Vehicle Damage in Sand Dunes

working *together* to care for *our* coast

in partnership with:

Environment Bay of Plenty

Western Bay of Plenty District Council

Tauranga City

Whakatane District

Opotiki District Council

Department of Conservation Te Papa Atawhai

Coast Care BOP Programme

Coast Care Information Brochure Number 7

Introduction

Increasing numbers of four wheel drive vehicles are appearing on roads, beaches and sometimes sand dunes in the Bay of Plenty. Unfortunately vehicles and sand dunes are not compatible because of the destructive impact vehicles have on the vegetation that stabilises sand dune surfaces (see Photo 1). All motor vehicles can kill plants with a single pass, and even the wide flotation tyres of quad bikes crush and destroy plants, as well as native birds, their eggs and nests.

Photo 1

Photo 2

Sand Dune Erosion

Does it matter if a few dune plants are destroyed? The answer is ***yes***, because the coastal zone is very exposed and sand is readily moved by wind. Large scale blowouts often start from small areas of plant disturbance. Exposed sand quickly dries out and is rapidly carried away by wind. On the crest of dunes this erosion process is ongoing, quickly forming elongated depressions or gullies.

As a gully deepens, its sides become over-steep and sand under adjacent plants slides down the slope due to lack of lateral support (see photo 2). In turn this unstable loose sand is also blown away. The roots of adjacent plants consequently are exposed and die, creating the opportunity for even more wind erosion. From small beginnings an extensive erosion feature develops, with damaged areas expanding to 1,000 m^2 *in less than two years* (see photo 3).

Photo 3

As the body of sand sitting above the high water mark is depleted by this process, and sand dunes begin to migrate inland, the profile of the beach changes and the high water

line also moves inland. When coastal erosion reaches this stage, there are serious consequences for adjacent land owners and public infrastructure such as roads and railway lines. Migrating dunes can invade pasture and block access, while a degraded beach profile will drop the bed level of coastal streams, which can lead to secondary effects such as undermining bridge abutments.

Control of Sand Dune Erosion

To control potential erosion of sand dunes the protective vegetation cover must be preserved. Plants on the seaward side of foredunes grow in a particularly harsh environment and trap windblown sand to maintain the dune barrier. They have the ability to tolerate salt water and salt spray, strong winds, low fertility and dryness. Extra plantings of suitable native species, dressings of fertiliser and control of browsing animals all help to maintain these erosion controlling plants.

To keep this vegetation healthy and intact, all vehicles should be kept off the dune crest and front slope facing the sea, where vigorous plant growth is essential to control erosion. For access onto the beach, use an established, stabilised access. If one is not available, please contact your local Coast Care group for assistance to build one, by phoning 0800 368 267.

Public vehicle accessways should have a 'sand ladder' base installed. These not only control erosion, they also prevent vehicles getting stuck in loose sand (see photo 4). Details are in Coast Care brochure Number 8 'Sand ladders - getting you to the beach'.

Photo 4

Stable Vehicle Access

Local beach users co-operating with each other and the district and regional authorities will ensure that the public coastal assets of the Bay of Plenty are maintained in a safe condition for all to enjoy.

Mount Maunganui Surf Casting Club members, for example, are issued with permits from Tauranga District Council for quad bike use along Papamoa East beach. In association with TDC, members installed an accessway for the benefit of beach users and to prevent wind erosion (similar to the Matata access in photo 5). Club members appreciate that protection is in their best interests, and participate in Coast Care activities as well as the policing of inappropriate vehicle use by other beach users.

Dunes damaged by vehicles **will** erode, which could lead to the exclusion of **all** vehicles to prevent further unsustainable damage. It is in vehicle owner's best interests to reduce dune damage, to preserve the foredune complex and therefore their own future recreation opportunities.

Photo 5

Titles in this information series are:

No. 1	Bay of Plenty Coast Care
No. 2	Formation and Functions of Beaches and Sand Dunes
No. 3	Foredune Vegetation
No. 4	Dune Usage
No. 5	Coastal Plants - Pingao
No. 6	Coastal Plants - Spinifex
No. 7	Vehicle Damage in Sand dunes
No. 8	Sand Ladders - Getting you to the Beach
No. 9	Backyard Buffers
No. 10	Coast Care Code

Contact

Prepared by Greg Jenks, Coast Care BOP Programme and with the assistance of Mt. Maunganui Surf Casting Club and Whakatane Surf Casting Club. For further information on Coast Care groups and programmes contact your local District Council or Environment Bay of Plenty's Coast Care Coordinators at:

Telephone: 0800 ENV BOP (368 267)
Facsimile: 0800 ENV FAX (368 329)
Pollution Hotline: 0800 73 83 93
Email: info@envbop.govt.nz
Website: www.envbop.govt.nz
Address: 5 Quay Street, P O Box 364, Whakatane, New Zealand

Coast Care BOP Programme, Environment Bay of Plenty in partnership with Tauranga, Opotiki, Western Bay of Plenty and Whakatane District Councils, and Department of Conservation.

This has been printed on Ambassador Recycled Gloss Art