

9. Monitoring

9.1 introduction

A comprehensive monitoring programme will be established to assess the success of the restoration work. Monitoring will focus on the recovery of forest remnants and regenerating forest areas, the success of the restoration plantings themselves (e.g. plant survival), and on the abundance and distribution of particular plant and animal groups (e.g. abundance of key species such as korimako and regeneration of indigenous forest species in existing regenerating forest). It is not proposed to undertake specific animal or plant pest monitoring; rather the success of animal and plant pest control will be assessed by the response of indigenous biodiversity to this control. This section provides an overview of the approach that will be taken to monitoring.

9.2 Regeneration monitoring

For a representative selection of regenerating forest areas, permanent plots will be established. Because permanent plots are time-consuming to establish and to re-measure, it is proposed to establish no more than five each year with a five-year re-measurement cycle. Thus the total number of permanent plots will be 25. The methods for establishing permanent plots are outlined in Appendix 4. Plots will be established in proportion to the area of regenerating forest types present.

9.3 Restoration monitoring

Permanent 10 x 10 m plots will be established within the restored areas to monitor the overall success of the plantings. These plots will be used to assess both the survivorship and growth of the plantings and the establishment of ecosystem processes within the plantings (see Appendix 4 for more details). Permanent plots take time to measure and it is important that the number of plots established is sufficient to allow assessment of planting success but not too many as to become logistically difficult to manage. Permanent plots should be measured annually, at least during the first 5-10 years after planting. It is important that the same methods are used for measurements in subsequent years. It is proposed that at least two plots are established in the area planted in each year.

9.4 Photopoints

Permanent photopoints will also be located throughout the Kate Valley CMA as a means to document the change that occurs as a result of restoration work. Initially photopoints will be established at a number of sites throughout the Kate Valley CMA and used to follow overall change. In addition, photopoints will be established at each permanent monitoring plot location. In order for successive photos to be taken at the same location, all photopoints will be permanently marked with stakes and located using GPS.

9.5 Focal species monitoring

Focal species monitoring will focus on the abundance of korimako and kereru as indicators of the overall success of the restoration project. It is proposed that monitoring will be based on walking defined transects and will involve a distance sampling method (Barraclough 2000) to incorporate a probability of detection and to reduce the problems of confusing relative abundance for conspicuousness. The final number of transects has yet to be determined, but they will include the major regenerating forest areas within the Kate Valley CMA. Counts on each line will be replicated at least three times. Counts will be carried out at the same sites each survey and will be undertaken at the same time (October/November) each year.

