Land Management Advisory Service

NATIVE GRASS TRIAL (Upper Torrens Land Management Project)

Establishing Kangaroo Grass (*Themeda triandra*) for Hay Production

Tina and Phil Keatley

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1 PROPERTY DETAILS

Owners: Tina and Phil Keatley

Property Visit Date: 8th May 2016

Email: phil.tina1@bigpond.com

Approximate rainfall (average mm per annum): 700

Approximate regional stocking rate (DSE/ha): 6dse/ha if moderate pasture quality and medium inputs. 10dse/ha if good pasture quality and higher level inputs.

Local Government Area: Adelaide Hills Council

Natural Resources Area: Adelaide and Mt Lofty Ranges

1.1 Project description

This report contains a general evaluation of the pasture trial site and makes recommendations for preparation, sowing and establishment of pasture seed (*Themeda triandra*).

1.2 Project outcomes

1. Evaluate and refine a methodology for broad-acre establishment of kangaroo grass.

2. Determine the cost of establishing kangaroo grass for commercial hay production.

3. Provide improved knowledge and understanding of broad-acre native grass establishment and management for landholders in the area.

1.3 General land characteristics of the area (soil, saline sites, waterlogging)

Soils belong to the Mt Pleasant Land System.

Soils of the area are generally acidic sandy loam overlying a coarsely structured red clay forming in micaceous basement rock. All soils are susceptible to acidification. Some, mainly on lower slopes are imperfectly drained. Although most of the land is arable, surface soils are highly erodible, so maintenance of protective vegetative cover is an important management consideration.

There are occasional rocky outcrops, but overall they are not a major restriction on land use. Drainage depressions are characterized by well defined and sometimes eroded water courses, and sporadic saline seepage and waterlogged areas.

The soil at the trial site is a sandy loam over clay with a gentle slope. No water logged or saline sites were observed

1.4 Location and dimensions of the trial site

The trial site is located in the south east corner of the property (refer to Figure 1, page 6). Dimensions are 149m x 65m (0.97ha). The slope is ‘gentle’ with no limitations from rock, waterlogging or salinity.

This site is part of a grazing paddock and was last year (2015) sown to a crop of oats in preparation for sowing native grass seed in 2016 .

