Handling salt land

S. T. Smith
MANy bare saline areas can be converted into useful grazing land. Careful land management is the key to salt land reclamation and very few saline areas will not respond to some form of management.

In reclamation the main aim is to provide a plant cover. This is done by—

(1) The control of grazing;
(2) soil cultivation; and
(3) by introducing salt tolerant plants.

CONTROL OF GRAZING

Wherever possible saline areas should be fenced off in such a way that grazing can be controlled at will. The control of grazing is the most important single factor in the reclamation of all salt-affected land. According to the severity of encroachment, the control necessary will vary from a slight reduction in grazing to the total elimination of grazing for several years.

ROUGHEN THE SURFACE

The surface of the soil should be maintained in a roughened state. This is important for two reasons. Firstly, the roughened surface traps blowing seeds which would otherwise be swept off the bare salt patches. Secondly, the cultivation causes water from rainfall to collect in small cultivation furrows, forcing it to
Fig. 2.—Overgrazing on the left has eaten out the cover and caused the surface to become bare and salty.

enter and leach salt from the surface. In so doing, localised areas from which the salt has been washed, are formed. These are favourable to germination.

Deep cultivation is not necessary. A rough surface is the essential aim; it should be as permanent as possible. The method of obtaining this is of lesser importance.

INTRODUCE SALT-TOLERANT PLANTS

In salt-affected areas, salt accumulates in the soil particularly at the surface. The salts concentrate the soil solution and make it difficult for ordinary plants to obtain water for their growth. Salt-tolerant plants, however, have special ability to extract water from saline soils and will grow where other plants die. Furthermore, as the main concentration of salt is in the surface layers it is often difficult to get seeds to germinate in saline soils. Annual plants meet this difficulty every year and unless a very salt-tolerant plant is used, or the season is particularly favourable, germination is frequently delayed or prevented. Perennial plants do not require to germinate every year, and once established, are not quite so dependent upon favourable seasons. For this reason perennial plants are more suited to salt land. Of the salt-tolerant perennials at present available, trailing saltbush and bluebush show the most promise.

Among the annuals we have very salt-tolerant native plants such as spargularia, barley grass and curly ryegrass, all of which colonise rapidly on saline soil under protection from grazing. Annuals of moderate salt tolerance for which seed may be readily purchased include Wimmera rye grass, barley, oats and cereal rye.

WHAT TO DO WITH YOUR SALT LAND

Within the wheatbelt salt land may be affected to varying degrees and the method of handling it is dependent upon the severity of encroachment. Here are some examples.

Slightly salt-affected soils with perhaps 30 per cent. bare soil in small patches should be cultivated and sown with a cereal and Wimmera ryegrass. Grazing should be limited, and subsequent renovation of the soil with an implement such as a scarifier should be undertaken every year or two. This renovation stimulates the Wimmera ryegrass and aids colonisation of the bare patches. Cultivation should aim at stimulating existing plants without killing them; in some cases this may necessitate working before seeds have germinated.

On severely salt-affected areas, but not completely bare, the grazing should be eliminated for two to three years. During this time the surface should be kept
in a roughened condition so that it can become colonised by the naturally occurring salt-tolerant plants such as spergularia, curly ryegrass, barley grass, salt and blue bushes. Any covering of straw and litter on bare areas will assist reclamation.

On almost totally bare, very severely salt-affected soils, wind erosion is apt to become severe. Grazing animals should be eliminated until the area has been stabilised. The area should be furrowed in the spring on a checkerboard pattern with an implement such as a single-furrow plough, a grader-ditcher, or old mouldboard using one arm. Furrows should be no more than ten yards apart. This will reduce the wind velocity at the ground surface. The furrows will begin to colonise with salt-tolerant seeds. If reclamation is promising, additional working can later be given.

Areas wet with seepage water during the summer months suit the very salt-tolerant summer-growing grass *Paspalum vaginatum*. Under these conditions winter growing plants such as Wimmera ryegrass, mangels, spergularia and early Wimmera ryegrass will also do well.

Bare salt land is an eyesore and a liability. With careful management it may be converted into useful grazing land. This conversion may be achieved by fencing to control grazing, surface roughening and seeding with salt tolerant plants. Previously bare erodable areas can be converted into covered areas carrying useful fodder.
Instant, constant BUSHFIRE PROTECTION

Choose the REX for your needs
- 4 GP: 4,500 g.p.h.
- 4MP: 4,800
- 6MP: 6,000
- 10MP: 10,000
- 15MP: 18,000
- 25MP: 24,000
- 35MP: 35,000
- 45MP: 45,000

No starting worries, no stalling with REX SELF PRIMING PUMPS

Simplicity means reliability ... and Rex pumps have only six rugged parts; the world's simplest, most efficient design. In these six parts Rex includes every desirable feature ... self priming action with an exclusive adjustable air peeler for lifelong new performance ... Big water passages to pass any solid that gets thru the strainer ... Easy accessibility for faster maintenance ... a mechanical seal in place of the usual leaking stuffing box. There's a Rex pump with the ideal performance for you. Post the coupon for full details.

Please send me full details of REX PUMP Model...
NAME...
ADDRESS...

Wesfarmers Tutt Bryant Pty. Ltd.
Railway Ave., Bassendean, Phone UX1616

Please mention the "Journal of Agriculture, W.A.,” when writing to advertisers