

# NOTES ON THE VISIT TO NEW ZEALAND DECEMBER 2009

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## **BACKGROUND**

About 25 years ago, on the urging of John Greenfield, New Zealand DSR, as a quarantine requirement, imported some tissue cultured Vetiver from Glenn Allison of MASDAR, UK. Glenn micro-propagated Vetiver in England between 1986 and 1989 for commercial production. This Vetiver came originally from Mauritius to Chiredzi, then to to Chipinga in Zimbabwe, where several French settlers planted it on their cane farms.

Since its introduction, it is interesting to note that this Vetiver has never flowered in New Zealand. Similarly during my trip to East Africa in March 2009, I also found that Vetiver never flower in Ethiopia, Kenya and Tanzania. Therefore the East African Vetiver is most likely also originated from Mauritius. In fact, Tony Tantom also mentione4d that the oldest source of Vetiver in Kenya was from Mauritius, planted by French missionaries near Mombassa early in the 1900s or earlier.

## **EARLIER PLANTING AT THE BAY OF ISLANDS**

This stand of Vetiver was planted by John Greenfield at Kerikeri about 10 years ago for erosion control. It is still growing very vigorously without any maintenance since planting.



More or less at the same time, the below planting was carried out to protect this batter. Note that not only the batter is now completely stabilised, endemic plants also returned to the once barren and highly erodible batter. John also pointed out that the palms in the vetiver planted section of the batter are much bigger than on unprotected section, due to moisture conservation.



## PROMOTION

Application of the Vetiver System in the Bay of Islands region is very effectively promoted by Wendy Hamilton-Gates and Rick Fisher under John Greenfield guidance.

Wendy Hamilton-Gates set up a very successful Vetiver business, including a nursery, landscaping and erosion control service. But most interestingly, to promote the Vetiver System, she displays the results of her works, hands out her own and TVNI green brochure at most Weekend Markets in the region.

Rick Fisher has implemented several large projects on steep slopes, road batters and coastal dune erosion control, which can be seen below.



Wendy Hamilton-Gates and John Greenfield with her promotional display materials



## VETIVER SYSTEM APPLICATIONS

- **Land Stabilisation**
  - *Without Hard Structure:* This project was implemented by Rick Fisher, on a house block on a very steep slope on the beach.



○ ***In Combination with Hard Structure:*** This project was implemented by Wendy Hamilton-Gates on a house block on a very steep slope on the bay. It has been completely stabilised and the owner is extending the planting area to protect a new house being built next door.





- **Landslide rehabilitation**
  - *Steep Slope* Vetiver was planted by Rick Fisher to rehabilitate this landslide on a very steep and highly erodible hill side.



- **Beach Dune:** Under the guidance from John Greenfield, this project was implemented by Rick Fisher on a beach cliff to protect a large residential area. The soil/sand is very erodible under high rainfall and windy conditions. In addition, the strong wind also makes plant establishment very difficult.



The erosion was caused mainly by urban development and tree clearing resulting in uncontrolled runoff to the cliff face. The strategy here is to protect the eroding cliff face from runoff water from the land above by diverting the runoff away from the cliff.





Planting short rows in zigzag pattern to reduce flow velocity on the long slope on the side of the cliff.



- **Road batter stabilisation**



This project was implemented by Rick Fisher on a highly erodible cut batter in Kerikeri. Four years after planting, if not protected by vetiver planting these batters would have collapsed a long time ago. Note only vetiver grew on this extremely poor soil, the land remained raw and bare of vegetation even after 3-4 years



This drain is successfully stabilised by planting vetiver on the sides and in the drain. Note the vetiver was flattened but remained intact on the drain floor.



- **Current erosion control practice**

Current erosion control practice is planting Poplar trees on erodible site. In sharp contrast with VS, this practice is not only ineffective but often is the cause of erosion itself on steep slopes when the trees are toppled under the wet and windy conditions.



## **CONCLUSION AND RECOMMENDATIONS**

1. These projects have clearly shown that VS is not only thriving but also very effective in land stabilisation and erosion control in the northern region of the North Island, (Kerikeri, Latitude 35°13S). The application area can be safely extended to at least Auckland (Latitude 36° 35S) as vetiver has already been shown to thrive there. Furthermore in Australia, vetiver has been successfully established at several centres in Victoria (Hamilton, Latitude 37° 44S and Geelong, Latitude 38° S). All these centres have maritime climate with short summer and long and wet winter.
2. In addition to land stabilisation and erosion control mentioned above, sewage effluent treatment and landfill leachate control can also be applied equally effectively in these regions of New Zealand.