Department of
Primary Industries and
Regional Development

GOVERNMENT OF
WESTERN AUSTRALIA

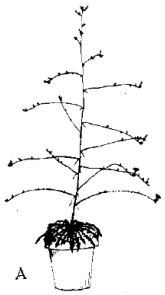
Industry
Funding
Scheme
Grain, Seeds & Hay

Biotypes of skeleton weed in Western Australia

There are 3 biotypes of skeleton weed in WA. While they are all one species, there are genetic differences between them which affect their susceptibility and resistance to different biological control agents.

1. Narrow-leaved

Has a classic 'Norfolk pine' shape. Flowering stems tend to have horizontal branches at 90 degrees to the main stem. Rosette leaves are narrow with pointed, spear like tips.



2. Intermediate

Is only known to occur in the Merredin, Bruce Rock and metropolitan areas of WA. Branches angle at less than 90 degrees from the main stem and tend to point upwards with lots of tertiary branches. Rosette leaves have shovel shaped tips.

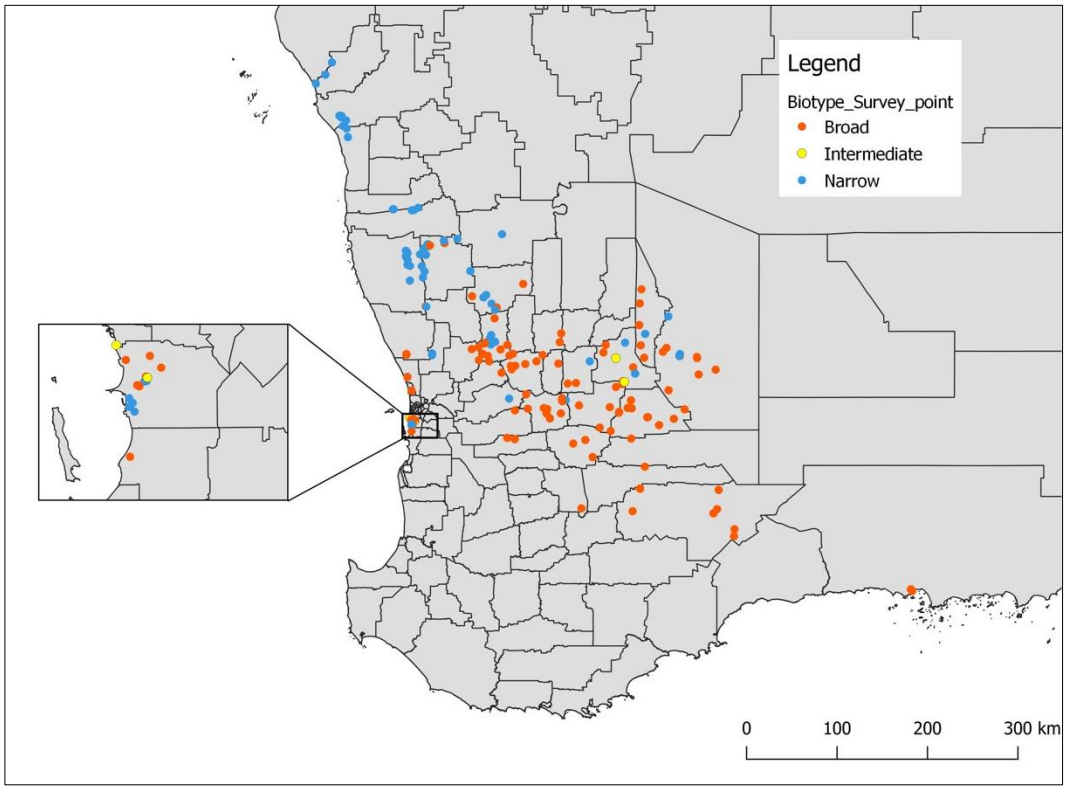
3. Broad-leaved

Is the fastest spreading form. Branches angle at less than 90 degrees from the main stem, and tend to point upwards, with more stem leaves. Rosette leaves have rounded tips.

Diagrams of biotypes from Hull VJ Groves RH (1972) *'Variation in Chondrilla juncea L. in south-eastern Australia'*. Australian Journal of Botany 21, 113-135,

Distribution of biotypes

Research conducted by the department and CSIRO in 2020 and 2021 indicates that the broad-leaved biotype has greatly increased its distribution and density in the last decade and is aggressively outcompeting the other biotypes in the eastern wheatbelt.



Differences between the biotypes give the broad-leaved form a number of competitive advantages over the other 2 forms, such as the broad-leaved seedlings producing a deeper and more branched root system within a few days of germination.

Narrow-leaved	Intermediate leaved	Broad-leaved
Summer drought stress reduces seed production and viability.		Summer drought does not affect seed production or viability.
Older root segments produce more buds and have greater reproductive potential than young roots	Older root segments produce less buds and have less reproductive potential than young roots	Older root segments produce the most buds. These plants produce up to 5 times more root buds than the other types, giving them much greater potential to reproduce from root fragments