

APPENDIX 4: MONITORING METHODS

The following notes provide a brief summary of some of the approaches available for monitoring. Final details will be included in the annual restoration work plans.

Monitoring will be based on permanently marked plots (10 x 10 or 20 x 20 m in size). The location of each monitoring plot will be marked with a permanent metal stake in the ground at each corner and the position of the plot will be fixed using a Global Positioning System (GPS). Methods for plot measurement will follow those described by Handford (2000).

Regeneration monitoring plots: Within each plot individual woody plants > 1cm diameter at 1.4 m will be permanently marked and measurements made of diameter, height and condition. Permanent marking will involve tagging individual shrubs or trees by nailing a numbered tag into the trunk (allowing sufficient room for tree growth) and recoding the position on an x-y grid system. A number of regeneration plots (4-10) will also be established to assess the densities of regenerating vegetation and will involve permanently marked 1 x 1 plots within the main plot. Seedling and sapling numbers will be counted by species in two height classes (<10 cm tall, 10 – 50 cm tall) but not permanently marked. A list of all species present in the plot will also be made to include species not recorded in the permanent measurements (e.g., herbaceous plants and lianes).

Restoration planting monitoring plots: Within each of these plots all planted plants will be permanently tagged and a number of plant growth attributes measured (e.g., plant height, canopy spread and basal diameter). In addition, several indicators of ecosystem health will also be assessed including natural regeneration of indigenous plant species (an indicator of seed dispersal and habitat quality), and litter coverage and depth (an indicator of nutrient cycling). Final details on these will be determined at the time the plots are established.