

RAPID-STEP METHOD FOR SURVEYING COASTAL DUNE VEGETATION

Guidelines for Communities



WHY do we measure and monitor the state of our coastal dune systems?

A survey of sand dunes across the range of zones from foredune to landward establishes a baseline in dune morphology, vegetation cover and species composition.

Survey information assists Coast Care groups and agencies in the management of their dunes and enables them to;

- set priorities for restoration programmes
- monitor performance of these programmes
- measure changes over time.

HOW can we measure and monitor the state of our coastal dune systems?

- Dune vegetation is characteristically influenced by proximity to the sea resulting in zones of different vegetation types that run parallel to the coastline.
- Therefore, sampling vegetation and dune form is best undertaken by running permanent transects perpendicular to the coastline using scientifically robust and consistent methods.
- This will provide a record of any change over time.

The Coastal Restoration Trust of NZ

is developing easy-to-use community-based methods that can be quickly undertaken by Coast Care groups, councils and other managing agencies for surveying the status of vegetation cover and dune morphology.

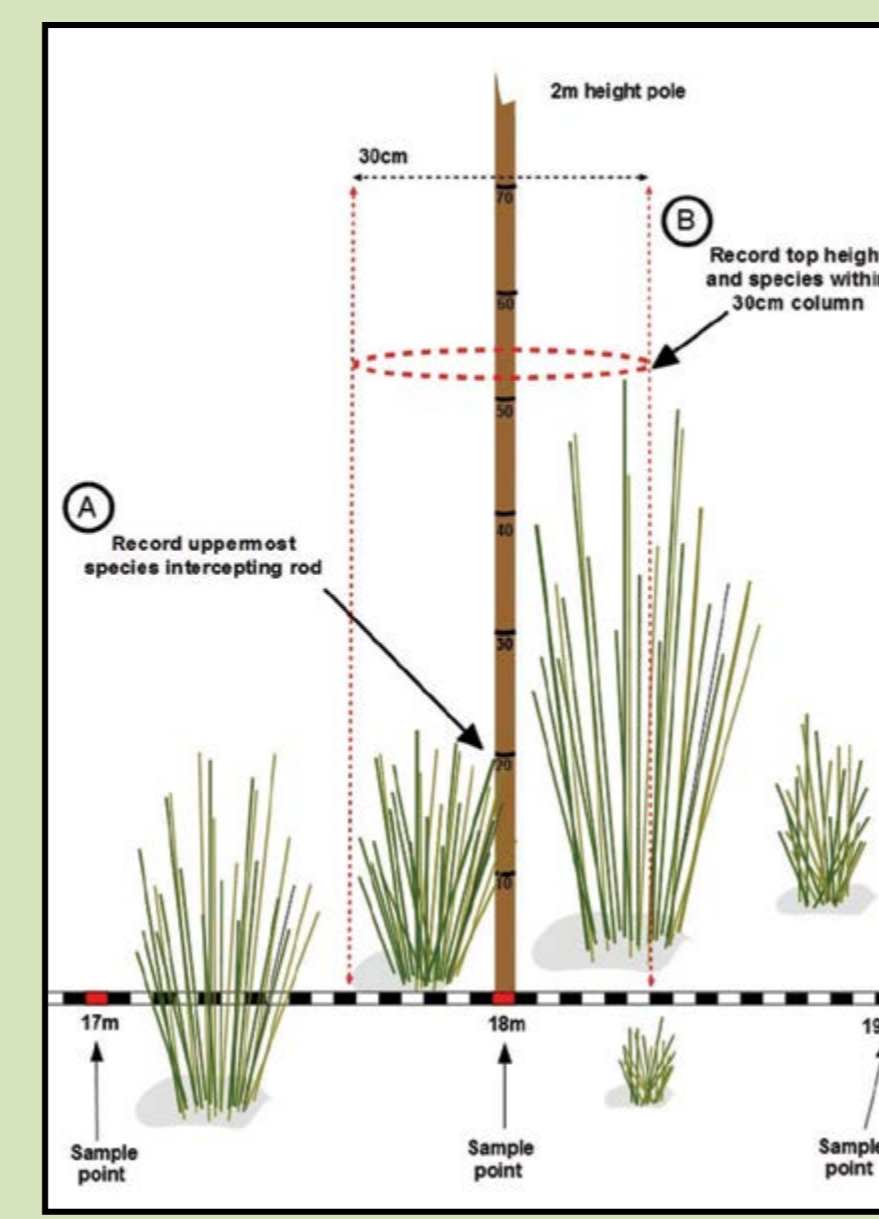


The project is funded by the Ministry for the Environment's Community Environment Fund in collaboration with coast care groups, councils and the Department of Conservation.

