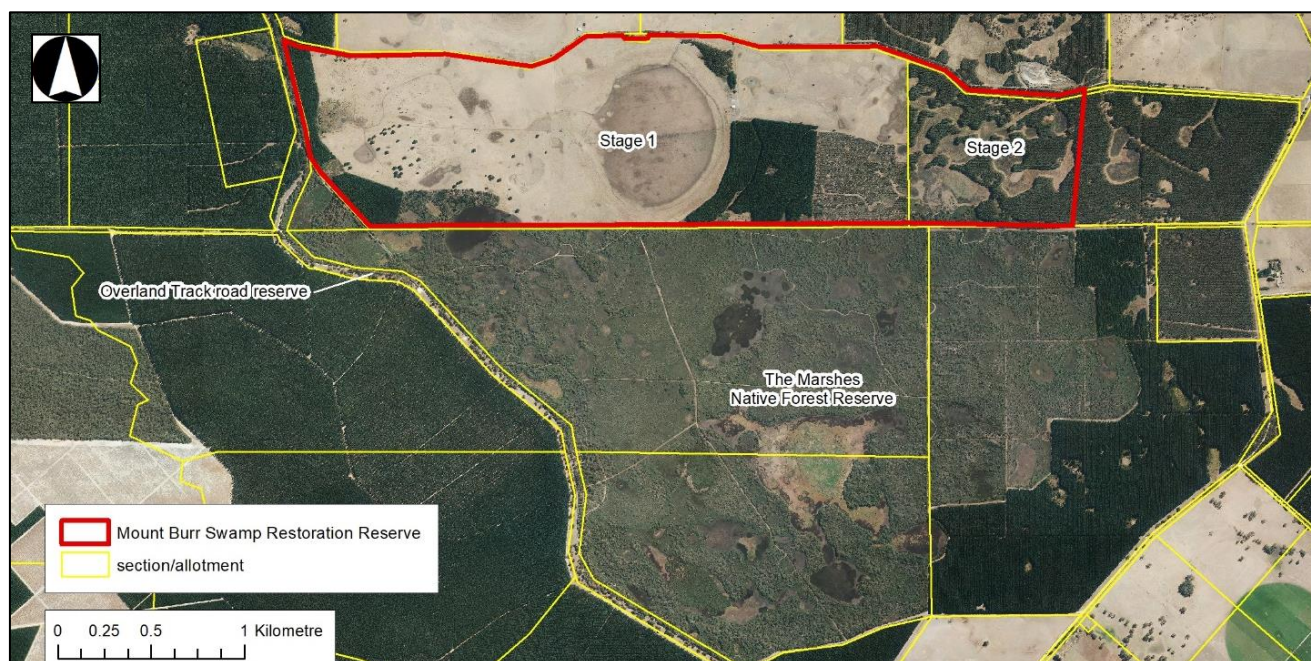




Day 4: Thursday 5th October 2023 Mt Burr Swamp Restoration Reserve

1. Why and how was the reserve created?

Mt Burr Swamp Restoration Reserve is 369 ha property purchased by Nature Glenelg Trust in two stages. Stage 1 was purchased in September 2016 and Stage 2 in October 2018. The property is located in the lower South East of South Australia, east of Millicent and north-west of Mt Gambier, and lies adjacent to Marshes Native Forest Reserve (NFR).

