but on a longer time frame than many other orchid species.

Our MOU with Forico has a milestone in 2019, with an optional extension for a further five years. We will try to reconcile all our data into a coherent story about the demographics of *P. crebriflorum* next year, which will help to determine whether another 5 years of monitoring would be beneficial.



TPT volunteers using all our tactics for finding buried tags: measurement, metal detector, and feel. (Image Robin Garnett)



Percentage of tagged plants that emerged and flowered. Note in 2016 and 2017 about half of the plants were caged. In all other years the results relate to uncaged plants.

## Mount Field 27 January 2018

By Alison van den Berg and Richard Schahinger

The TPT trip to Mt Field's Mawson Plateau went ahead under clear skies and in 30 degree heat, with just the odd copse of stunted pencil pines for shade and relief. Our target was the rare cushionplant eyebright (*Euphrasia gibbsiae* subsp. *pulvinestris*), a species known only from high altitudes at Mt Field. As the common name suggests it is typically associated with cushion plants. This was expected to be a straightforward exercise given the experience at K-Col the year before, with 'success' a given. Wrong!

Flowering had pretty much finished, and the *Euphrasia* we were seeing in cushion plants was not our target, but rather *E. gibbsiae* subsp. *gibbsiae*, a species characterised by a dense cover of glandular hairs over all its foliage (see pic below). This was contrary to all expectations, which in itself is a step forward in our understanding, but somewhat perplexing on the day. On the plus side, several plants of what we took to be our target species were found at the margins of some small tarns on the plateau's southern margin, though the lack of flowering material means that a definitive identification will have to wait until next season. On the double plus side...the scenery was spectacular.



*Euphrasias in cushion plants on the Mawson Plateau, 27 January 2018 (with the rare mawson pine)*

## Heathy Hills 3 February 2018

By Viv Muller and Magali Wright

Since late 2014, with the help of NRM South and the Foundation for National Parks and Wildlife, TPT has been co-ordinating a gorse-removal effort from the *Mirbelia oxylobioides* population in this Nature Reserve. Primary removal was carried out in 2015, but our last visit in December 2016 revealed a massive activation of gorse and other weeds from the existing seed banks after good rains. Subsequently our weed contractor made a follow-up visit to help control this new growth. On this visit we confirmed the success of that effort, re-recorded our Photopoints, and surveyed for weeds and native species growth, mainly through the *Mirbelia oxylobioides* area.

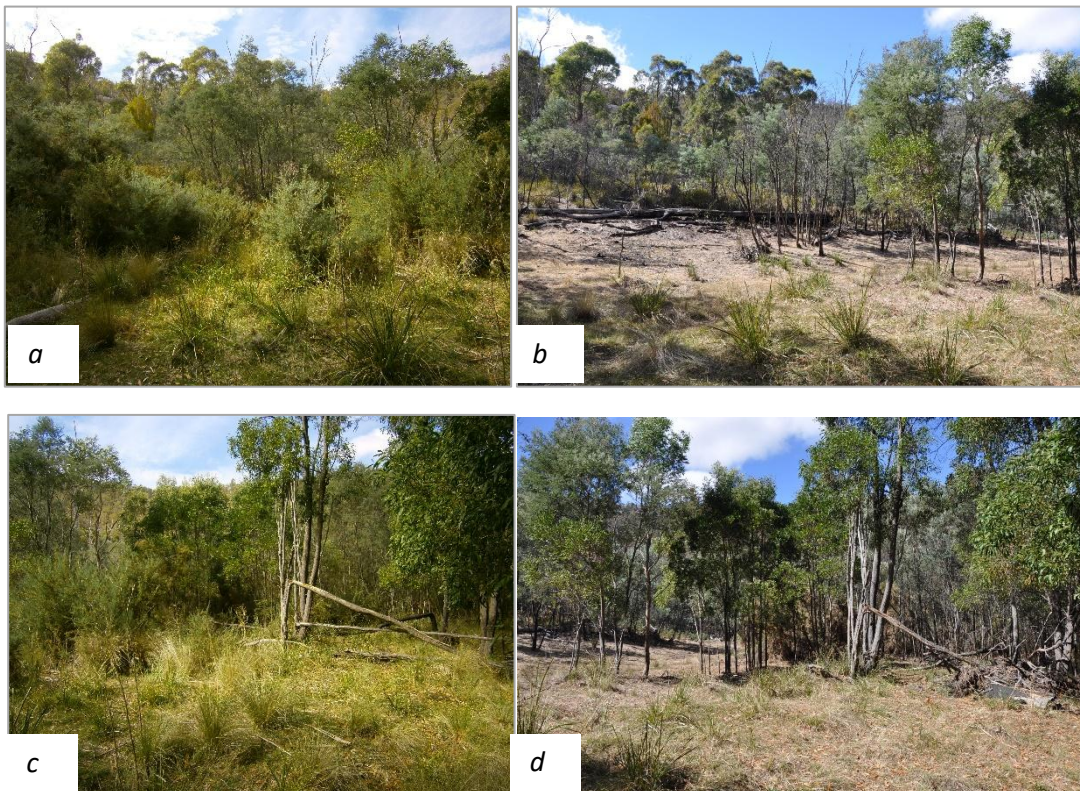
As far as weed growth went, there were a number of small to medium gorse plants, although the re-growth numbers had been effectively reduced since our previous visit. Some of us treated these new plants using Glyphosate administered via the 'cut and paste' technique. The dense thistle growth previously observed was reduced, although some remains, and there were also a few *Reseda luteola* and *Verbascum thapsis* in evidence as well as the ever-present hemlock (*Conium maculatum*). Further weed treatment by the weed contractor has been completed since our visit.

