

**WEED RESEARCH REPORT**

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# Problem Area....

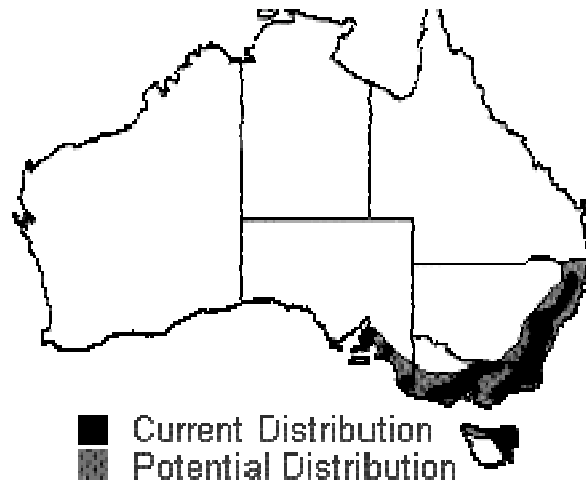
Located at "CLONOULTY", Boorowa, NSW



## Identification of Weed

The problem weed in this area is the Scotch Thistle (*Onopordum acanthium*). It is a very common weed and spreads rapidly over a small area (shown above).

The scotch thistle is a herb of the family *Asteraceae*, native of Europe, western and central Asia and Asia Minor. It is an introduced weed and the map below shows its distribution throughout Australia.



It is an erect biennial thistle, germinating in autumn, which grows to two metres tall with spiny leaves with minute barbed bristles, and a purple flower head appearing in late winter to early summer. The weed may remain as a rosette over the first summer. The vigorous seeds produced from the flower head spread easily and may remain dormant in the soil for many years. Plants may form dense stands that smother other pasture species and decrease pasture production.



This is the scotch thistle at its early stages.