SURVEYING DUNE VEGETATION

3 easy steps for setting up permanent transects:

1. Place a minimum of 5 transects perpendicular to the coast at a fixed interval (e.g. transects 20 m or 50 m apart) to sample a representative section of the vegetation and dune morphology from high water mark to landward.
2. Permanently mark landward end of each transect for easy relocation for repeat surveys (e.g. fence post).
3. Place a measurement tape along a transect bearing from backdune to foredune; record transect bearing for repeat sampling.



Rapid-Point Sampling

An easy-to-use Rapid-Point sampling method for vegetation cover and species composition:

1. Determine sampling points at fixed intervals along the transect - likely to be 1 m apart for most dunes.
2. Drop the 1 -2 m vertical height pole at the sampling points along the transect tape.
3. Record the uppermost species and its height intercepting (touching) the height pole (A).
4. Record top height of vegetation and the species within a 30 cm diameter column of the height pole (B).



Point sampling along dune transect, Cooks Beach, Coromandel.

Photopoints

A photographic record of each transect will illustrate change over time using standard methods for obtaining photographs from the same point.

Recording Data

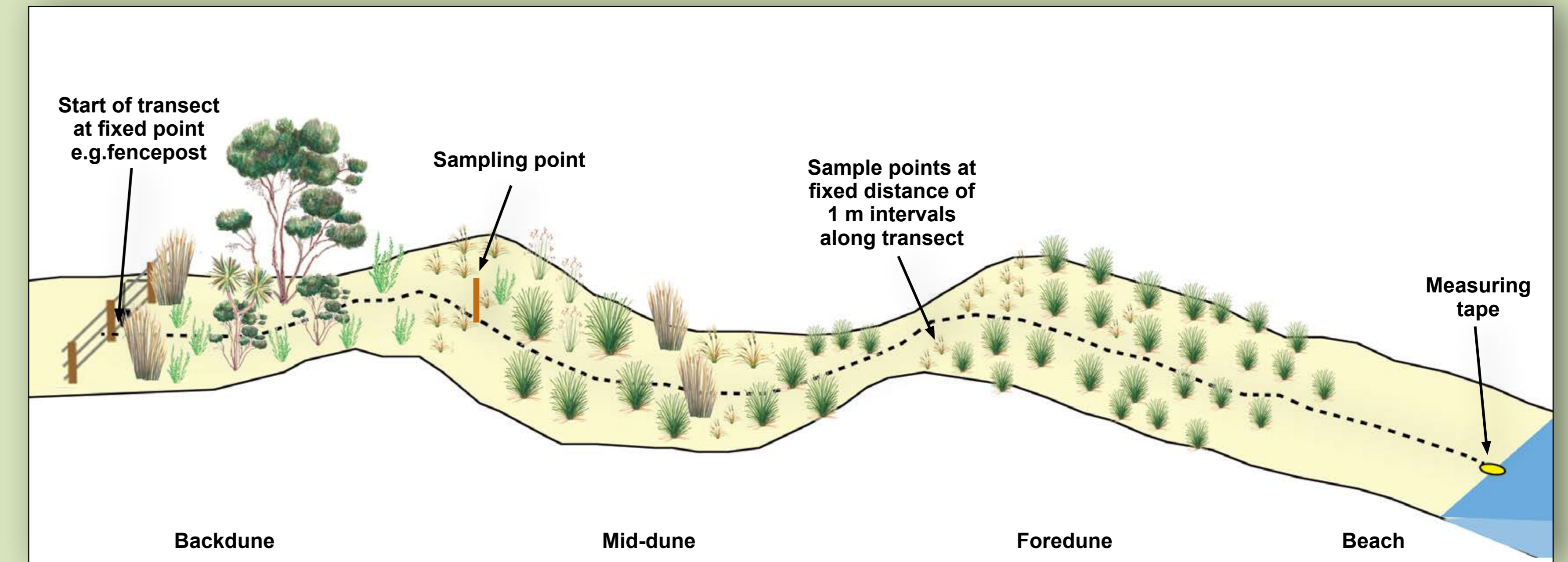
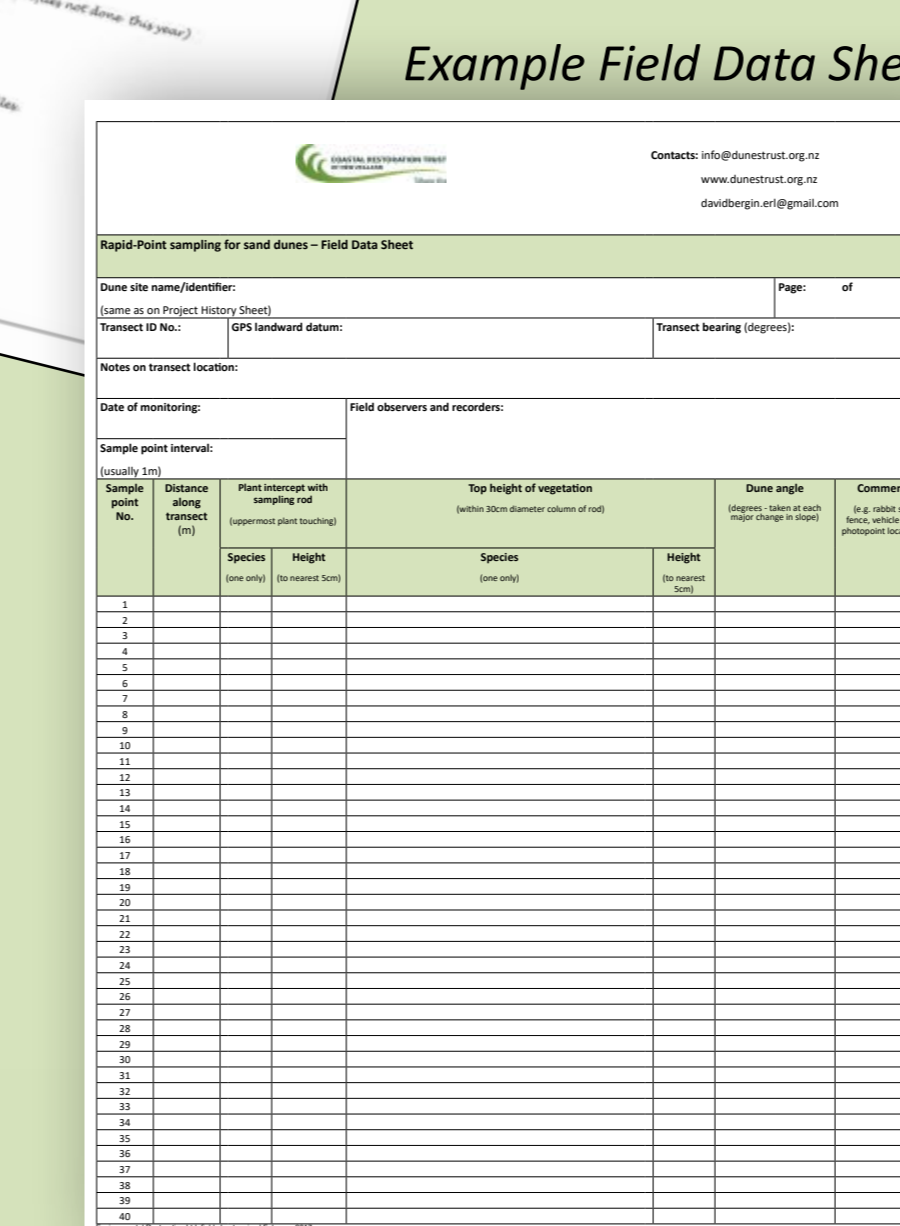
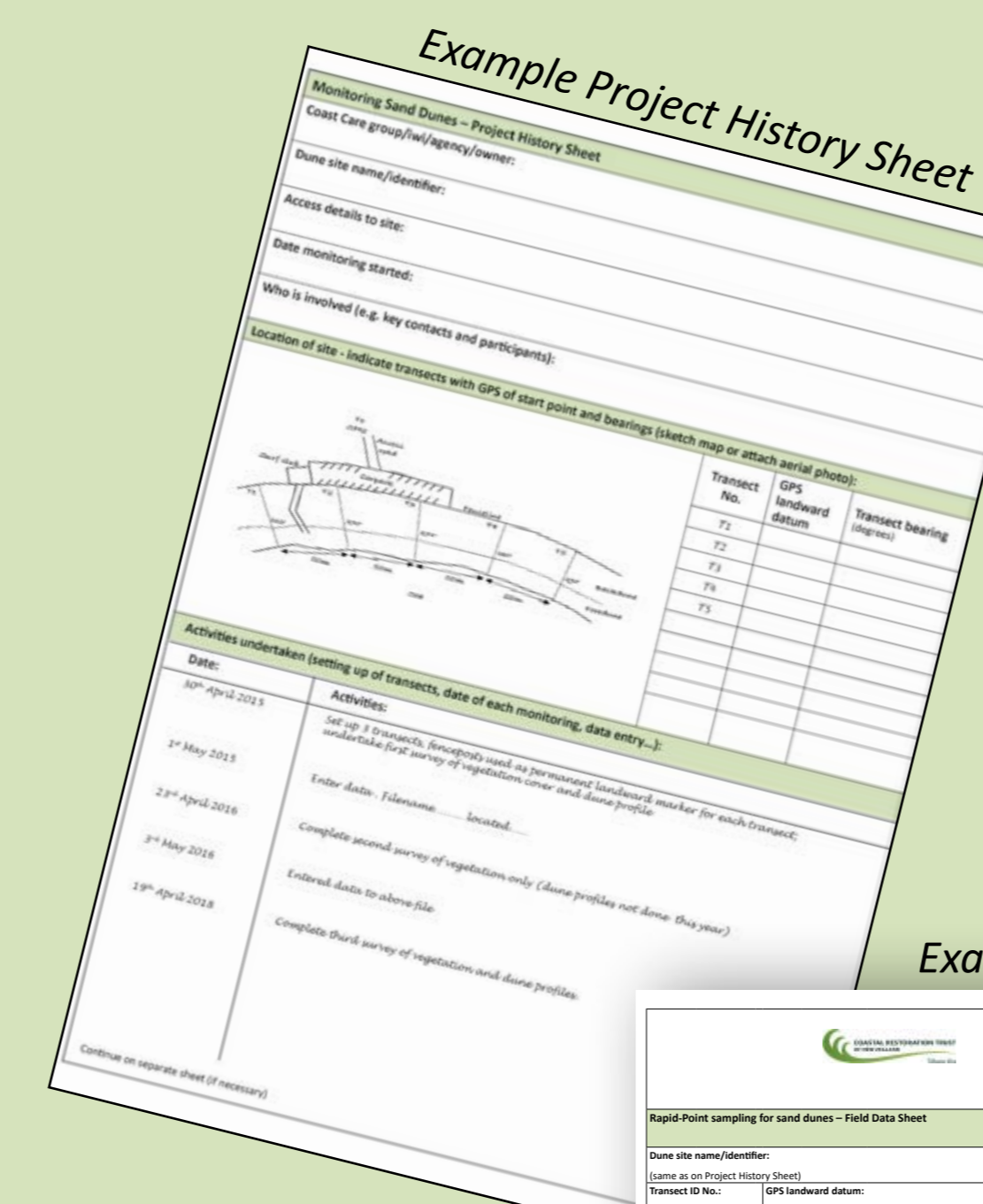
Customised Project History Sheets and Field Sheets are available for both mobile devices or as hard copy to record dune survey data.

