

Integrating perennial native and sub-tropical grasslands with multispecies pasture cropping and salt bush for production

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Abstract: We originally purchased two properties 3 km west of Gravesend and 50 km east of Moree. These properties were both rundown farming properties. Through the introduction of improved pasture species including tropical grasses and a range of legumes, multispecies pastures and forages, and combined with grazing management to maintain groundcover, we were able to improve the soils on both properties and better feed our livestock. Amarula Dorper Stud was established in 2000 and remains our main livestock enterprise, breeding Dorper and White Dorper rams for seedstock and commercial producers. A third property was purchased near Quambone in 2025, and we will incorporate our multispecies pastures and forages at this property. Saltbush provides us with good feed in droughts and the area planted will increase. Increasing pasture biodiversity and focusing on perennial native and tropical grass species, along with legumes and saltbush, has strengthened our drought resilience.

Key words: biodiversity, groundcover, soil health

Introduction

Our first property, “Glenavon”, was purchased in 2004 followed by the neighbour’s property in 2008. This has resulted in a total of 890 ha of grazing country at Gravesend, 50 km east of Moree on the North-West Slopes of NSW. “Sandhurst” was purchased in January 2025 and is situated 40 km west of Coonamble at Quambone. This property has 1700 ha of grazing country and is situated on the Central-West Plains, close to the Macquarie Marshes.

Climate

“Glenavon” has an average annual rainfall (AAR) of 585 mm (Table 1). In 2018 and 2019, the annual

rainfall was 386 mm and 131 mm, respectively. 2023 was a relatively dry year with 410 mm received while 2025 was closer to the AAR. By comparison, 2024 was a much wetter year, with a total of 752 mm received. This year-to-year variation is common and highlights the need for a drought resilient feedbase.

“Sandhurst” has an AAR of 451 mm (data not shown).

“Glenavon” is watered by an excellent source of bore water that is piped to all paddocks and delivered through a portable trough system. “Sandhurst” is also well watered by an excellent system comprised of two bores. There are multiple troughs and tanks in each paddock.

Table 1. Average annual rainfall (AAR) for Gravesend Road Bridge (05414) and monthly totals and yearly totals for the years 2017 to 2019 and the years 2023 to 2025.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
AAR	69.3	66.1	62.9	32	29.2	35.2	30.1	24.5	34	52.4	75.8	73.4	584.9
2017	91	40.5	131.5	52.5	44.5	44	7	11.5	2	147.5	79	76.5	727.5
2018	34.5	58.5	33	19	0	3.5	17	27	17	80.5	70.5	25.5	386
2019	13	8	32	0.5	16.5	14.5	11	0.5	0	18	6	11	131
2023	34.5	50	99.5	16	9	23.5	16.5	13	1	15.5	68	63.5	410
2024	71	75.5	42	123.5	39	36	60.5	37.5	63	57.5	84	62.5	752
2025	50.5	40	101.5	70.5	28.5	8	55	68	33.5	25.5	38.5	40.5	560

Soils and landscape

“Glenavon” has three soil types that include 60% black basalt, 30% red clays and 10% sandy loam, all situated within a slightly undulating landscape.

“Sandhurst” is plains country, so the soil consists of 70% arable heavy red and grey loams to 30% lighter red and some sandy portions.

Pastures and forages for livestock

At Gravesend, we have 350 ha of perennial tropical grasses including Premier digit (*Digitaria eriantha*), Bambatsi panic (*Panicum coloratum*), green panic (*Megathyrsus maximus*), Bisset and hatch creeping bluegrasses (*Bothriochloa insculpta*), and Floren bluegrass (*Dicanthium aristatum*). To improve the legume content of these tropical grass pastures, we have added clovers and medics including snail medic (*Medicago scutellata*), rose clover (*Trifolium hirtum*), a winter-dormant older variety of lucerne (*M. sativa* cv. Flairdale) and a soft-seeded vetch (*Vicia* sp.). Desmanthus (*Desmanthus* spp.), a perennial tropical legume, has also been established into our tropical grasses. In addition, we are seeing native glycines (*Glycine* spp.) flourish.

Native pasture remains our dominant grassland with varying nutritional quality, including Queensland bluegrass (*Dicanthium sericeum*), red grass (*Bothriochloa macra*), plains grass (*Austrostipa aristiglumis*), wallaby grass (*Rytidosperma* spp.), plus more. With our farming practices, we have seen a massive increase in native grasses, herbs, native legumes and other plants returning.

