Natural Resources and Environment
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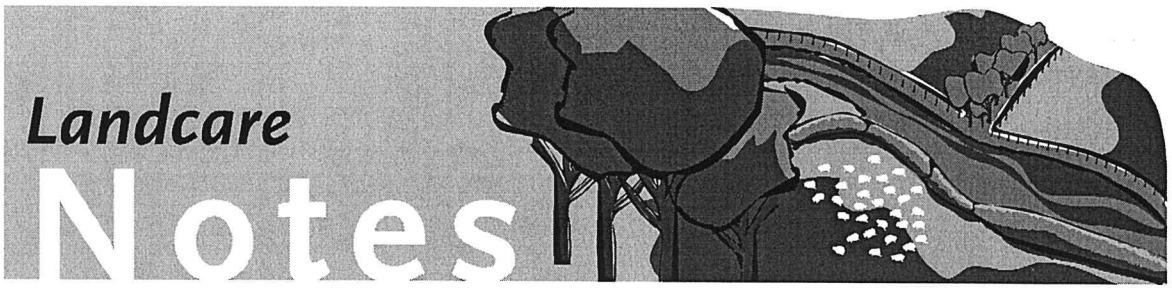
Landcare Notes



Weed management: early identification of plants

John Strachan (Kyneton)

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This Landcare Note stresses the need to identify weeds early in their life to increase the options for control.

Early control of most weeds is the best control. But how do we identify the weeds when they are small, when many of them look so similar?.

Example:
Paterson's curse is easy to identify in flower, but by then it is usually too late to control. How can I identify it when it is easy to control?

To answer this question we need to look at the key factors in identifying plants. These are:

1. Where and when the plant grows.
2. What group the plant belongs to, ie.: grasses and other monocots compared to broadleaf plants.
3. Juvenile plant appearance.
4. Mature plant appearance.

Where and when the plant is growing

Where the weed grows and when it first appears provide helpful clues. Weeds such as blackberries and sweet briar are usually found on fence lines as fruit eating birds often spread the seed. Weeds around stock feeding sites may have arrived in grain or hay - Paterson's curse is an example of this.

The climate is also an important factor in why the weed is where it is. Most weeds in Australia have come from places with similar climatic conditions. This sort of information along with soil, topographic and land use information can be used to predict a weed's potential to spread. If it is possible to determine how the plant came to the site it can aid in its identification.

What time of year the plant first appears is useful to determine some plants, eg. most thistles and some annuals, which generally appear after the first autumn, rain.

Paterson's curse can be spread by farm animals and by the feeding out of grain. It grows very well in southern Australia and appears after the first autumn rains.

What group does the plant belong to?

A plant can be classified into either of two groups, ie. grass or broadleaf.

Grasses

These are part of the so-called monocot plants which have a single leaf (called the cotyledon) emerging from the seed. The cotyledon becomes long with parallel veins eg. bent grass and fog grass.

Broadleaf plants

These are also called dicot plants as they have two leaves emerging from the seed. The cotyledons are usually oval to round, with the veins running off on an angle eg. clover, sorrel, thistles.

Paterson's curse, being a broadleaf weed, has two first emerging leaves.

Juvenile plant appearance

Leaf shape:

Leaves can vary from round or oval to long and thin. Some have no pattern around the outside, some are toothed like a saw.

Leaf colour:

Leaf colour can vary between light and dark green and sometimes be variegated or other colours such as red, yellow and blue-grey. Some leaf surfaces are smooth and some may be shiny.

Leaf arrangement:

Some leaves may connect directly onto the main stem, while some are on branches. Leaf arrangement on the stem is also important, ie. some are opposite and some are alternate.

Stem:

Stems may be single, multiple or branched.

Roots:

May vary from a large taproot to small fibrous roots.

Paterson's curse as a young plant is rosette in form (a cluster of leaves radiating from a central crown, usually at ground level). The leaves are large, stemless, round or oval, mid-green in colour, with smooth margins and small hairs on both sides. The rosette can be small or up to the size of a dinner plate. There is a large taproot with small, fibrous roots.

Mature plant appearance

There are four major differences between a juvenile plant and a mature plant, and some of these apply to dicots and monocots. These are:

Change in the stems

Some plants change from ground covers to erect plants. These are mainly the broadleaf plants (eg. thistles, Paterson's curse).

Change in the leaves

Some leaves change from big round ones to oval/linear leaves (eg. some gum trees).

Changes in roots

Sometimes the roots will produce tubers or bulbs but, in most cases, the juvenile roots just get bigger.

Fruit, seeds and flowers

No juvenile plants have flowers, fruits or seeds. The shape, colour and size of all of these parts are very important in plant identification and sometimes can be the one thing that enable a plant to be identified. These can appear on some small plants as early as a few weeks after germination. Their position and arrangement on the plant is also worth noting, eg. at the ends of branches or only on the main stem.

Paterson's curse changes from a flat weed as a juvenile to an erect plant when mature. The leaves become longer and thinner and the root becomes a larger taproot. After several months growth, purple trumpet-like flowers that produce abundant seed are produced.

Aids to identification

If you are unable to tell whether the plant is a weed or a useful one, collect a sample and seek help with identification. If the suspect plant is not on your own land, seek permission from the land owner.

Help with identification may be obtained from:

- Local nursery
- National Herbarium (Birdwood Avenue, South Yarra)
- A Catchment Management Officer at your local office of the Department of Natural Resources and Environment.

Identification of a plant is far easier if a flower, seed head or fruiting body and root is available.

If sampling small plants, dig up the whole plant roots and all. Plants should be sealed in a plastic bag with some wet paper to prevent them drying out, or submitted as dried specimens that have been pressed flat using a plant press or by drying between sheets of newspaper compressed under a heavy object.

A good plant identification book in combination with the approach provided above (along with a good deal of patience) should result in reliable identification.

The following section lists useful texts for plant identification. These are available from libraries and many bookshops.

The NRE Information Centre at 8 Nicholson St. (PO Box 500) East Melbourne, Vic. 3002, Phone 03 9637 8325 keeps many useful weed books in stock and has a mail order service.

References to help identify weeds

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- Walsh, N. & Entwisle, T (Eds.) (1999) *Flora of Victoria Volume 4. Dicotyledons, Cornaceae to Asteraceae*. Melbourne, Inkata Press.
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- Wrigley, J. (1990) *Australian Native Plants.* Sydney :Angus & Robertson

Further information

Many Landcare Notes on particular weed species are available from NRE. General information on weeds can be found in the following Landcare Notes :

- PP0001: What is a weed?
- PP0002: How to manage weeds
- PP0084: How weeds spread
- PP0100: Weed management: evaluating the problem

For additional information on weed control contact your local agronomist, Catchment Management Officer or chemical reseller.

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