Scotch thistle at flowering stage

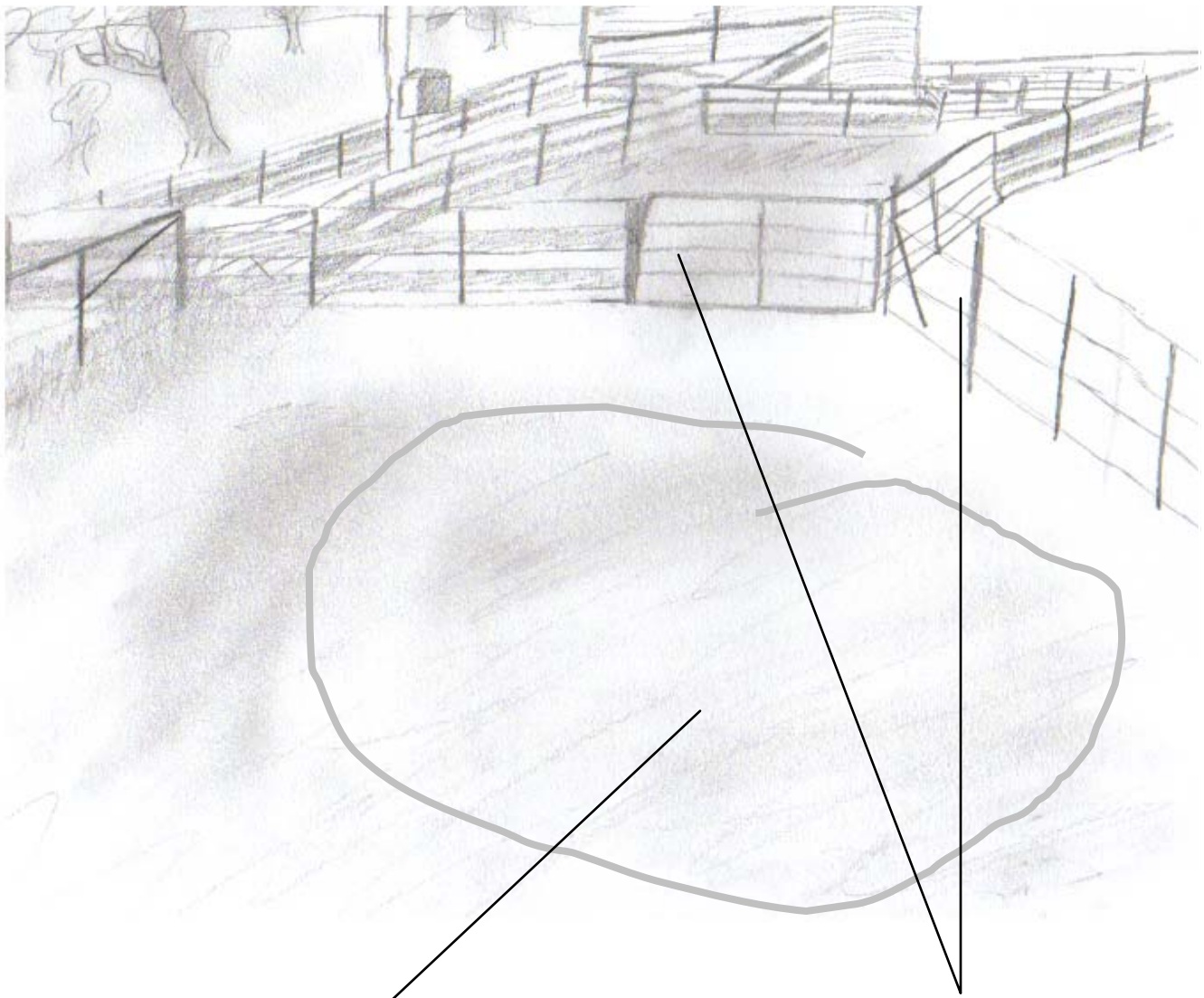


This picture shows a dead scotch thistle (above) and a scotch thistle in its early stages (below)



These two pictures show the remnants of the previous seasons infestation.

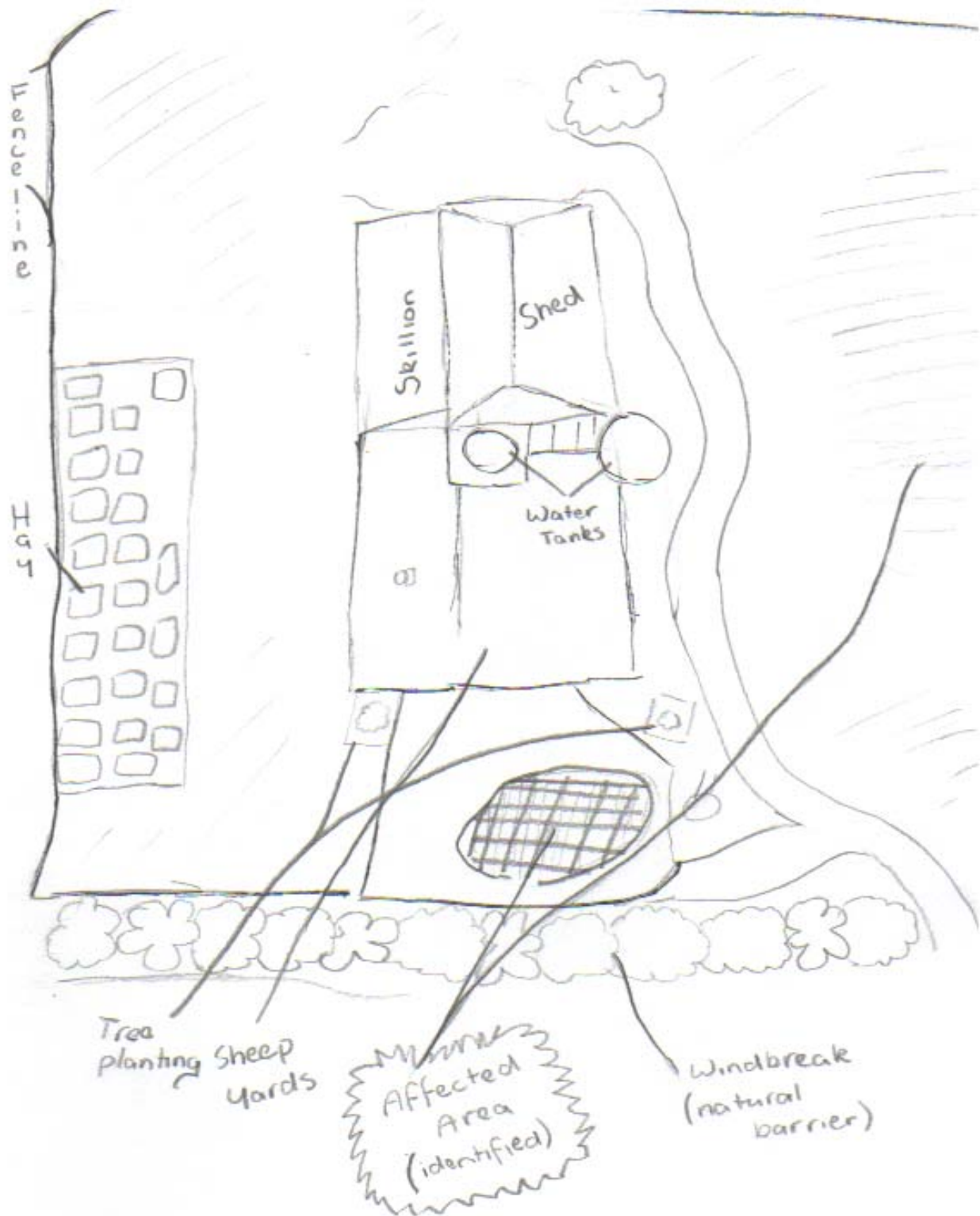
**Pictorial Close-up Sketch of Site:**



Main area of weeds.