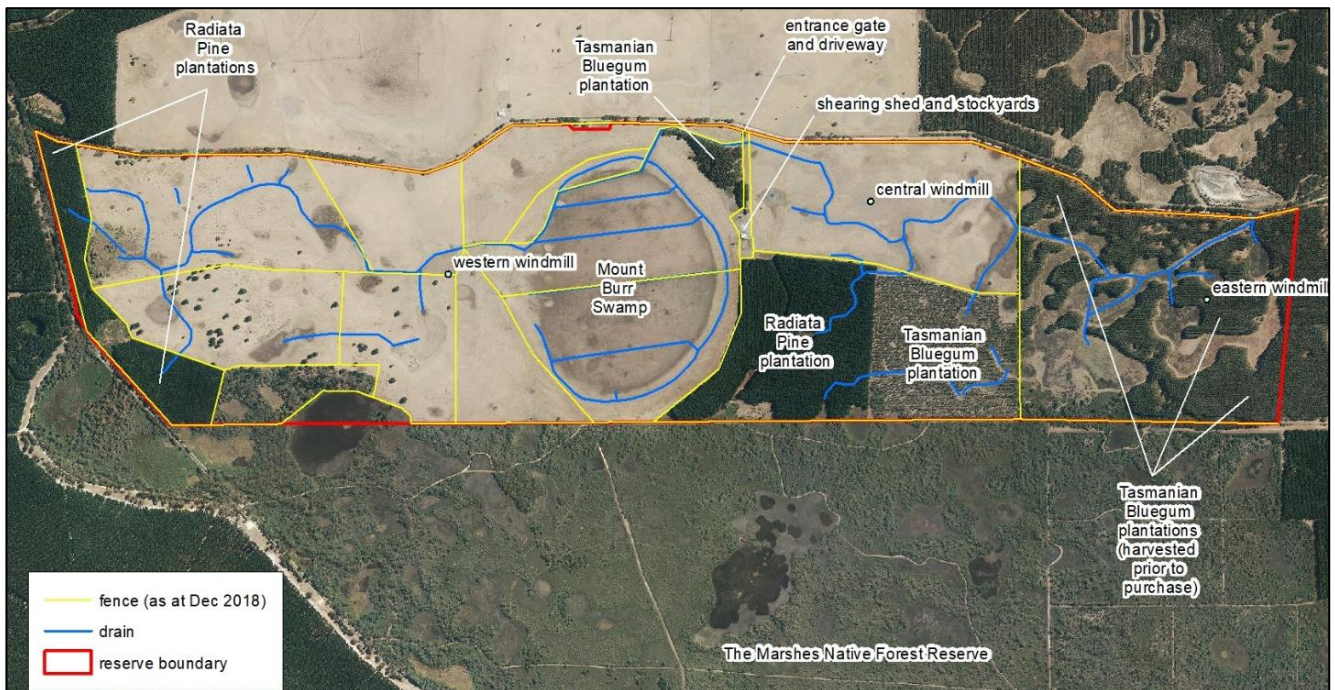


Location and landscape context of the Mt Burr Swamp Restoration Reserve

Marshes NFR is a large freshwater wetland complex, listed in the Directory of Important Wetlands in Australia (DIWA) and is one of 13 priority groundwater dependant ecosystems identified in the South East Region. This wetland area is one of the most floristically diverse nature reserves in SA and provides habitat for no less than six nationally threatened fauna species: Growling Grass Frog, Little Galaxias, Southern Brown Bandicoot, Southern Bent-wing Bat, South-eastern Red-tailed Black-cockatoo and Australasian Bittern. The Marshes provides both a template to guide restoration and a source for wild recolonisation of Mount Burr Swamp. Proposals that identified the restoration potential of Mount Burr Swamp date back to the late 1970s but were not acted upon successfully until NGT completed the purchase of the property. The land purchase was predominantly funded by partnerships that NGT entered into with the Native Vegetation Council (SA) and OneFortyOne Plantations, supplemented by a successful public fundraising campaign that included significant donations from other NGOs, community groups, businesses and private individuals. All donors are acknowledged on a sign on the Mount Burr Swamp shearing shed.

2. A long-term transition plan: from production to conservation

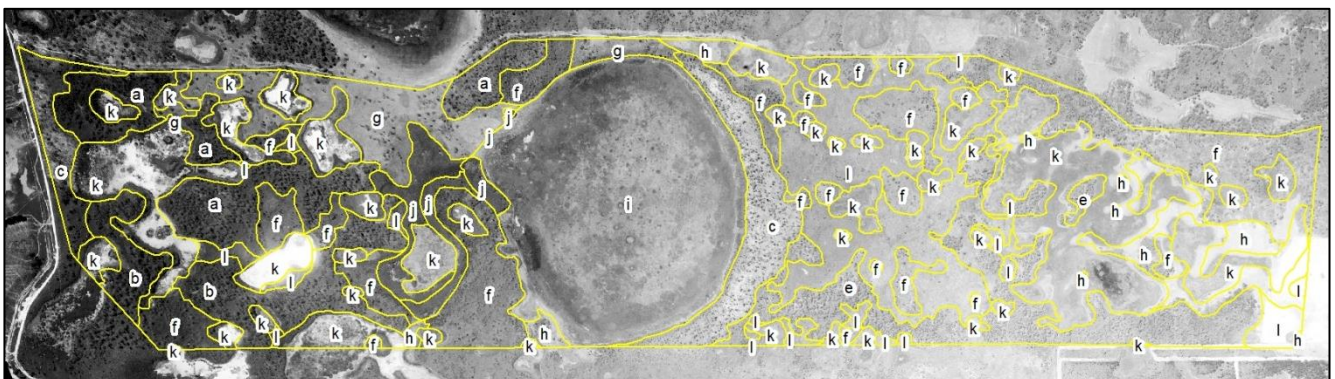
At the time of purchase, the Mount Burr Swamp property was a working farm, featuring multiple paddocks with improved pastures, shearing shed, stockyards, two working windmills with stock troughs and plantations of Radiata Pine (*Pinus radiata*) and Tasmanian Blue-gum (*Eucalyptus globulus*).



