

Taurian thistle in Australia – a candidate for eradication?

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Summary Taurian thistle (*Onopordum tauricum* Willd.) is a tall biennial thistle of southeastern European origin that has been introduced to California and southern Australia. In Australia it is known from only three Victorian sites, the earliest record of which dates back to the early 1900s. It has apparently never spread far from these known sites of introduction. Recent counts of population size at two of these sites show it to be in very low numbers. Its limited number of locations and low population size make Taurian thistle an appropriate candidate for eradication from Australia.

Keywords Taurian thistle, *Onopordum tauricum*, number of sites, population size, eradication program.

INTRODUCTION

Taurian thistle (*Onopordum tauricum* Willd.) is native to southeastern Europe (Tutin *et al.* 1976). It occurs as an introduced weed in southwestern Europe and, more recently, California (Munz 1968), where it is a tall biennial thistle of roadsides and waste places. As well as being a ruderal, *O. tauricum* has hybridised with both *O. acanthium* L. (Scotch thistle) and *O. illyricum* L. (Illyrian thistle) near Montpellier, south-western France (D. Briese, pers. comm.). In Australia, it is known to occur only in western Victoria (since about 1913 (Willis 1972)), and probably earlier, and from an area between Euroa and Violet Town in northeastern Victoria (since 1974, W. Parsons, pers. comm.). One specimen from each of the two known sites (Goroke and Natimuk) in western Victoria was collected in the early 1960s and, together with a specimen from Euroa, are located in the Melbourne herbarium.

In this paper we report a recent attempt to locate all three known populations of Taurian thistle in Victoria and to assess their current population sizes and areas of distribution.

METHODS AND RESULTS

In November 2001, we successfully re-located plants of Taurian thistle at two of these three known sites. In 1964, when a specimen was collected from near

Natimuk in western Victoria, the population was described on the herbarium label as 'confined to a couple of hundred square yards'. In 2001, we counted 12 flowering plants and six first-year rosettes over an area of about 12 m² at this site, and a single flowering plant some metres further away. One dead stem from the previous year persisted at the site.

Despite a thorough search of the town site of Goroke and the former railway sidings at Morea and Carpolac, we could not locate any plants of the second known occurrence of Taurian thistle in western Victoria, whereas in about 1964 the Goroke population was recorded on the herbarium label as occurring 'over about 0.5 acre' (0.2 ha).

At Euroa, in the foothills of the Strathbogie Ranges, an infestation of 15 ha of Taurian thistle was measured in 1984 over an area of 150 ha of pasture. Subsequently, following a sustained attempt at eradication by chipping and application of dicamba by one of us (DB), the population had been reduced to about 60 plants by 1999. In 2001, we counted 22 flowering plants and eight first-year rosettes. Two other 'satellite' populations, known previously from the same region, were unable to be re-located.

DISCUSSION

The recent re-location of two sites at which higher populations of Taurian thistle had been measured formerly and the measurements of a considerable reduction in population size reported in this paper raises some interesting questions.

Given a history of known introduction of almost 90 years to western Victoria, why has Taurian thistle not spread further? Are the spread characteristics of Taurian thistle similar to that of the only known occurrence of Illyrian thistle in Victoria (at Smeaton, near Maryborough) that has been known to be present since the 1870s (Parsons and Cuthbertson 1992) and has never spread beyond that localised area?

In view of the known propensity of *Onopordum tauricum* to hybridise with both *O. acanthium* and *O. illyricum* in southwestern France, is the present separation of distribution patterns of all three *Onopordum*