Project History Sheets provide a running record of what has been done at the site including:

- Site identifier (e.g. name of site and Coast Care group)
- Map of transect locations and description of start points (e.g. pegs, fencepost).
- Previous monitoring undertaken when and by whom.
- Location of photopoints.
- Any other relevant information such as site access, key contacts, etc..

Field Data Sheets allow for easy recording of:

- Transect identifier, location and bearing linked to the Project History Sheet.
- Plant intercept and height with sampling rod.
- Top height of vegetation cover and the species.
- Dune angle at changes in slope.

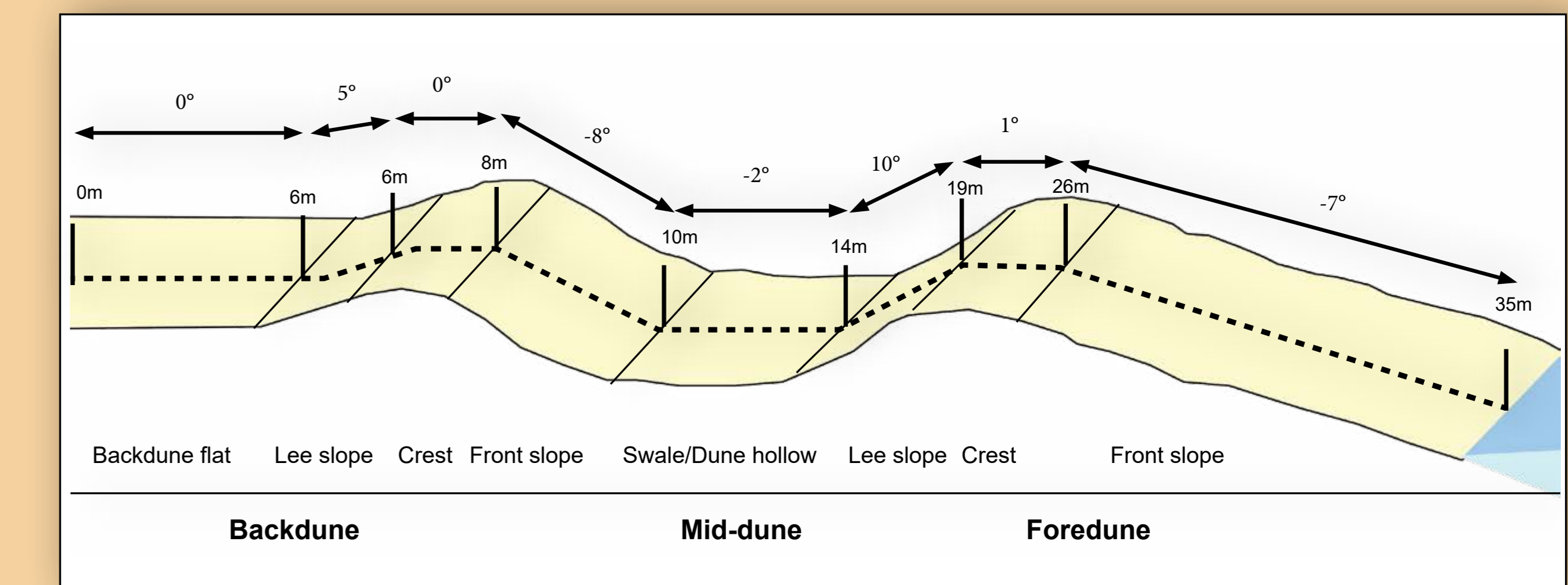


Rapid-Point sampling along a tape placed across the dune along a bearing perpendicular to the coast from a fixed landward marker to high water mark.

MAPPING DUNE PROFILES

Practical techniques are under development to map the dune contour along each transect using mobile devices. One method uses a slope application available on a mobile phone:

- Download free *Extras* application - includes a compass (for recording bearing of transect) and inclinometer for recording slope.
- Record angle between sample points at each major change in dune slope along transect.



Web-based Management of Data

The Coastal Restoration Trust is developing user-friendly online methods for storage, analysis and presentation of data. This will allow for easy interpretation of changes in vegetation cover and species composition in relation to dune morphology.

Protocols for ensuring backups and easy retrieval of field data for subsequent relocation of transects and measurement are essential and will be part of database development.

Contacts and further information:

Coastal Restoration Trust of NZ
Email: info@coastalrestorationtrust.org.nz
Website: www.coastalrestorationtrust.org.nz/

Dr David Bergin
Environmental Restoration Ltd
Email: davidbergin.erl@gmail.com

Jim Dahm
Eco Nomos Ltd
Email: jdahm@xtra.co.nz

Shane Orchard
Waterlink Ltd
Email: s.orchard@waterlink.nz