Features of the Mt Burr Swamp Restoration Reserve at the time of purchase

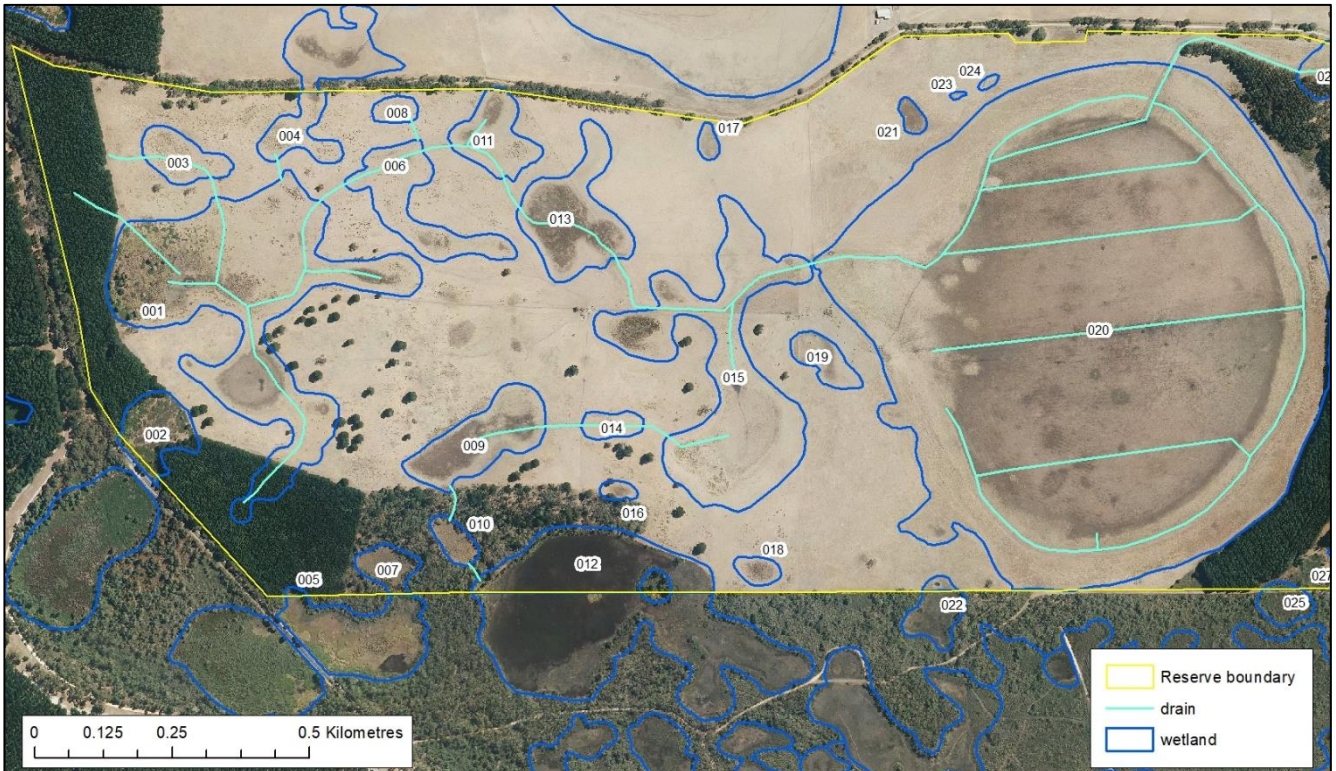
The property has been purchased with the long-term goal of conservation and habitat restoration. Other, complementary objectives may emerge through time. The pathway and mechanisms employed to achieve restoration, are outlined in the Restoration and Management Plan for the Reserve, a live document that is continually updated to document restoration works and monitoring undertaken. The timeline for implementation is not precise and is subject to:

1. the availability of grants, philanthropic donations or other funding sources, including income derived from economically productive portions of the property before they transition to conservation, to support future works;
2. the harvest timing of blue gum and pine plantations on parts of the property under this commercial land use, a prerequisite before restoration can begin in those areas;
3. the ultimate method determined for transitioning pasture areas back to native vegetation; and
4. assessment of the likely post-restoration inundation extent of other drained wetland features, especially those in proximity to the plantation areas (as per point 2.) or with consideration for access requirements for other actions required (as per point 3.).

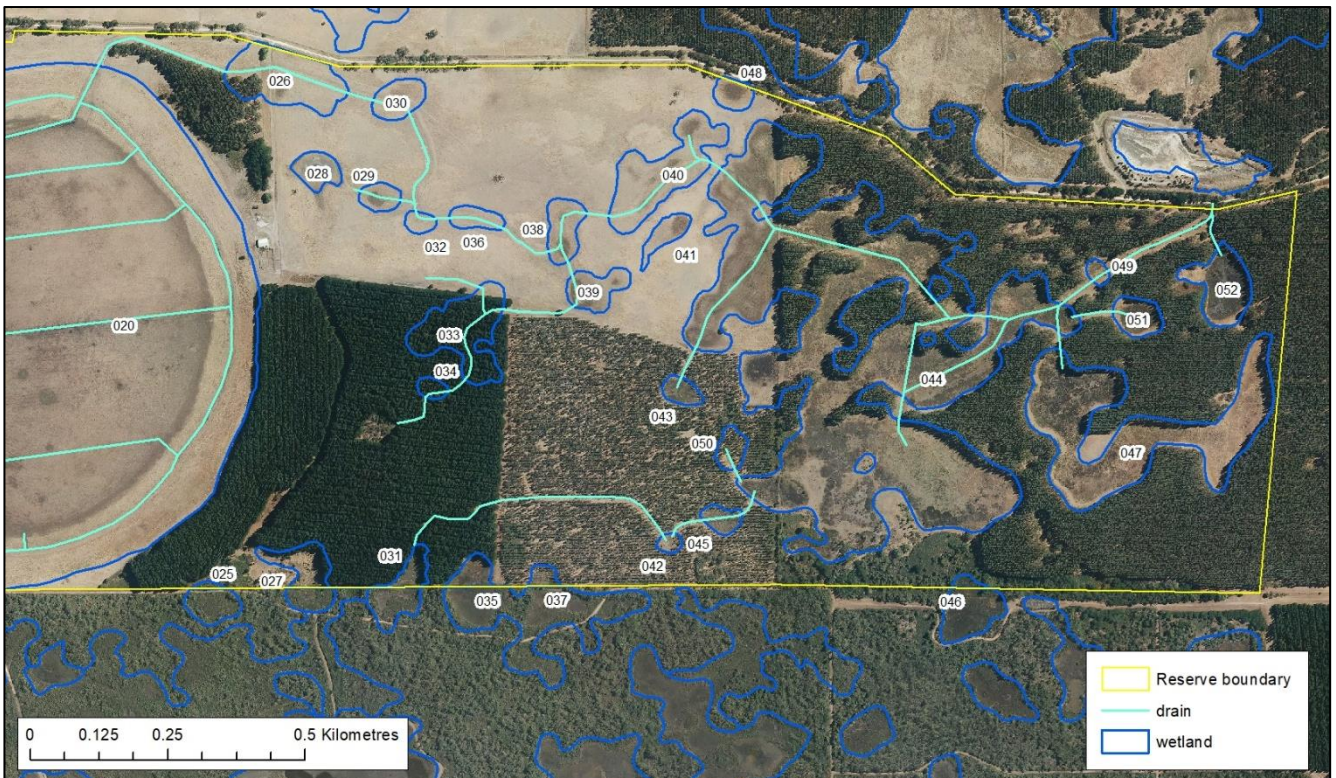


1951 pre-development aerial image of the property, showing vegetation mapping in the Restoration Plan.

