

5. Rehabilitating Namaqualand mines



Diamonds may be forever, but the damage done by mining to the natural environment need not be. This is the philosophy of Dr Peter Carrick, Project Director of the Namaqualand Restoration Initiative, a project funded through SKEP since 2005 that has yielded a breakthrough restoration strategy for mine dumps in Namaqualand.

Mining and prospecting has occurred for eighty years along 400 kilometres of the Namaqualand coastline. Despite the wealth that has been generated, however, little was being done at most mining operations to restore the unique landscapes and ecosystems to their pre-mining state. Dr Carrick, based at the Institute for Plant Conservation at the University of Cape Town, is working to change this. Along with his research colleagues, he has set up a pioneering framework for healing the scarred Namaqualand Coast.

The team identified a strong need to co-ordinate restoration measures and develop effective restoration techniques for the Namaqualand coastal area as a whole, rather than for mining operators to attempt to do this in an ad hoc fashion. "Ecologists are often the first in line to condemn mining companies, but solutions can only be developed if these companies and other stakeholders are engaged properly. We endeavoured to bridge the divide and learn as much as we could from those who have been doing restoration for some time in the region," he says.

This high level of engagement with mining companies has won the Initiative the support of companies like De Beers Namaqualand Mines and Namakwasands. De Beers in particular has been a key contributor to the success of the project. Dr Carrick says that another key success of the Initiative has been the deciphering of the recipe for restoring life to mine dump sites, and in particular, how to enable non-succulent perennial species to establish on restored areas.

The team has developed innovative "restoration packs" that contain seeds, soil ameliorants and equipment for planting – these can be tailored for each site which is to be restored so that they contain the correct balance of species and other conditions for a specific area.

"The first four to five months are the most critical for the seedlings and once they have survived these they tend to make it through the dry summer season," says Dr Carrick. "We have developed techniques to ensure that as many seedlings as possible become adult plants. This target of maximising the yield has led to some novel solutions, such as setting up wind shields on sites to protect the new topsoil and plants from the strong Namaqualand winds and planting the seedlings in large cardboard boxes which provides them with extra protection from the elements." Over 2 500 experimental plots have been planted to date but Dr Carrick adds that there is a huge amount of restoration still to be done.

"This initiative is nearing completion so developing a way to make the restoration system sustainable was critical to us, as was involving the local people in the region in this," he says. To this end over 80 people have been given training to enable them to work on restoration projects of this nature in future and two businesses have already been facilitated to start up and implement the new restoration system for mine companies. Carrick has also set up a new business – Nurture Restore Innovate – to sustain the scientific input in the region and refine the new approaches developed.