As far as native regrowth goes, there were a few small *Mirbelia* plants discovered, although not in the weeded area. The riverbank area had been scoured free of vegetation by a recent flood, but native grasses and herbs are re-growing well in at least one area previously thick with thistles, and new Pomaderris, Eucalypt, Acacia and Bursaria seedlings are in evidence. However, because of the thick remaining stands of gorse found contiguous with the Reserve, the area will require regular and constant follow-up every couple of years at least, to maintain control of the gorse invasion.





TPT volunteers cut and paste small gorse plants at Heathy Hills Nature Reserve. Three years ago, a thicket of large gorse plants stood at this site. The edge of the *Mirbelia oxylobioides* population is located above the sandstone ledge in the top left of this image.



**a-d.** Before and after images of weed control outcomes at Heathy Hill Nature Reserve, with *a* and *c* showing sites less than 100m from the only Tasmanian *Mirbelia oxylobioides* population in Feb 2015, and *b* and *d* showing the same location on a TPT field trip in March 2018.

## Triabunna 10 March 2018

By Richard Schahinger

In March 2018 TPT undertook a census of *Limonium australe* var. *baudinii* at Spring Bay near Triabunna. This species is listed as vulnerable on both the Tasmanian *Threatened Species Protection Act 1995* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. The taxon grows in the upper intertidal areas of saltmarshes in Tasmania's southeast, being known from three sites in Spring Bay with a total of c. 600–700 mature plants, and a site at Saltwater Creek on the Tasman Peninsula with c. 25 mature plants.

The census involved systematically re-scoring the number of flowering and non-flowering plants in each of the three known sites at Spring Bay, along with notes on the condition of the sites and the presence of threatening processes.

Results: Plant numbers at each of the three sites were found to be about double those recorded in the mid-2000s (Table 1), although the areas with the highest plant densities in 2018 remained much the same as those in the mid-2000s. Flood and tide events since the mid-2000s had led to the erosion of habitat at the Vicarys Rivulet and Double Creek sites, with the loss of at least some plants, but this was more than offset by an increase in plant numbers elsewhere.

