

2020 FAIRHALT CASE STUDY SUMMARY ECOLOGICAL REPORT

Prepared by Greg Hosking

Fairhalt is a 300ha mixed enterprise property producing potatoes and fat lambs, the property is managed by Garry Kadwell. Fairhalt is located to the South of Crookwell on top of the Great Dividing Range in New South Wales.

Fairhalt is split into 22 paddocks. Water supply on the property consists of an ephemeral creek, a number of dams and two large wetlands which Garry constructed to provide a healthy water supply and wildlife habitat. The property sits at an elevation on 1000m above sea level and the average annual rainfall is 813mm.

The two major soil types on Fairhalt consist of red basalt and grey loam, both soil types are used to produce potatoes and pasture for fat lambs. Remnant stands of vegetation consisting of numerous eucalypt and acacia species are found throughout Fairhalt. The land holder has protected and conserved the remnant vegetation on the property as well as planting habitat corridors to provide linkages between the stands. The wetlands on Fairhalt were constructed by the land holder to provide a clean water supply for the property as well as providing habitat for wildlife.

The ecological values¹ of the property were assessed based on the known history of management of the property from 1980, when Garry Kadwell had detailed knowledge of its management, and his assessment of potential effects of changes in management initiated since then. The ecological values assessed include resilience to disturbance and soil nutrients, hydrology and biology. Because there is little empirical data, the assessment is necessarily based on observations and a subjective judgement of likely effects of management. This report shows that significant improvement of condition was observed across nine of the ten criteria since 1980. These assumptions are based on the theory that implementing rotational grazing, planting and conserving native vegetation, multispecies cropping and maintaining high ground cover levels should have positive outcomes on the majority of the ten criteria.

The trend for eight of the ten criteria is therefore similar – gradual increase in the early years of management followed by a small increase then a significant increase in later years as the manager refined and improved their management practices. An example is provided below. For further details and commentary, please see the Supplementary Ecological Report.

¹ The ecological values assessed were: Resilience of landscape to natural disturbances – flood, drought and frost; Status of soil nutrients - including soil carbon; Status of soil hydrology - soil surface water infiltration; Status of soil biology; Status of soil physical properties – as a medium for plant growth; Status of plant reproductive potential; Status of tree and shrub structural diversity and health; Status of grass and herb structure - ground cover; Status of tree and shrub species richness and functional traits; and Status of grass and herb species richness and functional traits.

The remaining two criteria follow their own individual trajectories and reflect the management strategies undertaken by the land owner. For further details and commentary, please see the Supplementary Ecological Report.

