



managing native vegetation and biodiversity

improving farm profits through biodiversity

LandWater & Wool

Shaping the future



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research project:
MID-NORTH, SOUTH AUSTRALIA



Revealing the secrets for profitable, productive native pastures in the Mid-North

Native pastures - the secret's out

Traditionally, native pastures in the hill areas of the Mid-North of South Australia are continuously grazed at the same time each year (usually from the autumn break in May until harvest in December) to fit in with the cropping program. Over time, this has reduced the population of native perennial grasses and produced pastures dominated by undesirable annual grasses such as wild oats and barley grass.

Native grasses are perennial, and will persist for many years if grazed correctly. They are low-input, resistant to drought and frost-tolerant and many are highly palatable and vigorous growers. As they are perennial plants, they can use water that falls at any time of the year, not just through winter. Research has shown that native species are equally as good, both in quality and quantity, as most introduced grasses grown under the same conditions.

At Spalding, the hills are alive

For Mid-North woolgrower Rowan Cootes (pictured with Project investigator Millie Nicholls, from the Mid-North Grasslands Working Group), changes in grazing management on his family's 1200 ha farm are expected to have a range of benefits, including the opportunity to increase sustainable stocking rates.



Rowan Cootes (left) with Project investigator Millie Nicholls. Photo courtesy of Kylie Nicholls








Rowan's involvement in the project stems from concerns about the detrimental impact set stocking was having on the grazing land in the 250 ha of hills on his family's property. Increased numbers of weeds and large areas of capped soil were developing and there was poor pasture utilisation due to patch grazing by sheep.

As part of the *Land, Water & Wool* project, livestock are now being rotationally grazed according to pasture growth using newly subdivided paddocks, with emphasis on an adequate rest period to allow the perennial plants to recover from grazing.

RESEARCH PROJECT: MID-NORTH, SOUTH AUSTRALIA

Land, Water & Wool (LWW) is a joint investment between the wool industry's peak research and development body, Australian Wool Innovation Limited, and the nation's premier investor in natural resource management research; Land & Water Australia.

Native Vegetation and Biodiversity is one of eight *Land, Water & Wool* sub-programs. The others include:

-  Benchmarking and Evaluation
-  Sustainable Grazing on Saline Land (SGSL)
-  River management and water quality
-  Managing climate variability
-  Managing pastoral country
-  Future woolscapes
-  Sustainable Grazing Systems Harvest Year

What we want to know

Helping woolgrowers to conserve and improve native pasture biodiversity by rotational grazing and lift profits through increased production is the focus of this innovative research project.

The research specifically aims to evaluate the effect of grazing management (such as paddock size, stock density, rotational grazing and feed budgeting) of native pastures on:

- Sheep productivity: Wool production and quality, lambing rates and sheep growth rates.
- Farm financial returns: Gross margins and the relationship between profitability and native pasture health and biodiversity indicators.
- Ecosystem function of native pastures: Pasture productivity, species diversity and perenniality, water-use efficiency and soil biology.

The *Land, Water & Wool* grazing trial builds on an initial Mid-North Grasslands Working Group (MNGWG) project funded by the Natural Heritage Trust, where large paddocks were sub-divided and improvements made to stock watering systems. By using the same sites, the new project will generate one of the few long-term trials on grazing regimes in native pastures.

A range of plant and soil measurements are being taken including pasture growth rates, change in native and annual pasture species, species diversity, water-use efficiency, water infiltration rates and soil biological activity to provide valuable data to woolgrowers and researchers in relation to the impacts of the new grazing regime.

Key outcomes for woolgrowers:

- Increased long-term viability of wool growing enterprises in the Mid-North.
- Implementation of proactive management of native pastures and recognition of their valuable contribution to wool growing enterprises.
- Improved understanding of the role livestock can play in maintaining the health of native pastures and the importance of perennial pastures for the maintenance and production of healthy soils.
- Improved biodiversity, productivity and management of native pastures on farms.

- Increased woolgrower skills in grazing planning, feed budgeting, matching feed-on-offer and carrying capacity to animal needs and efficient native pasture utilisation.
- Best practice management guidelines for native pastures to enhance productivity and profitability while conserving biodiversity.

Further information contact:

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fast facts
on Mid-North SA

Native pastures grazed:

500,000 ha

Annual average rainfall:

250–500mm

Woolgrowers in region:

1450

Common native grass species in Mid-North:

Wallaby grass, Kangaroo grass, Spear grass, Brush wire grass, Windmill grass, Queensland blue grass, Red grass, Blackhead grass, and Lemon grass

The study area

The project area currently involves seven demonstration farms stretching from Robertstown in the Mid-North of SA up to Carrieton in the Upper North. An experimental site has also been established near Clare.

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