**Table 1:** *Limonium australe* var. *baudinii* population data for Spring Bay sites

Site	2004/2006		2018	
	Flowering	Vegetative	Flowering	Vegetative
Vicarys Rivulet	172	200+	406	833
Maclaines Creek	120	240+	209	1090
Double Creek	364	300+	794	1594
<b>Total</b>	<b>656</b>	<b>740+</b>	<b>1409</b>	<b>3517</b>

The 2018 census indicates that the *Limonium* populations at Spring Bay are ticking along quite well. Recovery actions undertaken during the period 2008–2012 have proved to have been highly successful, viz., stock-proof fencing at Vicarys Rivulet, bollards at Double Creek to prevent inadvertent mowing. However, the species' localised distribution means there is still a relatively high risk of local extinctions: the majority of plants are in just four or five discrete patches, and there is little room for its saltmarsh habitat to move in the face of rising sea levels. A more immediate threat at two of the sites is the invasion of radiata pine wildings. The results of the 2018 census have been sent to NRM/Council staff in Triabunna, and it is anticipated that the pines will be treated in the near future.



*Vicarys Rivulet (east side): 14 August 2008 (stock-proof fence erected in July 2008)*



*Vicarys Rivulet (east side): 10 March 2018*

## Calverts Hill 17 March 2018

By Viv Muller and Magali Wright

TPT has been visiting Calverts Hill since 2013, and it has been a depressing experience. We have seen the mature trees in this main natural stronghold of *Eucalyptus morrisbyi* make a valiant attempt to recover from extensive drought, insect and vertebrate damage, only to finally succumb to the point where only seven adult trees now survive. TPT has already been involved in a census of the adult trees during this decline and in a trial to investigate methods to protect suppressed juvenile plants. Caging was found to be the most successful treatment to protect these plants with many cages now containing healthy saplings.

An NRM South lead project team have been successful in obtaining funding for recovery actions through the Australian Government's Threatened Species Recovery Fund to try and reverse the decline at this site. The project team involves multiple partners, including Parks, UTAS, TPT, pakana Services, The Tasmanian Seed Conservation Centre, Conservation Volunteers Australia and the Understorey Network Nursery, and there is now major and co-ordinated action to protect and

encourage the many juveniles and remaining adult trees. Actions have included fencing, tree banding, weed control, seed collection, revegetation and genetic analysis to inform seed banking efforts.

There is now a new animal exclusion fence which surrounds the main portion of the site, and the aim on this trip was to set up several transects (approx. 300m long) through the largest enclosure, and to tag, measure and assess all the seedlings found 1m either side of the transect line. In the event, we managed two complete transects out of a possible six, and all five of us were pretty tired at the end of a very warm day, after ducking and weaving through and under some thick vegetation and popping up and down to measure things. It was heartening to see that most of the *E. morrisbyi* juveniles were in good condition, and that at least two of the surviving trees were developing some significant canopy again. The results of the TPT survey, combined with work conducted by UTAS Field Botany students in February have lead to a conservative estimate of over 2,000 *E. morrisbyi* juveniles across the site. Further surveys will be undertaken to improve the accuracy of this estimate.

## Cascades 24 March 2018

By Doug Clarke

A group of 11 TPT members surveyed several areas in the Cascades - Waterworks area for the endangered *Corunastylis nudiscapa* (bare midge orchid). The work was undertaken under the technical expertise of Richard Schahinger and Joe Quarmby.

*Corunastylis nudiscapa* was thought to be extinct in Tasmania until it was re-discovered in 2008 in the Cascades - Waterworks area. It is now known from several diffuse patches in the Cascades - Waterworks area as well as an 'outlying' site near Oyster Cove. This survey had the objective of revisiting known sites in the Cascades - Waterworks area and nearby areas of potential habitat to see how the species is travelling.

The group split up into 3 teams to survey different locations with an indifferent forecast and most finished their surveys in rain just before lunch. Then all assembled together after lunch to survey a more remote site in the Waterworks reserve.

*Corunastylis nudiscapa* was found in all sites surveyed. A total of 95 plants were found in flower, with an additional 15 plants not definitely identified and a further 75 leaves that could be either *Corunastylis nudiscapa* or *Corunastylis nuda*.

## TPT Training Workshops June 2018

By Kerri Spicer

Two training workshops were undertaken in June 2018 to help upskill TPT volunteers in understanding and describing threatened flora habitat. Funding from the three NRM regions enabled this training and both days were expertly presented by Mark Wapstra from ECOtas.

