



Illawarra greenhood

Pterostylis gibbosa

Endangered

Target: secure the species through weed management, annual monitoring, hand pollination and seed collection

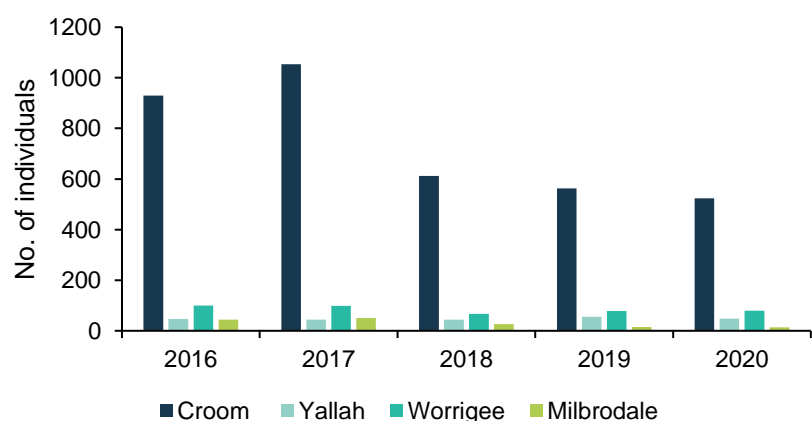
Over the past five years, this *Saving our Species* (SoS) project has managed threats to the Illawarra greenhood (*Pterostylis gibbosa*) through controlling weeds, extending our knowledge of this species with annual species monitoring and broader surveys, and implementing additional conservation measures such as hand pollination and seed collection to enhance the species' long-term security.

This perennial terrestrial orchid is largely restricted to the Illawarra region between south Nowra and West Dapto, with a disjunct northern population in the Hunter Valley. This project has consisted of monitoring orchids across four management sites and undertaking broader surveys to locate more orchids and define habitat occupation. Weed control has occurred at two of the four monitoring sites, and hand pollination and seed collection has enabled three populations of the species to be seed-banked at the Australian PlantBank at Mt Annan. Throughout much of the project, there has been below average rainfall during the key growing season for this orchid (March to September), the impact of which is difficult to quantify and isolate from other factors. Some of the most notable outcomes of this project include:

- **rediscovery of an important population of 140+ plants**
- **finding 1194 new plants across five sites**
- **managing 6 hectares of habitat** for weed control.

Trajectory: decreasing

The actions employed by this SoS project have probably slowed the rate of decline for this species, however, the cause of the decrease remains unknown. Possible contributing factors could be changing climatic patterns and altered pollinator dynamics.



Partners

This project is led by the SoS program in partnership with NSW National Parks and Wildlife Service, TransGrid, Shellharbour Council, two private landholders at the Yallah and Hunter Valley sites, and the Australian Botanic Garden Mount Annan.

What did we find?

Monitoring for the Illawarra greenhood consists of recording orchid counts, flowering and capsule rates at four management sites. This plot monitoring has been complemented with broader surveys to locate more orchids and accurately define other 'active habitat'. This has resulted in the detection of 1054 additional orchids and many active habitat areas beyond monitoring plots at all four sites. This comprehensive monitoring effort has also led to the rediscovery of an important new population in Yallah on private land, at which 140 orchids were present.

During the project, white-winged choughs were found to be a localised threat at two populations due to their excavation and eating of tubers. This resulted in reduced numbers of plants persisting through to flowering and setting seed. Grazing exclusion cages were installed to protect plants within the most vulnerable population in Milbrodale.

Weed control has occurred at two of the four management sites and has also had mutual benefits to threatened ecological communities and other threatened species including the Illawarra Lowlands Grassy Woodland, eastern flame pea (*Chorizema parviflorum*) and *Pimelea curviflora* var. *curviflora*.

Additional conservation measures have been undertaken through hand pollination and seed banking. Hand pollination has been very successful (>95%) and resulted in a substantial increase of natural capsule rates which are typically very low. This has enabled us to bank seed from three populations into the Australian PlantBank at Mount Annan.

The next steps for this project involve further monitoring and attempts to assess exactly what is causing the decline in Illawarra greenhood populations.



An Illawarra greenhood in flower. Photo: Jedda Lemmon/DPIE

Lending a helping hand in pollination

Hand pollination is used to produce viable seed for the Illawarra greenhood. Using a toothpick, the 'pollinia' are removed from one flower then transferred to the stigma of a second flower on a second plant.

A small mesh bag is then placed over the pollinated plant to maximise the retention.

Seed collectors return approximately six weeks later to collect the capsules.



An Illawarra greenhood being hand pollinated. Photo: Jedda Lemmon/DPIE

Saving our Species is a NSW Government flagship program delivered by the Environment, Energy and Science Group in the Department of Planning, Industry and Environment. To find out more about threatened species in New South Wales and the *Saving our Species* program, visit the [Saving our Species Program webpage](#).