

## Boneseed / Bitou Bush Hybridisation Project

This research project is being undertaken by Paul Marynissen from Central Coast Council (and others). It is potentially important because we don't have a good understanding of how the separate control methods for these individual species will work with the different levels of hybridisation.

It aims to determine:

- what the best method is for controlling Boneseed / Bitou Bush in very heavily infested areas;
- what, if any, underlying weed species are present that may be currently being suppressed by the allelopathic effects of Boneseed and Bitou Bush; and
- the potential native regeneration that may take place after control.

Methods for the project are as follows;

Subjectively establish on-site the most common or easily identifiable phenotypic characters and attempt to group them into definable and repeatable categories in line with obvious differences in:

- Leaf serration
- Bush architecture
- Flowering time
- Ray floret number

Complete data collection within a minimum of 30 plots. At each sampling plot collect floristic data within thirty 100m<sup>2</sup> quadrats, five quadrats located along each of six north south aligned transects within the site area at the south of Winney Bay.

Some selective arrangement of sampling is proposed to include representative areas already mapped in determining management zones (Biosis 2018), with specific location of each transect and quadrat randomly chosen within the following five zones potentially encountered in the work zone:

- North facing, Coastal Headland Low Forest E51c with heavy Boneseed infestation
- North facing, Coastal Headland Low Forest E51c with Moderate Boneseed infestation
- North facing, Coastal Headland Low Forest E51c with Light Boneseed infestation
- North facing, Coastal Headland Shrubland E51b with heavy Boneseed infestation
- North facing, Coastal Headland Shrubland E51b with Moderate Boneseed infestation
- North facing, Coastal Headland Shrubland E51b with light Boneseed infestation

Transect locations are to be randomly located, whilst generally covering the designated work zone and forming a north south gradient. Quadrats are not to be evenly spaced but randomly located along each transect, GPS recorded grid references to be supplied for all works.

All vascular plant species to be recorded within 100m<sup>2</sup> quadrats.

Boneseed and Bitou Bush to be graded into the previously agreed generalized phenotypic groupings, whilst this must be determined in the field an example would be:

1. Full Bitou bush character (florets, architecture, leaf morphology)
2. Bitou bush leaf and architecture, 4-8 florets 'Boneseed like'
3. Boneseed leaf and character, 11-13 florets 'Bitou like'
4. Full Boneseed Character (florets, architecture, leaf morphology)

All taxa in each quadrat to be given a Braun Blanquet score from 1 to 6;

It is proposed that within these works the following three Boneseed / Bitou bush treatment methods be adopted:

1. 12 plots hand treatment, cut and paint, hand pull and frill large plants with Glyphosate
2. 12 plots herbicide spray treatment, Glyphosate
3. Six control plots where no treatments applied.

Representative of the following zones within the site.

- North facing, Coastal Headland Low Forest E51c with heavy Boneseed infestation
- North facing, Coastal Headland Low Forest E51c with Moderate Boneseed infestation
- North facing, Coastal Headland Low Forest E51c with Light Boneseed infestation
- North facing, Coastal Headland Shrubland E51b with heavy Boneseed infestation
- North facing, Coastal Headland Shrubland E51b with Moderate Boneseed infestation
- North facing, Coastal Headland Shrubland E51b with light Boneseed infestation

Fire will be integrated through some plots being burnt prior to chemical treatment (on weed regrowth), others being burnt post chemical treatment with chemical treatment to follow on weed regrowth.

The burning will be carried out in conjunction with the local Aboriginal Firesticks group. Weed control works need not be limited to the quadrats once established, we additionally hope to target dominant large Boneseed / hybrid flowering specimens via frill and injection across the designated work zone.

We acknowledge the limitation in coverage, duplication etc. of this study though believe it will represent useful baseline data and an informative pilot study to assist prompt continuation of works going forward.

The results of this research will be made available to any land manager that is dealing with Boneseed, Bitou Bush and their hybrids in coastal areas to enable effective control.

We will be sharing the results of this project as they become available in subsequent newsletters, so stay tuned.