Saltbush (*Atriplex* spp.) has been established to increase drought tolerance, along with increased soil health, shade, shelter and water quality. The establishment of saltbush is a continuing process.

Multispecies pasture cropping is utilised to increase the diversity of plants for a more robust and healthier soil ecosystem. This includes grasses and broadleaves (fibrous and taproot), including legume species and others to diversify our fodder cropping system.

The pasture at “Sandhurst” is predominantly native grasses that have regenerated following the

cessation of farming in the 1990's. The native pasture includes Queensland bluegrass (*Dicanthium sericeum*), Mitchell grass (*Astrebla* spp.) and naturalised medic. There are areas of buffel grass (*Cenchrus ciliaris*) and serradella (*Ornithopus* spp.) has been introduced. There is some open timbered woodland with an excellent diversity of tree species including rosewood (*Alectryon* spp.), whitewood (*Atalaya hemiglaucula*), wilga (*Geijera parviflora*), belah (*Casuarina cristata*), gum and box trees (*Eucalyptus* spp.) We plan to include multispecies pasture cropping and saltbush plantings at “Sandhurst” to increase the soil health and improve the diversity of plants.

Livestock

Amarula Dorper Stud was established in 2000 and remains our main livestock enterprise, breeding Dorper and White Dorper rams for seedstock and commercial producers. The stud is based across “Glenavon” and “Sandhurst”, with planned growth in both ewe and ram numbers to meet increasing demand. The core stud currently includes 800 ewes at “Glenavon”, with numbers planned to increase to 1,000. “Sandhurst” is currently running 1,000 young ewes, with numbers expected to increase to 1,500 by the end of 2026. The enterprise also runs 750 rams at “Glenavon”, aged between 5 and 15 months.

Annual ram sales are currently around 700, with a target of 1,500 rams per year within the next three years.

The breeding program operates on three lambings every two years, with a target lambing rate of 200% per year.

“Glenavon” also runs 100 breeding cows and trades cattle as seasonal conditions allow. “Sandhurst” will carry an opportunistic cattle herd, depending on the season and available feed.

Drought strategies

During drought, we make early decisions and begin destocking gradually, with cattle sold first to protect the Dorper Stud. Additional strategies include early weaning, feed-lotting, and confined feeding in sacrifice paddocks. Saltbush also

provides a drought-tolerant in-paddock fodder reserve, and we plan to establish more.

Goals and business objectives

The goal is for our properties to be covered with biodiverse grasslands, whether native or introduced tropical species, supported by increased tree plantings and further saltbush establishment. This approach will improve groundcover, rainfall-use efficiency, biodiversity, soil carbon and overall soil health, while supporting better stewardship of natural resources and the production of healthy, nutritious pasture and livestock.

Demand for Dorper and White Dorper rams remains strong as shedding meat breeds become more popular across Australia. Our business objective is to continue scaling the enterprise and reach annual sales of up to 2,000 rams within the next five years.

Pathway to pasture production

We bought the property “Glenavon” as a rundown farming property and through our attention to improving the soil with strategic pasture and forage selection it has been turned into a productive property. This in turn has provided the capital to invest in our second property, “Sandhurst”.

The future

We are optimistic about the future. Through innovation, collaboration and responsible growth, we aim to continue building a productive and sustainable business that demonstrates resilient, low-impact livestock production, while continuing our journey into regenerating our soil, pastures and land. Our three boys, aged 21, 19 and 16, are all interested in agriculture, and we hope they will become part of the business and continue this work. In 10 years, we would like to step back, enjoy what we have built and no longer carry the full workload ourselves.

Conclusions

By increasing pasture biodiversity and focusing on perennial native and tropical grass species,

including legumes and saltbush, we have strengthened the drought resilience of “Glenavon”. We look forward to applying the same approach at “Sandhurst”. By improving our pastures, we are supporting a resilient livestock enterprise. The drought-hardy Dorper breed aligns with our regenerative agriculture principles and helps maintain financial stability through seasonal and climate variability. Ultimately, our aim is to leave our grasslands and natural resources in better condition, leaving a lasting legacy for future generations.

Acknowledgements

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