

# Weed control and monitoring in tuff crater reserve



Non-native invasive plant species are recognized worldwide as a threat to biological diversity, second only to direct habitat loss and fragmentation. Auckland has been identified as the weediest city in New Zealand by the Auckland Regional Council. Tuff Crater is a narrow coastal reserve in North Shore, Auckland, which is heavily infested with weeds such as elaeagnus, pampas grass, tree privet, Chinese privet, gorse, moth plant, wattle and climbing asparagus. This monitoring report provides information and procedures for monitoring the effectiveness of weed control work done in Tuff Crater during the second quarter of 2010.

The goal of this report is to identify and monitor pest plants during a weed control programme conducted at Management Unit 7 of the reserve.

Targeted application of herbicides and manual methods are the main approaches used. Plot procedure 20 x 20m sampling method using line transects and quadrats were applied to record inventory populations of weeds located on site. Data entry involved transporting raw data from field sheets into an electronic form. Weeds such as elaeagnus which covered whole cliff sides of Management Unit 7 were successfully controlled using manual methods.

The above monitoring helps to determine that the weed control methods used are effective to protect the native vegetation and habitats of indigenous species in the reserve. It is recommended that introduced species diversity and abundance data are stored in a Geo-Spatial Database. This information could be used to observe trends, create data summaries and conduct statistical analyses to assist in the long-term plan to restore Tuff Crater to a self sustaining indigenous ecosystem.

1. Introduction This report

is an investigation into weed control and monitoring in Tuff Crater, North Shore, Auckland.

It provides information, procedures and identifies the effectiveness of a weed-control programme, conducted by The Royal Forest and Bird Protection Society of New Zealand (Forest & Bird), North Shore. Forest & Bird is New Zealand's largest independent conservation organisation that works to preserve natural heritage and native species. The current scope for this report is to identify and monitor pest plants during a restoration project done in the second quarter of 2010. Weeds are abundant and widespread in the reserve which could have adverse effects on native species and local ecosystems.

Current restoration will involve controlling and eradicating these weeds from the Management Unit 7 (MU7) area of the reserve. The long-term plan is in progress for the Tuff Crater reserve, to provide a ten-year programme for weed control and revegetation of native plants to restore the area to a self-sustaining indigenous ecosystem.

## 2. Background

### 2.1 . Objectives

A natural ecosystem is complex and intricate where different species of plants have an effect on each other. Introduced plants grow fast and displace indigenous species, destroying the native ecosystem and biodiversity which has taken thousands of years to evolve.

This will likely increase the risk of total extinction of critically endangered plant and animal species native to New Zealand. Objectives of this monitoring are to determine successful outcomes in the protection of native vegetation and significant habitats of indigenous species in the Tuff Crater

reserve. Auckland region has over 1000 alien introduced species (Auckland Regional Council, 2002, p. 2) which self propagate in the wild. Many of these are considered weeds and cause serious destruction to the natural environment and biodiversity in Auckland's reserves.