REVEGETATION

MANAGING NATIVE GRASSES AS PASTURE: A KOJONUP EXAMPLE

Jenny Dewing and Avril Baxter

UNTIL five years ago set stocking was the usual grazing practice on *LFW* members Lyn & David Mathwin's sheep property "Barrule" in the Shire of Kojonup. When they became interested in Holistic Management, they set part of their goal "to have a diverse balanced ecosystem that includes an easily managed agricultural system within an essentially native landscape, retaining as many native organisms (animals, birds, insects, plants) as possible and covered, balanced, biologically active productive soils".

Some of their first activities were to establish perennial pastures and rotationally graze. They also continued to fence the flats around their creeklines, areas with eucalypts and little else apart from a few native grasses and wild oats, Guildford grass and some barley grass. Two heavy summer grazes have allowed native grasses to re-establish in these fenced creeklines. The Mathwins are now considering a grazing regime that favors the native grasses on these sites acknowledging that if any other regeneration event happened, for example melaleucas after a wet winter, then they would exclude stock from the area until the melaleucas became established. Thereby achieving their goal of a more diverse ecosystem. Indeed Jams, *Acacia acuminata*, are already regenerating well at this site.

They see many advantages in native grasses; they retain a high amount of dry leaf material over summer and make a valuable contribution to increasing soil biological activity and water holding ability through their fibrous root mass.

Recently the Mathwins were awarded the Carmen Saunders memorial scholarship. Funds from this scholarship will enable them to plant a one-hectare trial plot with Weeping Grass, *Microlaena stipoides* and Kangaroo Grass, *Themeda triandus*. This trial will be used to assess the ability of these plants to be grazed and in the long term they hope to produce seed from the plot. Unfortunately they were unable to source the seed for this plot in WA and they have used eastern States' seed.

They also appreciate their grazing value. Two commonly reported native grass myths are that they have poor nutritional value as production plants and that they do not require maintenance. Dry matter protein of 10 – 20% for young actively growing leaves and 8 - 11% for dry or stressed leaves are reported as typical for many native perennial grasses. Also, whilst native perennial grasses may require fewer fertiliser inputs, they do need to be managed for production and for persistence from season to season.

Grasses are divided into two broad categories C3 and C4 based on different biochemical pathways in the process of photosynthesis. Put simply, for C4 plants, the net rate of photosynthesis (and consequently the net production of biomass) is far larger at high temperatures than for the more common C3 plants.

Most of our south western perennial grasses such as Spear grasses, Wallaby grasses and Poas are C3 grasses. These species are winter and spring growing. The heavy summer grazing regime adopted by the Mathwins has encouraged these plants to persist in their broad creekline flats.

Terry Macfarlane, Senior Research Scientist from the Department of Conservation and Land Management suggests that the management of these C3 and C4 grasses would need to be different. It is unlikely that the same area can be managed for both types of grasses to persist under a grazing regime.

Terry suggests that C4 grasses such as Mat Grass, *Hemarthria uncinata*, Dropseed grasses, *Sporobolus*, especially *Sporobolus virginicus* (also known as Marine Couch), and Salt Water Couch, *Paspalum vaginatum*, might be encouraged in low lying saline flats where good cover would provide environmental benefits such as filtering, using nutrients and soil stabilisation. These native grasses prefer wet places and are salt tolerant.

There has been little work done on the establishment of native grasses from seed in WA. The seed is not available in affordable quantities. To be regarded as properly native, the plants should originate in WA and preferably from close to where they are to be used. The use of grazing as a regeneration tool could be a key factor in encouraging the already present native grasses to be more dominant in our agricultural landscapes.

