

**National Phylloxera
Management Protocol:
Procedures for the
upgrading of phylloxera zone
status (remote sensing)**

**National Vine Health Steering Committee
(NVHSC - 2006)**

STATUS UPGRADE ALTERNATIVE SURVEY PROTOCOL (INCORPORATING REMOTE SENSING)

Revision Date: October 2005

This protocol using remote sensing is only to be used where the managing authority is satisfied that a minority of vines within the survey district are grafted to phylloxera-tolerant rootstocks.

The protocol has three components:

- One **intensive ground survey** as per the National Phylloxera Management Protocol (see *Status Upgrade Procedures April 06*)
- Collection of duplicate aerial imagery to approved specification, taken at least two years apart; with subsequent corresponding **targeted ground surveys** of low vigour sites (both years' imagery) and change detection (second year imagery)
- Other requirements of the National Phylloxera Management Protocol – ie survey of high-risk non-commercial vines, appropriate legislation to control movement of phylloxera risk vectors and active awareness-raising programs.

The aerial and ground surveys can be scheduled over a three or four year period. An example of an acceptable survey program¹ might be:

Year One

Collection of aerial imagery to the approved specification (see below) and subsequent processing

Intensive ground survey as per national protocol (could alternatively be in year two)

Year Two

Targeted ground survey of low-vigour sites identified by Year One aerial imagery (could alternatively be in year one, if processing is completed in time to allow ground surveying to take place before end of April).

Year Three

Collection of aerial imagery and subsequent processing – including temporal analysis (change detection) of two sets of imagery.

Year Four

Targeted ground survey of sites identified by second set of aerial imagery processing (could alternatively be carried out in year three, if processing is completed in time to allow ground surveying to take place before end of April).

Aerial Imagery – approved specifications

- Aerial imagery to be collected of all vineyards within the survey region
- Digital multi-spectral imagery (DMSI) at not more than 1 metre resolution;
- Bandwidth to be 25Nm wide, centred on 450nm (blue), 550nm (green), 670nm (red) and 780nm (NIR)
- Imagery to be collected *after* veraison and *before* harvest (or before nets are applied). The closer to veraison the better.
- Imagery to be orthorectified, +/- 1 metre spatial accuracy
- Imagery to be processed using the Simple Vegetation Index (NIR/R)

¹ All proposed survey programs must be approved by the NVHSC before commencement.

- Selection of sites for targeted ground survey:

Year One

Sites showing a radial pattern of low vigour *or* anomalous low vigour (ie when compared to neighbouring vines)

Year Three

As per Year One but with the addition of temporal analysis (ie identification of vines that have shown an anomalous level of decline in vigour in the subsequent two years).

- Survey procedure for targeted ground survey:

Roots of all vines within the identified low vigour sites are to be individually inspected in accordance with the procedure documented in the Operating Procedures for Conducting Vineyard Surveys.