**Diuris behrii Project Report 31 December 2018** Les Nesbitt

Autumn 2018 was very dry. Heavy rain fell in July & August while September & October rainfall was normal. November and December were wetter than normal. The late rains delayed repotting as leaves stayed green into early December. 795mm was recorded at the nursery site for the year compared with the 14 year average of 910mm. Repotting of all the daughters & small tubers was completed on 30th December. Large tubers were produced this year which resulted in upgrades from small tubers to daughter tubers for most clones. Some of the older daughter tubers were huge. One big tuber measured 79mm tall by 17mm in diameter. Tuber removal was carried out on the daughters of 40 clones, concentrating on those clones with few daughters. Tuber multiplication was an improvement on the past two years although the extra tubers tended to be very small, some in clusters of 2 or 3. Natural increase was less than 2% without human assistance even under ideal nursery conditions earning the species a very slow multiplier rating of 1.02. 136 extra daughters were produced in 2018 mostly from small tubers getting larger. No daughter tubers were lost in 2018. The Project focuses on daughters as they are convenient for tuber removal and it is daughters that are returned to the mine site each year. See 2018 Daughter Tuber Chart for records of all daughter tubers including those returned to the mine lease.

152 daughter plants were returned to the mine site in 2018 bringing the total returned to 552 plants. At year end there were approximately 80 plants in 73 mother pots, 384 daughter tubers in 100mm pots, 448 small tubers in 125mm pots and about 30 pots containing living seedlings. This gives a total of about 942 diuris tubers in the shadehouse. At the same time last year there were 948 tubers. Starting in 2012, the original 168 diuris plants have increased to 1494 in 7 years. Another 152 daughters (8 trays) should be available for replanting in 2019.

Several hand pollenated seed pods were collected for seed sowing next Easter. Only one new seedling was observed in 2018 while most of the 2017 seedlings did not reappear, possibly due to the dry autumn. The seedling pots were not repotted this year and none produced flowers. The mother pots have not been repotted for the fifth year and none had their tubers removed. A few mother clones have multiplied resulting in clumps of plants.

All of the swan orchid daughter plants are lost as none reappeared in 2018. The three mother plants did not flower. The mother rufa group pterostylis plant did not flower either. None of these pots were repotted. The large pot of Thelymitra bractiata contains a clump of 4 plants, which all flowered although the plants were not as robust as in 2017. No seedlings germinated in the pot this year. Seed was again harvested.