By identifying our native grasses and understanding their biology we may be able to encourage their persistence through timely grazing. Key points from current literature and farmer experience show that for native grasses to persist it is best to:

- fence land management units
- manage areas where there are small patches of native grasses, to increase the sward over time
- carry out intermittent grazing, commonly referred to as 'rotational grazing' – to remove mature plants over the dormant period to utilise old dry matter and other competing pasture plants

Spear grasses in the old road reserve on Barrule. Photo: Jenny Dewing

continued on page 15

LFW NEWS

QUANTA-CUTTING RESERVE OPEN DAY

An open day was held on 29th July at Quanta-Cutting, a 72 ha reserve in the Shire of Mukinbudin. Thirty people attended, including many keen students from Mukinbudin Community Christian School.

Geoff Burrow demonstrated fauna trapping survey techniques and during the excursion, scats from echidnas, kangaroos and foxes were found, plus a regurgitated pellet from a raptor (bird of prey). A variegated dtella (Gecko) *Gehyra variegata* was found under a granite rock. Fourteen bird species were recorded and the nest of the yellow-rumped thornbill located. Several burrows of spiders, scorpions, reptiles and possibly frogs were investigated. Three fungi species were noticed and three orchid species were flowering - spider, snail and blue fairy or bluebeard orchids.

A rich supply of "Dunnart dinners": cockroaches, crickets, spiders, centipedes and beetles are present in the Reserve and the removal of predators such as feral cats and foxes would increase the likelihood of Dunnarts returning to the Reserve.

Mick Davis from WWF explained all about the lichens and algae common on the granite rocks and Jan Gathe conducted a workshop on "How to create your own Herbarium" and the procedures of the WA Herbarium.

Thanks go to everyone who participated and organised the day, including John and Mary Squires for the delicious sausage sizzle.

Heather Adamson

BUSSELTON SHIRE'S BIODIVERSITY STRATEGY AND LAND FOR WILDLIFE FIELD DAY

About 30 people attended a field day last July at Anne-Marie Harris's property in Carbanup. The aims of the field day were to explain the Shire of Busselton's Biodiversity Strategy and *Land for Wildlife's* role in the strategy. Demonstrations were held on how to regenerate bushland, use of smoked water, monitoring techniques, weed control, and seed collection.

As part of the Busselton Biodiversity strategy, property owners with bushland in excess of 5 hectares can obtain either a 35% rebate for being *LFW* members or a 50% rebate if the property has a Nature Conservation Covenant. The strategy will be detailed in a future issue of *Western Wildlife*.

Cherie Kemp

FAUNA SURVEY AT GOOMALLING

The trap set-up can be seen on the right below the tape in the tree

In July, a week of fauna surveying and trapping at a large permanent water soak and Banksia woodland on Lindsay White's property north of Goomalling proved to be very interesting despite the time of year. Four frog species were identified including the humming frog, Kunapalari's frog, bleating froglet and sandplain froglet. Also identified were the white-tailed dunnart, common dwarf skink and 29 bird species including a pair of Pacific Herons. Black rats, field mice, black crickets and shield beetles were caught and a trapdoor spider has yet to be identified. A big 'thank you' to Lindsay, Heather and their two boys for their assistance and we look forward to returning in spring when the Banksias are in full flower.

Heather Adamson

continued from page 14

- remove stock during the seed-setting season
- allow an adequate rest period for plant recovery after grazing. Manage for the longest recovery necessary for the type of plant you want to regenerate
- apply small amounts of fertiliser for seed production.

References and further information.

There is a lot to learn about establishing and managing native grasses. If you trial a particular management practice make sure that you record what you do and how it worked. Others would like to hear about your experience.

The good news is that there is already a wide range of information available in publications, websites and networks. Here are some:

A. Baxter, May 2000 *Revegetation on Farms Information Kit, Native Grasses. Ag WA*

C. Waters, W. Whalley & C. Huxtible. Dec 2000 *Grassed up – Guidelines for Revegetating with Australian Native Grasses*, NSW Agriculture ISBN 0 7347 1256 1

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Lyn and David Mathwin run a sheep and cropping farm in Kojonup. They are practitioners of holistic farming and are carrying out an ongoing perennial pasture establishment program.