

Acknowledgements

Text and diagrams: Jane Bozon and James Matters.
With help from Nick Graesser, Marion Van Gameren and staff of the National Herbarium of Victoria; and special thanks to Pat Davies and Leah Randi for typing the manuscript.

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Spotting Soil Salting

A Victorian field guide to
salt indicator plants

Research
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Land Protection Division

February 1989

Funded under Victoria's Salinity
Management Program.

Spotting Soil Salting

Salt tolerant plants take over from crops and pastures as soil becomes more salt affected. Learning to recognise these plants is important. The earlier a salt problem is recognised, the sooner something can be done about it.

This field guide describes 28 of Victoria's most common salt tolerant plants. Looking at the distribution maps, photographs and descriptions, should help you recognise plants that are likely to be found on salt affected ground in your district. While some plants will be easily recognised, others may need careful reading of the General Description, and Further Details or even reference to the drawings and definitions at the back of the guide.

But don't let this put you off, identifying plants is like anything else: it gets easier with practise.

Although some plants shown in the guide are also found in areas that are not salt-affected, it is usual to find more of them growing in saltier soils because of the absence of salt sensitive plants.

Yellow, orange and red colour coding is used throughout the book to indicate the degree of salt tolerance of the plants (low to high salt tolerance).

By relating observations of plants in the field with the measured levels of salt in the soils on which these plants are found, three classes of salting hazard can be identified.

Class 1. (yellow)

Areas of low level salting. (EC 1:5 less than 600 micro Siemens cm.)

The photograph shows typical affects of a low level of soil salt on pasture. Experience is often needed to spot salting at this early stage.

Tell-tale signs include:

- ▲ isolated or scattered areas of "patchy" growth in a paddock. These may occur on seeps along a break of a slope.
- ▲ reduced vigour or stunting in improved pasture or crop species.
- ▲ productive annual and perennial species, including clovers, thin and die out. They are replaced by other plants with more salt tolerance.
- ▲ sea barley grass is often abundant.
- ▲ strawberry clover may be present.
- ▲ no salt crystals or bare patches can be seen.

Class 1 salting is often an early warning of a potentially bigger problem.

Some commonly occurring species which tolerate low level salting are listed in the guide.



Class 2. (orange)

Areas of moderate salting. (EC 1:5 600–1400 micro Siemens cm.)

Note the scattered bare patches which are visibly salt affected.

Common signs include:

- ▲ some Class 1 species disappear and are replaced by others with higher salt tolerance.
- ▲ salt stains are visible when soil surface is dry.
- ▲ small, bare areas up to 1 square metre are present.
- ▲ clover is absent.
- ▲ affected areas may occur as “Scalds” exposed by heavy grazing, on flats, or as seeps at breaks of slope.
- ▲ affected areas may worsen after high seasonal rainfall.
- ▲ some species show marked changes in leaf colour and shape due to salt stress.

Class 2 salting usually indicates rising groundwater levels and is relatively easy to recognize.

Some common species which tolerate Class 2 salting are listed in this guide.



Class 3. (red)

Severely affected area (EC 1:5 1400–3500+ micro Siemens cm.)

Pictured are typical severely affected areas.

- ▲ only highly salt tolerant plants are present.
- ▲ large areas of bare ground can be seen.
- ▲ often only 2 or 3 species will dominate such an area.
- ▲ trees will be dead or dying.
- ▲ species present are typical of salt pans and salt marshes.

Some common Class 3 plants are listed in the guide.

It is important to become familiar with these characteristics of soil salting in order to become skilled at identifying areas at risk. If you get really stuck, seek expert advice from regional officers of the Department of Conservation, Forests and Lands or the Department of Agriculture and Rural Affairs.



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