COASTAL RESTORATION TRUST OF NEW ZEALAND

Tāhuna Ora

Technical Article No. 14.3

Managing Monitoring Data for Dunes

INTRODUCTION

User-friendly methods have been development for Coast Care groups and management agencies to enter and process monitoring data from dune surveys via web-based tools that provide graphical interpretation of results. This allows Coast Care groups to quickly determine the characteristics of their dunes and the success or otherwise of their restoration efforts, and therefore guide improved practices in future work programmes.

This article outlines the data management system that has been developed for use online and available on the Coastal Restoration Trust's website for those involved in surveying their dunes aimed at quantifying vegetation cover by species and changes over time.

MANAGING YOUR DATA

As indicated in Technical Handbook Article No. 14.2, the basis of the dune monitoring method is the use of transects placed perpendicular to the coast sampling across the range of zones from foredune to landward. Using the Rapid-Point sampling method to determine vegetation cover by species and in relation to dune profile and proximity to the sea is proving popular in gathering survey data. However, there is no point in accumulating data unless it is used to provide insights into firstly providing a baseline of what the dune and its vegetation characteristics are, and then with repeat surveys providing a meaningful comparison of change over time, especially if active management is occurring.

From each survey, users will have data from several transects established across their sites that requires loading into the computer, followed by analysis and interpretation of this data to provide meaningful results. The data management system allows users to enter their own data that includes all information on the location of their site, each of the uniquely identified transects including GPS locations of permanent landward datum points, bearing of each transect seaward, and then vegetation and dune profile data from point sampling along each transect.

Using standardised templates between field survey forms and computer spreadsheets, and standardised coding of plant species, the survey data is then automatically processed to provide the results in several forms including summary tables, graphs of the proportions of species found based on vegetation cover, and changes in dune profile from landward to seaward ends of each transect.

Repeat surveys based on locating the permanent landward datum points show changes over time based on robust science-based sampling design, data analysis and interpretation that will assist in adjusting dune restoration and management priorities where required.

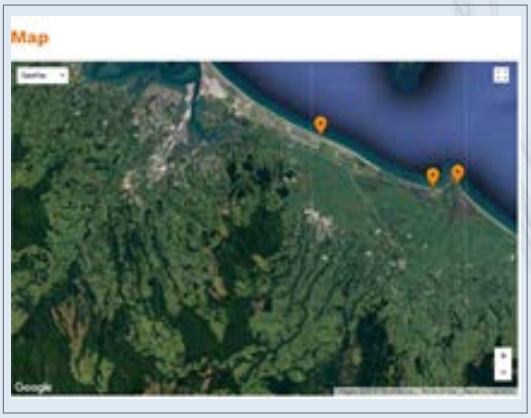
INTER-ACTIVE WEB-BASED PROCESS - *It's easy to use!*

Refer to the COASTAL RESTORATION TRUST'S website for Data Management
https://monitoring.coastalrestorationtrust.org.nz

Users can manage the entire monitoring operation from setting up dune transects, undertaking the field-based sampling, entering data onto dedicated web-based spreadsheets, and view results of vegetation cover by species.

A series of screen shots of a typical monitoring programme underway in the Bay of Plenty region is shown including:

- Selection of the Bay of Plenty region,
- Locations of several beaches in the region where transects have been established at each,
- Location of one beach Maketu where one of several transects that have been established there is shown, and
- Finally where survey data has been analysed and presented to provide the proportion of species found and the dune profile for that transect.



An example of a map showing locations of transects on some Bay of Plenty beaches.

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The mission of the Coastal Restoration Trust is:
"To see the majority of New Zealand dunes restored and sustainably managed using indigenous species by 2050".