Based on a (pre-development) aerial image from 1951 (see previous page) and the digital elevation model (DEM), 52 distinct wetland features occur on the Reserve (see below).



Historic (and intended future) wetland extent and contemporary drains, western half of property.



Historic (and intended future) wetland extent and contemporary drains, eastern half of property.

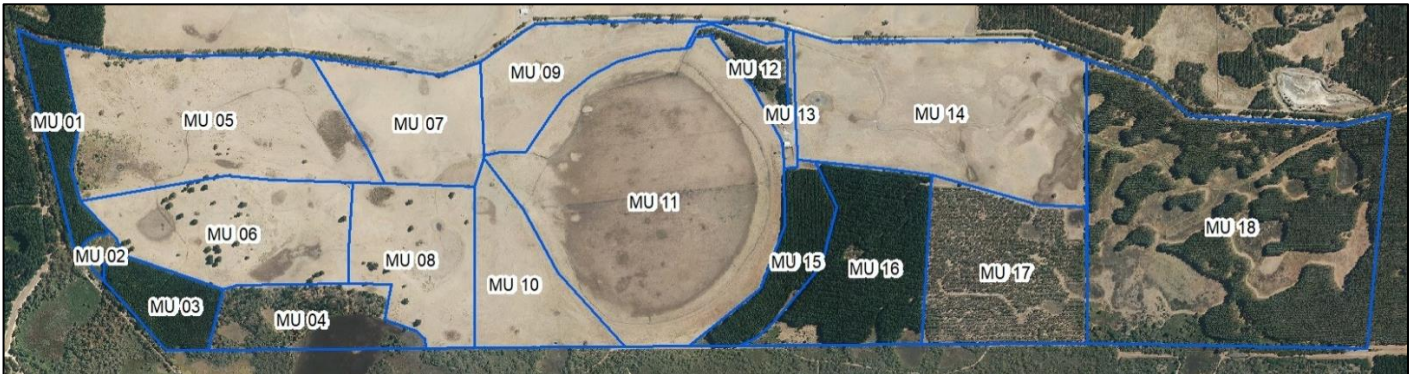
These wetlands were originally interspersed among areas of dense heathland and woodland – just as Marshes NFR still appears today. The total mapped wetland area is 151.3 ha, or 41% of the 369 ha Reserve, and the majority of wetlands are directly modified through artificial drainage to some degree. The total area of drained wetlands on the Reserve is 141.7 ha, or 38.4% of the total Reserve area. Most wetlands on the Reserve hold at least shallow surface water prior to spilling, even in their current, drained state.

3. Approach to restoration

Broadly, two approaches to restoration will be applied:

- hydrological restoration, i.e. backfilling drains to reinstate wetland sills. Passive, natural regeneration of wetland vegetation is anticipated to occur in areas subject to regular inundation.
- active revegetation in areas not subject to regular inundation.

Because of the scale of the task involved, we are determined to work through the restoration process in a careful and considered fashion, and some parts of the property will continue to operate and appear as a working farm for the foreseeable future. We have divided the property into 18 Management Units for purposes of restoration planning, and have identified short, medium and long-term actions for each.



Management Units across the Reserve.

4. Restoration results to far

Management Units immediately designated for conservation and restoration management in 2016 were MU 04 and MU11, as shown above. Results of restoration in the main “Mt Burr Swamp” (MU11) are shown below.



Change in the appearance in MU11 between 2015 (left) and 2016 (right), as a result of hydrological restoration.

Actions to protect and restore the main Mt Burr Swamp wetland feature (MU11) include:

- May 2016: pre-restoration wetland vegetation baseline monitoring survey.
- August 2016: installation of a temporary regulating structure of the artificial outlet drain. Mount Burr Swamp (wetland 020) has thereafter retained permanent surface water.
- Fish survey, which detected nationally vulnerable Little Galaxias.
- February 2017: Growling Grass Frog survey, with successful breeding in first year.
- Fencing the boundary of MU11.
- Active revegetation of 7.15 ha.



The second portion of the property where wetland restoration works have occurred is in Management Units 17 and 18 – areas of former blue-gum plantation – and involved realigning fences to accommodate restoring a significant wetland feature that includes part of MU 14, as shown below.



