

DISTRIBUTION AND CONTROL OF NOOGOORA BURR
IN WESTERN NEW SOUTH WALES

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Summary. Noogoora burr (*Xanthium pungens*) infestation is a serious problem causing significant economic loss in western New South Wales. This loss is largely the result of lowered wool values, reduced carrying capacity, increased cost of livestock management and cost of control. The ephemeral creek areas are the main sites of infestation. Periodic wet summers have caused extensive increase in infestation. Although there are still many potential sites free of infestation, only containment of relatively small infestations is economically possible at present.

INTRODUCTION

Noogoora burr occurs in both eastern and western states of Australia. However, it is in the summer dominant rainfall areas of north-western New South Wales and western Queensland where it is a major weed (Wapshere 1974). Californian burr (*Xanthium orientale*) is often mistaken at first appearance for Noogoora burr. In western New South Wales it appears that Californian burr is confined to the Murray River system and adjacent areas with Noogoora burr comprising infestations at most other sites. There appears to be no practical difference between Noogoora burr and Californian burr with respect to the problems caused or the control methods used.

IMPORTANCE AS A WEED

Noogoora burr causes serious economic loss in western New South Wales as a result of the following:

1. Lowered wool values. Between 1953 and 1965 the prices paid for heavily-infested wool were 24 to 43% of those paid for wool free of vegetable fault (Wapshere 1974). The Australian Wool Corporation makes a deduction of 2 to 15¢ kg⁻¹ from the clean wool price for Noogoora burr fault (i.e. 0.5 to 5.0% deduction on 1981 prices).
2. Reduced carrying capacity of infested areas.
3. Increased animal handling costs.
4. Poisoning and discomfort to livestock.
5. Cost of control.
6. Embargo on sale of burr infested sheep and cattle from New South Wales to South Australia and Western Australia.

DISTRIBUTION OF INFESTATIONS

West Darling Region. Long-term residents in this area observed significant infestation in areas north-east of Broken Hill in 1939/40. These infestations probably come from sheep on agistment from Queensland. They spread widely in the wet summers of 1949/50 and 1962/63. However, it was the very wet seasons extending over 1973/75 which caused major infestations to occur over a wide area. Up to 1973, landholders had reasonable control of the infestations.

In 1976, a mail survey was conducted with landholders of the West Darling region. Fifty-eight landholders replied, representing half of the properties which had or could have had Noogoora burr infestations. The results are presented in Table 1.

Table 1. Degree of infestation of Noogoora burr in relation to landform in the West Darling region.

Landform	Number of properties in each category				
	Degree of infestation				
	Severe	Heavy	Moderate	Light	Nil
Upper reaches of creek	5	2	3	5	1
Middle reaches of creek	3	2	3	0	0
Lower reaches of creek	3	4	3	4	0
Terminal flood-outs	6	0	1	5	1
Sandplain	0	0	1	0	3
Totals	17	8	11	15	7

Noogoora burr infestations are mainly associated with flood-out areas of ephemeral creeks and watercourses and terminal flood-outs. (Table 1). The worst infestations are on terminal flood-outs. The authors have also observed Noogoora burr in small clumps around tanks and bores - these sites could result in wide dispersal of seed by stock.

All western rivers and their adjacent lower floodplain areas are infested or have potential for infestation.

Murray River. In February 1977, a survey was carried out along the Murray River from near its junction with the Murrumbidgee River to the South Australian border. The survey was carried out by field workers who did not distinguish between Noogoora burr and Californian burr. It is now considered that the infestations surveyed consisted of Californian burr. Representative properties were surveyed and a summary of the data is presented in Table 2.

Table 2. Potential area of Californian burr and area actually infested on Murray River frontage country between the junction with the Murrumbidgee River and the South Australian border.

	Potential sites (ha)	Infested sites (ha)	% area infested
Field survey	33 492	14 965	45
Estimate of those not surveyed	13 004	1 335	10
Total	46 496	16 300	35

Most of the infestations were less than 1 ha in area.

The most heavily infested sites were the timbered river bends, oxbow lagoons, creek channels and sandy banks and beaches. Sites with light infestations were lagoons, river fringes and outer floodplains.

It was noted that Californian burr often occurred in dense stands on one property, while on identical sites on an adjacent property downstream there was no infestation. This may indicate that most infestations are in fact extensions of existing ones, rather than the river providing continual reinfestation.

Other areas. Noogoora burr has spread in other areas in western New South Wales over a similar period but generally to a lesser extent than in the West Darling region.

METHODS OF CONTROL

For effective control the plant has to be killed before the seeds mature. Methods used in western New South Wales are:

1. Mechanical. Burr cutting, cultivation and slashing are used.
2. Chemical. Conventional spraying with 2,4-D is carried out where possible. However inaccessibility of infested sites because of local topography and scrub cover restricts spraying (and other control methods) over many areas.
3. Fire. Fire has been used to destroy stands of Noogoora burr. The authors have observed destruction of seeds following a fire. A secondary value of fire appears to be in opening up scrub dominant areas to allow implementation of other control techniques.
4. Grazing management. Heavy grazing, especially by cattle, can suppress growth of Noogoora burr. However, this is difficult to achieve except in small paddocks.

CONTROL IN RELATION TO SITE AND DEGREE OF INFESTATION

The spread of Noogoora burr in the West Darling and other areas of western New South Wales will probably cease once all the silty clay flood-out areas are infested. At present it is not practically possible to carry out an

eradication or even a significant reduction control programme. However, it is feasible to employ control measures to contain existing small infestations and maintain potential sites free from infestation.

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