Fences

**Diagrammatic Sketch Showing Significant Landmarks and Boundaries:**



### **Problems associated with Scotch Thistle.**

The Scotch thistle (*Onopordum acanthium*) is a noxious weed that is most commonly found in different types of pastures and particularly in fertile soils.

This weed is a major problem due to the large, sharp spines that can damage the hides, mouths and eyes of sheep and causes irritation to the animal leading to other animal health problems. The presence of thistles in the wool makes handling of the sheep by shearers and the farmer painful and difficult. They can also cause vegetable fault in wool thus devaluing the fleece.

These thistles grow in dense stands thus can also make a barrier for livestock movement preventing them from grazing and accessing water.

The other major problem about this weed is that it can spread very rapidly over a short time and therefore competes strongly with productive pasture used for livestock grazing.

### **Management strategies in the eradication of Scotch Thistle**

This weed can be managed by reducing seed setting and germination while encouraging a strong competitive pasture. You can reduce seeding by using different herbicides, grazing management and physical control methods such as making silage or slashing or by biological control such as insects.

- i.) **Herbicides:** Chemicals can be used at various times of the plants growth stages. All of which have varying results. With the use of herbicides the weed must be growing well and not be suffering any stress such as drought, water logging or heat. One of the most popular methods is incorporating chemical and grazing management together.
- ii.) **Grazing management:** To reduce germination you can maintain a vigorous and competitive pasture. Pasture improvement tactics such as light rotational grazing, fertilizer and deferred grazing are required to achieve weed replacement though severely degraded pastures may need to be re-sown. Also avoid overgrazing, this encourages germination of the weed.
- iii.) **Physical Control:** The thistles can be slashed, chipped or cut for silage thus preventing development of the seed. Cultivation of the infested area will also reduce population. This can be incorporated with herbicide control. This control can only be used at the end of the pasture phase when the area is to be cropped or re-sown to pasture.
- iv.) **Biological Control:** A biological control program was started in 1987 by the CSIRO. Three species of weevil are well established and are starting to make their presence felt now. One attacks the flower head, one attacks the stem and one attacks the rosettes. A leaf-boring moth *Eublemma respersa*, released in 1998, will also attack the rosettes, and the two rosette agents should have a major impact on the amount of plants that reach maturity and the number of seeds they are able to produce.

### **Management of the area identified**

The area studied is a grazing paddock in which the sheep yards and shearing shed are situated. Sheep graze here before and after attending sheep husbandry activities such as shearing, crutching, drenching, and lamb marking and it also serves as the grazing paddock for the rams.

The studied area is infested with scotch thistle within a strong pasture environment so the use of chemical and grazing management together is the most suited strategy. This technique is known as spray-grazing. Due to the buildings, it is not suitable for cultivation and plantation of a cereal crop, which would usually be the most effective option to eradicate this weed. Biological control was attempted previously but was unsuccessful perhaps due to the extent of the problem.

#### **Spray-grazing management**

Sub-lethal application rates of the herbicide MCPA or 2,4-D amine are effective in controlling scotch thistle if applied at the correct growth stage and used in combination with grazing livestock.

Apply spray to weeds when actively growing. Best results are achieved 6-8 weeks after the autumn break. Withhold stock for seven to ten days then graze heavily, preferably with sheep at eight-ten times the normal stocking pressure until weeds have been satisfactorily reduced but before survival of desirable pasture species is threatened.

#### **Method:**

- i.) Remove stock for 5 days before spraying to allow weeds to “freshen up”
- ii.) Mix chemical according to manufacturers or agronomists recommendations. Higher rates of MCPA or 2,4 D amine are often prescribed. This is combined with water and sometimes a wetting agent to enhance chemical uptake by the plant. MCPA is preferred in clover dominant pastures as it is not as harmful to the clover.
- iii.) Apply using a spray unit. This may be a ground rig over the main paddock, a 4wd motor bike rig or by a hand sprayer in areas difficult to access.
- iv.) After 7-10 days re-introduce sheep at a high stocking rate to eat out the weedy area. Sheep find the weeds more palatable after spraying and therefore tend to eat the heart out of the rosettes, ultimately killing the plant.
- v.) Recheck along fence lines for any weeds missed during spraying and chip out using a spade or hoe.

This management strategy has allowed use of the paddock for grazing purposes and the use of selective herbicides that do not kill the grasses has minimised the harm to the environment. However, there may be some damage to broadleaf plants in the pasture such as clover, and losses of this plant can occur. Due to the history of the area there will be dormant seed in the ground so this method will have to be used for some years to slowly reduce the population of the scotch thistle.

### **Bibliography:**

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T.L. Woodburn and D.T. Briese, CSIRO Division of Entomology, Co-operative Research Centre for Weed Management Systems, GPO Box 1700, Canberra, ACT 2601, Australia.
- <http://www.weeds.org.au/cgi-bin/weedident.cgi?tpl=plant.tpl&ibra=all&card=H21>
- Interview with Tom Corcoran: proprietor, Boorowa Spraying Services; farmer and owner of “Clonoulty”, Boorowa.