The first training day focused on eucalypt identification. Mark had managed to collect samples for all of the Tasmanian eucalypts and the morning was spent familiarising ourselves with the eucalypt key and having a go at keying out eucalypts from the multitude of samples available. Luckily Tasmania had put on a relatively mild winter day. We spent the afternoon progressively moving up Mt

Wellington and got the opportunity to observe and key out 8 different eucalypt species in the afternoon.

The second training day expanded on the first and delved into world of vegetation classification. Mark managed to make vegetation classification “sexy” explaining the different threatened flora species that are potentially associated with different vegetation communities. The TASVEG classification system was explained and we got to work through a number of the TASVEG keys to familiarise ourselves with how these work. The afternoon was spent in the field classifying a number of different vegetation communities in and around Hobart and observing some of the complexities involved with vegetation classification.

Both days were very well received by those that attended and its hoped some of the new found knowledge will help people to better describe and understand the environs in which our threatened flora are found in.



Mark Wapstra demonstrating to TPT members how to identify Eucalypt species during the workshop

## Orchid Conservation Program

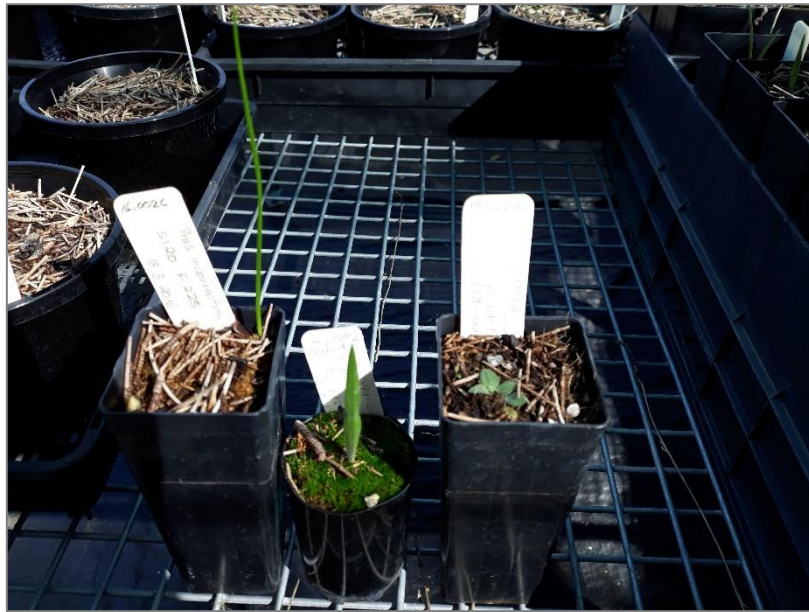
By Magali Wright

TPT and Friends of the Tasmanian Royal Botanical Gardens (FRTBG) continue to support the Orchid Conservation Program supervised by myself and Nigel Swarts. This program aims to support orchid conservation by establish a living collection of our threatened orchid flora at the RTBG for insurance populations, conservation research and eventually reintroduction programs for priority species.

We are now working on propagating 12 EPBCA listed species under laboratory conditions with orchid mycorrhizal fungi. This year we set up germinations from December 2017 to March 2018 on oatmeal agar plates inoculated with compatible mycorrhizal fungi. Resulting seedlings were transferred into larger growth containers with sterile vermiculite over oatmeal agar, then potted out (deflasked) into

the nursery in June-July 2018. This season we potted out over 250 seedlings from species including *Prasophyllum incorrectum*, *Caladenia tonellii*, *C. anthracina*, *Pterostylis ziegelerei* and *P. cucullata*. As these plants experience annual dormancy, dying back to their tubers over the summer months, only those seedlings that have been able to produce a sufficient tuber in their first season will survive. Due to difficulty restoring mycorrhizal fungi from storage our propagation program ran 2 months later than planned, giving seedlings a shorter first season in pots. The majority of these seedlings were large and robust on deflasking, so it will be interesting to see if the shorter growing season impacts on survival rates on re-emergence after the summer months.

