

1.1 Sand dune profile

1.1.1 Background

The aim of this activity is to create a height profile of key areas of interest in the sand dune system. These are likely to focus on naturally mobile dunes, blow-outs and managed or rejuvenated areas which have created bare sand. This can then be used to examine how the height profile of the sand dunes is changing over time and how much dynamism there is in the system.

1.1.2 Method

When and where to survey

Sand profile surveys are carried out once a year, in April or May, along the preselected transect routes. It will take roughly two to four hours depending on the length of the transect.

Equipment

Make sure you take with you:

- Handheld GPS unit
- Mobile phone app - transect locations downloaded beforehand
- Compass
- Long tape measure (ideally 50 m or more)
- Ranging poles (exactly the same height)
- Clinometer
- Transect description for the transect you intend to walk
- Sand profile recording form

Navigating to and along the transect

- a) Using your handheld GPS (and mobile phone app), navigate to the first point of the transect, which will be marked by a post. The grid reference can be found on the transect description form, or the start point described on the app.
- b) Use the grid reference for the end of the transect and your compass (and your mobile phone app) to navigate along the transect. For transects ending at the beach, the end point will be on the beach itself.
- c) Use the tape measure to measure the distance between survey locations.
- d) When using the app, use the same phone to record all the data for one transect.

What to record along the transect

- a) At point 1 of the transect, person A should stand holding ranging pole 1 and the clinometer. Make sure you hold the pole vertical and it does not sink into the sand. Enter the grid reference of the

start point on the manual recording form. The app will do this automatically when you register the Start point.

- b) Following the bearing of the transect (i.e. heading towards the end point), person B should take ranging pole 2 to the point at which there is a marked change in the angle of the slope of the dune, or at approximately 50 m distance if no clear change in slope (see Figure 1) - there may be long uniform areas which are beyond convenient sighting distance. At this point, place ranging pole 2 on the ground, again making sure you hold it vertical and that it does not sink into the sand. Enter the grid reference of this point on the recording form. The app will automatically record the grid reference when you click to register the next survey point.
- c) Person A should then use the clinometer to measure the angle of the slope from pole 1 to pole 2. The reading should be taken in the direction of the transect, from the top of pole 1 to the top of pole 2 (see diagram below). If the poles are too tall to sight from the top, then read from the marking on pole 1 that is closest to person A's eye level and the corresponding marking on pole 2 (mark these with bright coloured tape before starting the transect for easy reference). Note down this angle on the recording form, or in the app.
- d) If you find yourself going downhill as you walk along the transect, it should be noted in the recording form or on the app that this was a downhill reading. Enter the angle as a negative number.
- e) Use the tape measure to measure the distance along the ground from pole 1 to pole 2. Note this distance down on the recording form, or in the app.
- f) Person B with pole 2 should then stay where they are and person A should continue walking along the bearing of the transect, handing the clinometer to person A as they pass them.
- g) When they reach another distinct change in the angle of the slope of the dune, they should stop and place ranging pole 1 vertically on the sand and the process of measuring the angle of the slope and the distance between the poles should be repeated, this time with person B taking the clinometer measurements from pole 2 to pole 1, in the direction of the transect.
- h) Repeat this process until you reach the end of the transect.
- i) Notes:
 - On very loose sand on a steep dune, it may be necessary to walk a few metres away from the direct line to avoid disturbing the dune, but track back to the direct line to take the next measurement.

-The end point of the transect for transects leading to the shore should be approximately 5 m seawards from the edge of the mobile dune or embryo dune zone.

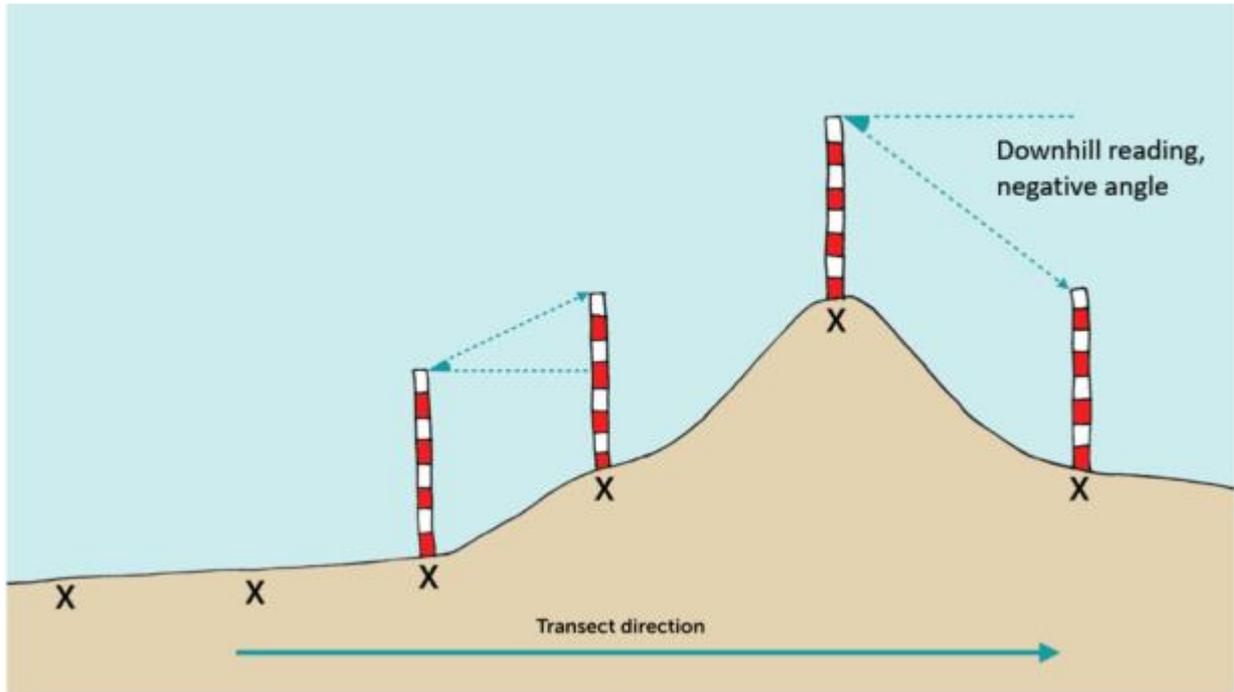


Figure 1. Illustration of how to measure the profile along a sand dune. X marks points at which measurements might be taken.