

A Method to Assess Foliar Browse by Herbivorous Pests

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Introduced animals have been implicated as one of the greatest threats to New Zealand's biodiversity. Many agencies and individuals conduct pest control to protect natural values. A variety of techniques is available to monitor the environmental response to pest control efforts.

A technique used by many pest control agencies to assess the degree of possum damage (to determine both the need for, and success of, possum control operations in indigenous vegetation) was tested for its potential to be used by members of the community operating as environmental watchdogs.

The technique, Foliage Cover Scale (FCS), was trialed by three groups of observers: (i) members of the public; (ii) people with an ecology or similar science background; and (iii) field ecologists who are regular users of the technique. Each observer was asked to apply the technique to ten pre-selected kohekohe (*Dysoxylum spectabile*) trees.

The FCS involves estimating the foliage cover of indicator species, e.g., kohekohe, using a computer generated picture card (representing foliage cover in 10% increments) as a visual aid to foliage cover assessment.

Results of this pilot study suggest that there was, in most cases, no significant difference between the foliage cover estimates made by FCS users, ecologists with no experience in FCS, and lay people with an interest in natural history. Most found the technique mentally and physically easy to apply. Confidence in application of the technique varied, with FCS users very confident, lay people generally confident, and a large proportion of ecologists hesitant.

For all observations made, 90% of the estimates were within 20% of the foliage cover value estimated by a seasoned reference observer. These results compare favourably with previous work by Payton et al. (1997) testing the observer variance of experienced FCS users.

Not all observers were consistent in their application of the technique - under-estimating the foliage cover of some trees while over-estimating others. Consistency may improve with experience, but has not been shown to be the case with the ten trees in this experiment.

A parallel study showed a willingness among members of the Waikato Region to undertake monitoring of forest health several times per year in forest areas close to them. Fifty respondents to a questionnaire indicated an interest in becoming volunteer monitors.

There is potential to build a network of volunteer vegetation health monitors across the Waikato Region. Further assessment, using larger sample sizes, is required to build on the results of this study. Observer consistency over time must be assured before the technique can be successfully applied by volunteer users.

Key Words: community monitoring, vegetation health assessment, possum damage assessment, Foliar Browse Index, Foliage Cover Scale.