The hydrological remediation works occurred in autumn 2023, and were completed just in time for an exceptionally wet June, which immediately refilled the wetlands throughout this area, as shown below.

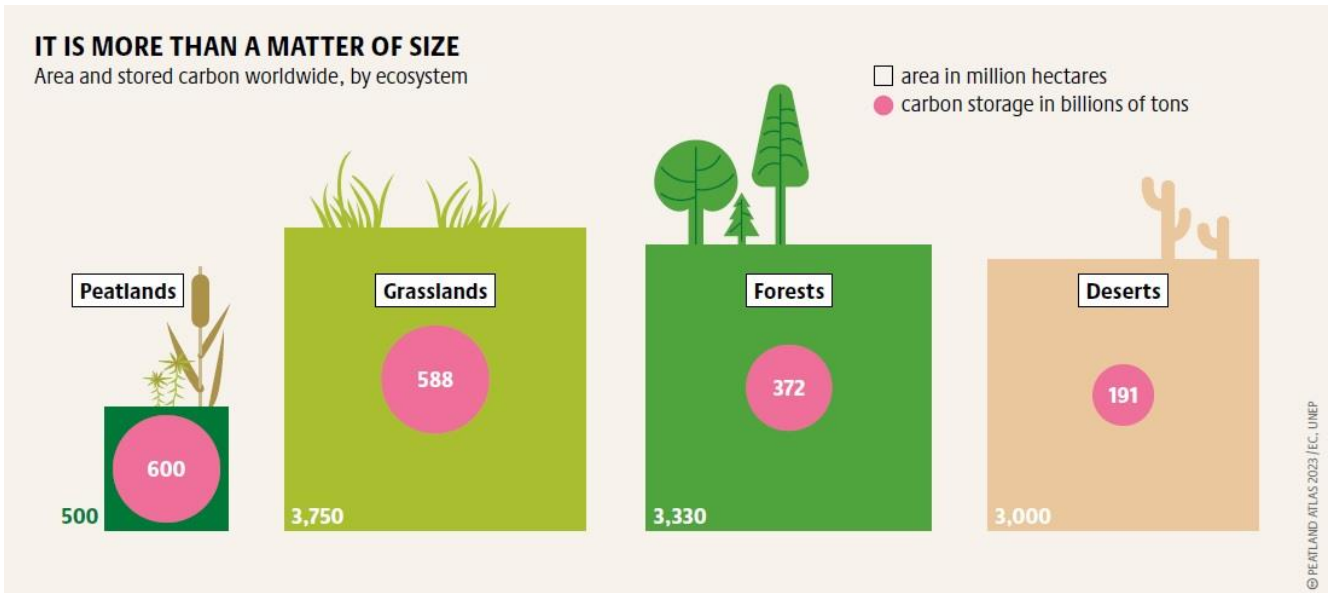


Over the years ahead, we expect a wide range of animal and plant species to bounce back in this newly restored area of habitat, joining the list of wetland species that have already been detected in the past few months, such as Growling Grass Frog, Brolga, Australasian Bittern, Royal Spoonbill and Latham's Snipe.

5. The importance of restoring peatlands

Although we have a relatively modest amount of peatland in Australia by global standards, due to the general dryness of our continent, they do occur around the temperate fringe and have been overlooked for far too long considering their vital role in the water and carbon cycle, and as hotspots for biodiversity. In short, despite their rarity, peatlands well and truly punch above their weight.

For example, peatlands cover only a small portion of the earth, but they store more carbon than any other terrestrial ecosystem, as shown in the graphic below. Yes, you read that right, a lot more carbon is stored in peatlands than in the world's forests, despite them only covering a fraction of the area!



Sustained by shallow groundwater, the wetlands at Mt Burr Swamp include significant areas of peat, meaning that the rehydration of these wetlands is critical for ensuring that this carbon remains in the ground, as well as protecting the groundwater resource and triggering a spontaneous biodiversity recovery response.

For more information on the future progress of the Mount Burr Swamp Restoration Project or our other work, please visit the NGT website: www.naturegleneleg.org.au, or contact us by emailing info@naturegleneleg.org.au.



thank our major partners and supporting organisations at Mt Burr Swamp since 2016:

