

Dune restoration takes root in the Bay of Plenty

Bay of Plenty, North Island, NZ

Rebuilding New Zealand's once widespread natural dune systems has for many years proven to be extremely difficult, requiring the re-establishment of native plants in the nutrient-poor sand.

A recent breakthrough in the Bay of Plenty region using Scotts Agroblen has been so effective it has captured the interest of coastal scientists.

The Bay of Plenty coastal environment is of great social, cultural, recreational and economic importance to the region. The fact that it continues to live up to its name is due largely to the efforts of people like Greg Jenks.

Greg is the Regional Co-ordinator for Coast Care Bay of Plenty. Over the past few years, he has co-ordinated the planting and revegetation of vast stretches of coastline through program such as Coast Care Bay of Plenty. This community-based initiative aims to reduce the erosion of sand dunes through the active involvement of residents and beach users concerned with protecting and managing this vulnerable environment.

New Zealand's natural dune systems are suffering as traditionally abundant native sand-binding plants have been in decline due to weeds, farming, fire, coastal reclamation for development, increased recreational use of foredunes, subdivision and sandmining.

Revegetation programs are highly effective in comparison to alternate practices such as the building of artificial sea-walls, which are unable to shift with moving banks of sand and are often undermined or buried. Pingao and spinifex, two naturally occurring plants in this coastal environment, have yielded excellent results in revegetation efforts to date. And the key to this success, Greg asserts, is Scotts Agroblen.

"What we are finding is that this dune restoration is really working as far as protecting the coastal dunes of the Bay of Plenty and other areas. So much so that we've just been in discussion with coastal scientists who are saying that the dune restoration may be all that we need to do to counter the effects of the predicted sea level rises for the next 100 years. It really is a very powerful response we are getting on these plants. A lot is due to the fertiliser treatment that we are giving them. They just don't grow very successfully without a decent dose of fertiliser."

In Greg's work with community groups it's often the children who get to fertilise the plants. The kids are asked to fill 35mm film containers, which hold 30g of Agroblen. The contents of the containers are then placed in the holes before planting. Says Greg, "When the communities and children come back to see the results, they get really excited because the planting has been so successful."

Agroblen

Agroblen uses Scotts controlled release technology to control the release of nutrients. This maximises the amount of nutrients taken up by the plant, enabling early establishment, successful growth and minimising leaching. While Scotts Agroblen was used in the Bay of Plenty replanting, another Scotts complete controlled release fertiliser, Sierrablen Flora, is also ideally suited to landscape planting and maintenance. Sierrablen Flora is safe to apply in a planting hole as its unique coating system controls the release of nutrients over a full growing season and minimizes the potential for the fertiliser to be washed away. Sierrablen Flora is safe for phosphorus sensitive Australian natives.



Greg buys large volumes of Agroblen every year. "We have certainly found it to be a very important part of our success. I am very pleased to extol the virtues of Agroblen because other people have tried all sorts of other materials – and sometimes cheaper materials – and it's often been a disaster for them."

Because sand is so nutrient-poor, Greg recognises the importance of providing plants with the right balance of nutrients over time. "What we are using is 30g of Agroblen and we've found, through experience, that it's ideal for this environment."

Not getting the balance right has proved a big mistake for some. According to Greg, "People have tried many different formulations and different ways of doing things and basically none of them have worked. We are trying to highly recommend to everyone that they use Agroblen because it just works so well."

Greg is excited at the prospect of a conference in February, which will be attended by the New Zealand Minister for Climate Change Issues. Greg is expecting to make some significant announcements regarding the future role of dune restoration in New Zealand and his vision to bring more of the New Zealand coastline back to full health.



1. The dilapidated and non-functional seawall prior to dune restoration
2. Community support during planting of native Spinifex and Pingao
3. The plants growing vigorously, trapping increasing quantities of sand

Native plants reclaim territory with Agroblen

Vegetation plays an essential part in the formation and stabilisation of coastal sand dunes. No introduced plant species have been found to provide equal or better protection than pingao (*Desmoschoenus spiralis*) and spinifex (*Spinifex sericeus*), two native New Zealand dune plants. The latter is also native to Australia and can be found on the New South Wales and Victorian coastlines.

Spinifex and pingao trap wind-blown sand in the frontal dunes, assisting in protection from wave erosion and preventing sand from being lost inland. The above-ground parts of these dune plants act as filters, causing a reduction in the surface speed of sand-carrying wind, resulting in sand being deposited on and around the plants. Cycles of sand deposition and vegetative growth are an important feature of the dune forming process.

Found only in New Zealand, pingao was once the most widespread and successful plant of New Zealand's dunelands. Until re-vegetation efforts began, pingao had declined to such an extent that it had disappeared from many areas.

Although spinifex and pingao are extremely hardy plants, re-establishing them in the nutrient-poor sand of the dune environments is quite difficult. Greg Jenks, Regional Co-ordinator for Coast Care Bay of Plenty, says that many different fertilisers and approaches to planting have been trialed around New Zealand's coastal areas – often with disastrous results. "Scotts Agroblen has been key to the successful re-establishment of thousands of plants along the Bay of Plenty coastline."



Pingao (*Desmoschenus spiralis*)



Spinifex (*Spinifex sericeus*)



Growing success