2 TRIAL SITE LOCATION

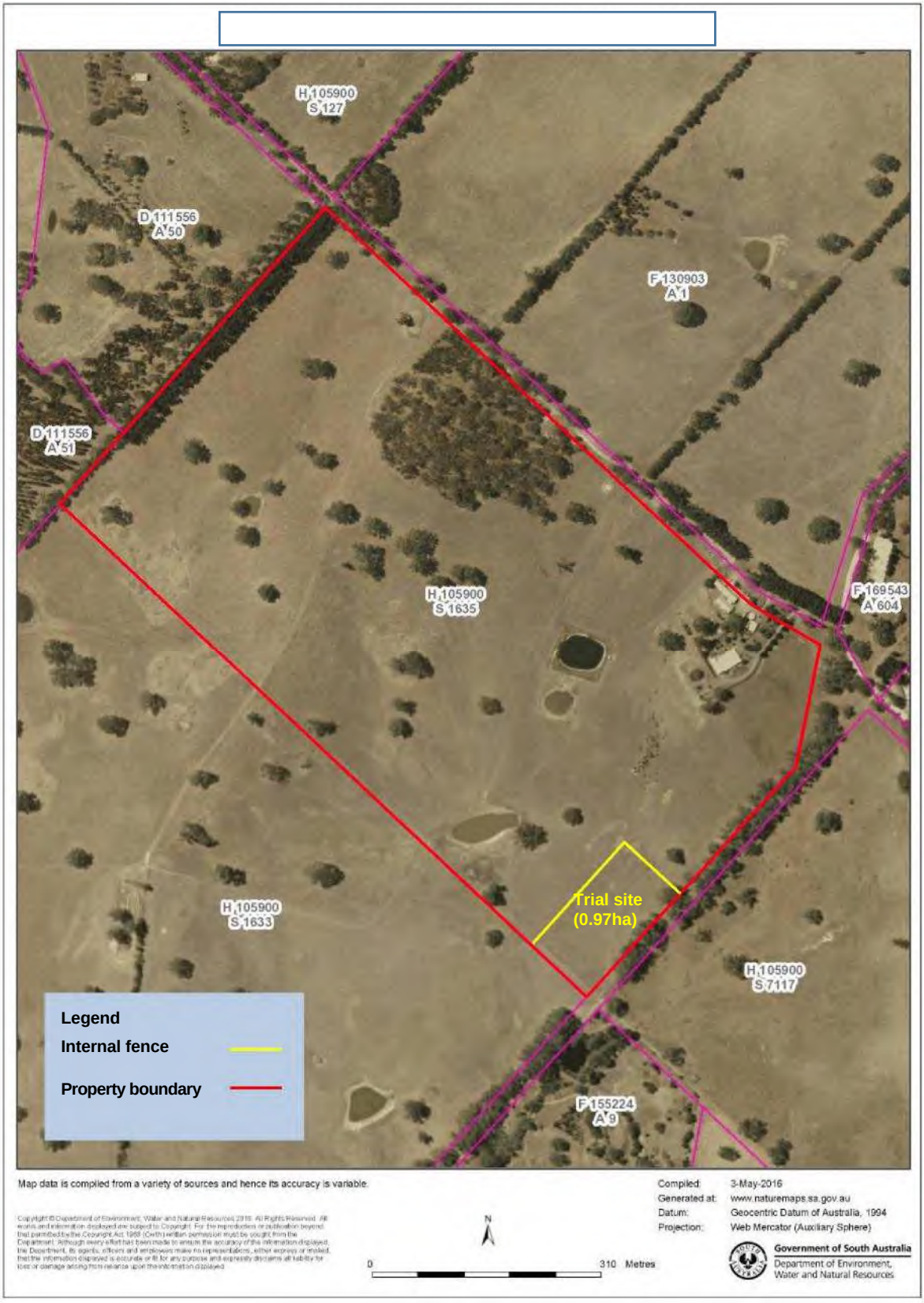

Figure 1. Site location

3 PADDOCK INSPECTION AND RECOMMENDATIONS

3.1 Trial site (0.97ha)

3.1.1. Observations

This site was planted to oats in 2015. Plants currently growing at the site include capeweed (*Arctotheca calendula*), subterranean clover (*Trifolium subterraneum*), isolated cocksfoot (*Dactylis glomerata*) plants and a few clammy goosefoot plants (*Chenopodium pumilio*).

Some volunteer oat plants (*Avena sativa*) were also observed.

3.1.2 Recommendations

As a result of a late start to the project, sowing in autumn 2016 is likely to result in C4 seed going into the ground in June. Since Kangaroo grass requires a soil temperature of at least 20 degrees centigrade to germinate, there is a high risk of poor establishment if sown at this time. Hence the recommendation is to sow seed in late winter/early spring provided soil moisture and suitable spring rains are forecast. Checking the Bureau of Meteorology for the long range spring forecast will be necessary. If the forecast is particularly unfavourable, consideration may need to be given to sowing in autumn 2017.

3.1.3 Soil testing

This site has already had 90kg of single superphosphate. Laboratory testing for soil microbes and nutrient levels is recommended. Contact Kim Thompson for sampling packs. Soil samplers can be borrowed from the Mt Pleasant Natural Resource Centre. Soil testing for nutrients can be done through Land Management Advisory Service. November 2016 is recommended for nutrient testing.

3.1.4 Soil preparation

To prepare the site for a late winter/early spring sowing Phil and Tina have planned to spray the site with glyphosate in autumn 2016, cultivate the soil and leave rough over winter which should have the site in a condition to harrow early to a fine tilth in preparation for seeding

Cultivation of soil is best done following the contours if leaving over winter to reduce the risk of erosion and loss of topsoil.

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To knock out all weeds, spray glyphosate at a rate of 2.0 litres per hectare. The addition of a non-ionic surfactant is recommended at a rate of 100mL of a 600g/L product (or equivalent) per 100L spray solution.

An alternative approach is to graze the site normally during winter and spray out In late August when soil warms and plants begin to actively grow. This approach should reduce the risk of erosion, but may delay soil preparation for seeding

Once weeds are controlled with glyphosate it is important to create a fine seedbed free of weeds or thatch. Provided conditions are appropriate, cultivation of the soil in late

August/early September followed by one or two runs with a harrow may be necessary. If the surface is uneven it may be necessary to smooth the surface by dragging a sleeper or chain over it prior to sowing. Ensure the soil surface is weed free and finely tilled.

3.1.5 Seeding

Ensure the site is well fenced off from livestock.

There is no need to apply any fertiliser at seeding. This can be applied once seedlings are well established.

The seeding rate is 30kg/ha.

Sowing depth is 10mm. Do not exceed 15mm.

Ensure seed is covered.

Time of seeding will depend upon soil preparation which will be dictated by weather conditions. Ideally the soil preparation should begin in mid-August with a view to sowing in late August/early September to ensure enough soil moisture for seed to germinate and establish before summer. Seed sown in October, or later, runs the risk of insufficient soil moisture to enable successful establishment of seedlings. It is important to check the long range forecast (www.bomadelaide).

Seeding is to be undertaken using a suitable seeder for native grass sowing. Availability is through the Upper Torrens Land Management Project. Contact Kim Thompson well before the time of sowing.

3.1.6 Management of site after germination

Leave plants to get established over the next 12 to 18 months .

Avoid grazing livestock until plants are well established. Crash grazing with sheep, once or twice, may be appropriate to encourage tillering. Check the condition of pasture before grazing. Do not graze lower than 5cms.

Apply fertiliser in autumn 2017 and/or spring 2017 depending on the recommendations from the soil test.

Monitor the site for broadleaf weeds and control with an appropriate selective broadleaf herbicide depending on the weeds present. Avoid using metsufuron methyl (Brushoff®) since damage to grasses is likely.

Monitor for pests and diseases and, if present, treat accordingly.

4 APPENDICES

4.1 Useful websites

UTLMP Native Grass Pastures – workshop videos, *https://www.youtube.com/playlist?list=PL4IsUu0-il4oYMYb08WNPwUwwl1mVFYyr*

Native grasses for sustainable agriculture, *Evergraze – Future Farm Industries CRC , MLA, AWI. www.evergraze.com.au*

Van den Berg, M. Australian native grasses for horse pastures – part 4, *www.horsesandpeople.com.au*

Native Seeds: Suppliers of native grass seed, www.nativeseeds.com.au

Seed World Australia: Suppliers of native grass seed, www.seedworld.com.au

Flora Victoria: Suppliers of native grass seed and hay, www.floravictoria.com.au

STIPA Group: Native Grasses Association Inc. www.stipa.com.au

Native Grass Resources Group, www.nativegrassresourcesgroup.com.au

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