There are over 160 plants from six EBPCA listed species in the living collection at the RTBG Nursery that have survived at least one summer dormancy. Autumn 2018 saw the first *Caladenia anthracina* plants surviving a summer, a species we have attempted to propagate for the last 3 years.



Plants of *Caladenia saggicola*, *Pterostylis ziegelerei* and *Prasophyllum incorrectum* that have survived multiple summers in the Royal Tasmanian Botanical Gardens nursery (Photo Kate Shaw).

## TPT Field Trips 2018/19

Threatened Plants Tasmania has an active field trip program mostly in spring and summer to survey, monitor and manage the habitat of threatened and endangered plant species. Dates and destinations of these trips may be altered due to weather or changing circumstances. Any updates and details of each trip are sent to the TPT email list and will be available about 2 weeks in advance on [www.wildcaretas.org.au](http://www.wildcaretas.org.au) and [www.tpt.org.au](http://www.tpt.org.au). All trips are led by botanists and data gathered contributes to improved knowledge and management of the species.

The following table lists the upcoming trips planned for the 2018/2019 field season. Note: Some of the dates may be subject to change. Check the TPT website for latest updates.

Date	Action	Site	Species
15 Sep	Survey	Boyer	<i>Caladenia caudata</i> , <i>Pomaderris pilifera</i> subsp. <i>talpicutica</i>
22 Sep	Census	Milford	<i>Caladenia saggicola</i>
6 Oct	Post-fire surveys	East Risdon	<i>Olearia hookeri</i> , <i>Pomaderris pilifera</i> subsp. <i>talpicutica</i> , <i>Spyridium eriocephalum</i>
20 Oct	Survey	Rocky Cape	<i>Goodenia geniculata</i> , orchids
20 Oct	Census & survey	Hungry Flats (Tunnack)	<i>Eucalyptus perriniana</i> & <i>Bossiaea tasmanica</i> (& <i>Acacia pataczekii</i> )
20 Oct	Survey	Dans Hill	<i>Tetratheca gunnii</i>
24 Oct	Re-score transect	Henry Somerset	<i>Caladenia caudata</i>
03 Nov	Survey & weeding	Tunbridge	<i>Prasophyllum tunbridgense</i> , <i>Leucochrysum albicans</i> , <i>Brachyscome rigidula</i>
3 Nov	Survey areas burnt in 2015 & 2016	Bridport	<i>Pultenaea sericea</i> , <i>Prasophyllum apoxychilum</i>
10 Nov	Census	Milford	<i>Prasophyllum milfordense</i>
14 Nov	Re-score transect	Henry Somerset	<i>Caladenia tonellii</i>
17 Nov	Monitoring & survey of burn area	Queens Domain	<i>Hydrocotyle laxiflora</i>
26 Nov TBC	Monitor (set up transect) & survey	Mt Arthur	<i>Boronia hemichiton</i>
27 Nov	Census & rescore transect	Campbell Town golf course	<i>Prasophyllum olidum</i>
1 Dec	Census & weeding	Amy Street	<i>Velleia paradoxa</i>
8 Dec	Survey	Mt Brown	<i>Prasophyllum castaneum</i> & <i>Euphrasia semipicta</i>

## TPT Orchid Monitoring 2018/19

Threatened Plants Tasmania invites your participation in an on-going native orchid monitoring program in 2018-19. This important work can't be done without the help of volunteers, visit [www.tpt.org.au](http://www.tpt.org.au) or email [president@tpt.org.au](mailto:president@tpt.org.au) to discover how to participate. All you need is an interest in learning more about native orchids; no experience or qualifications are necessary.

Most of our monitoring projects now extend beyond 5 years of annual data collection, and the projects become even more valuable with each additional year of data.

Monitoring trips require a panel of interested people who can be called upon at short notice once flowering and fruiting dates are known. If you would like join the "on-call panel" for orchid monitoring, please contact [president@tpt.org.au](mailto:president@tpt.org.au), specifying whether you are available for north Tasmania and/or south Tasmania. Further trips remaining in this program in 2017/18 have been incorporated in the TPT Field Trip program.

## 2018/19 TPT Committee

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TPT is a Wildcare group.

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