

### Monitoring Datasheet - Madeira beetle

Observer name

Site name

Date

Date beetle released

Location

Easting/latitude	Northing/longitude	Datum
<input type="text"/>	<input type="text"/>	<input type="text"/>

Error GPS:

Description of location/vegetation type/mud map/Madeira infestation shape

**1. 20 minute time search - is the agent present at site:**

Search in a **5 metre radius** around release site especially on underside of leaves

Please circle as required and enter number of observations

Beetle present	Larvae present	Dark brown glutinous substance
yes/no    #:	yes/no    #:	yes/no    #:

eggs present  
yes/no    #:

Are there any leaf windows (holes in the leaves) or any damage on leaf margins?  
yes/no    #:



**4. Termination of Madeira vine infestation in all cardinal directions:**

	Distance in metres		Distance in metres
North	<input type="text"/>	Northeast	<input type="text"/>
East	<input type="text"/>	Southeast	<input type="text"/>
South	<input type="text"/>	Southwest	<input type="text"/>
West	<input type="text"/>	Northwest	<input type="text"/>

**5. Photopoint**

Photopoint location: easting  southing  date:   
or latitude  longitude

camera type:   
zoom length/focal length:

Description of photo point location,  
point of focus:

Photographers name:   
time of day:

## **METHODOLOGY FOR ASSESSING SITES FOR ESTABLISHMENT AND IMPACT OF THE MADEIRA VINE BEETLE**

### *Required material*

Materials needed for two surveyors to conduct the survey:

- 25x25 cm quadrats
- Compasses
- GPS
- Measuring tapes
- Data sheets (Appendix)
- Writing pads and pencils

For the photopoints additionally:

- Black/white board
- Chalk or non-permanent marker
- Post to act as photo point marker
- Camera

### *Description of field data sheets and survey procedure*

The first page of the data recording sheet contains information on the observer, site location details, date of survey and the beetle release date. There is an area for the observer to draw a mud map and outline the vegetation type and anything else the observer considers relevant for the site. There is also a space for indicating the density of the Madeira vine infestation, being from high to low.

After the general site description, the observer records information on the presence of the beetle, larvae or remains of larvae at the release site for 20 minutes or two people searching for 10 minutes. The exact release spot is located by GPS and a 5 metre radius plot is established by running two tape measures in cardinal directions through the centre of the release spot thus dividing the 5 metre circle into 4 sections. Spend 5 minutes searching for the beetle in each of the 4 quadrants. Lift leaves gently as the beetle is often on the underside of leaves and may flee. Also record other beetle evidence such as larvae, dark glutinous substance, eggs, and leaf damage by circling either the yes or no and recording the number of observations. Eggs are recorded as number of clutches.

In Section 2 (page 2) record the level of damage at 20, 25x25 cm quadrats within the 5 metre radius plot. The quadrats are placed haphazardly over the leaves horizontally or vertically according to the slope of the infestation, and the Madeira vine leaves or sections of leaves that are visible from that angle are recorded. Do not count the leaves underneath the immediately visible layer, only the leaves that are visible from looking on top. Note the

number of leaves in the quadrat; the number of leaves that are damaged; the type of damage, i.e. leaf windows or leaf margins (tick the relevant box); and tally the number of leaves under each of the five leaf damage categories (definitions of categories are at the bottom of the table).

Data on control agent spread from the release spot is recorded in Section 3. Record the evidence of control agent presence in all cardinal directions and continue searching for the agent until the infestation terminates or, if a large infestation, presence has not been detected for some time. A measuring tape is used and the observer walks in each cardinal direction looking for evidence of the beetle presence. When located, record the distance from the release spot, the cardinal direction, and circle 'yes' or 'no' in each of the six evidence categories, noting down the number where specified. Continue searching until the infestation terminates and note down this distance for each direction. Enter this extent of infestation data in Section 4.

If the Madeira vine infestation shows dense cover clearly visible from some distance it may be useful to establish a photo point. If the site is suitable, please fill in exact GPS coordinates of the photo point, the camera type and zoom length/focal length that the picture was taken with. Also a short description of what the camera was focusing on should be recorded in the box provided. Please also record photographer and time the photo was taken.

For information on how to select and set up a photo point see the Standard Monitoring Techniques in the Monitoring Manual for Bitou Bush and Native Plant Recovery (Hughes *et al.* 2009), prepared by the NSW National Parks and Wildlife Service.

(<http://www.environment.nsw.gov.au/bitouTAP/monitoring.htm>)