North of Cape Town, up the west coast of southern Africa to just beyond the Gariep River, and into the lowlands and over the mountains to the east towards the Great Karoo Basin, lies a vast and amazing land. In the dry summer it is parched and seemingly lifeless with some very weird-looking giant succulents and low fossilized termite mounds (called “heuweltjies” locally) to break the monotony. But following a good spring rain, this blackened land bursts into breathtaking and world-renowned flower displays. On top of this, the variety of plant species in the region is spectacular. Known as the Succulent Karoo Biome, this land is the world’s most diverse semi-arid environment and is listed by the Critical Ecosystem Partnership as one of 34 internationally recognised biodiversity hotspots. It is also a vitally important ecosystem providing food, shelter and water for people and animals as well as the plants for which it is famous.
The Succulent Karoo is a biodiversity hotspot rich in life and variety. In addition to its well known annual flowering displays it also boasts a huge number of geophytes and other tiny succulents, some of which are hidden below the soil surface in white quartz patches and are only visible when flowering in a blaze of colour.

Although most of the plants in the region flower in spring and early winter, there are a few that flower in summer. In fact, the flora of the region has elements of both the summer and winter flowering flora of South Africa, a factor that makes this probably one of the most spectacular flower regions globally. Added to this floral extravaganza is breathtaking scenery, a range of interesting and endemic animals (particularly reptiles and insects), a geological paradise with many mines and a coastal strip that is rich in alluvial diamonds, and some of the oldest communities of people, many of whom still follow aspects of a traditional lifestyle.

The situation calls for a new approach to land management, one that involves robust partnerships between funding agencies (local, national, and international), government, civil society and local residents and is underpinned by good ecological science.

The Succulent Karoo has about 6,300 plant species of which 38% are endemic. The unique feature of the biome is the concentration of dwarf leaf-succulents that occur over its 112,000 km² area. What makes it even more interesting is that globally arid and semi-arid ecosystems with an annual rainfall of less than 400 mm generally have low biodiversity, but because the Succulent Karoo is millions of years old many unique species have been able to evolve over that long time period. Thus the diversity of succulent growth forms is greater here than anywhere else on earth, with some 40% of the world’s 6,000-odd species of succulents occurring in the region.

The Succulent Karoo has a long history of adaptation and evolution that has enabled it to survive for millennia. With these pressures it is facing its greatest adaptation challenge yet. But through initiatives such as reducing domestic stock numbers and changing the way stock are allowed to use the veld, conserving rather than cultivating marginal agricultural land with valuable biodiversity, reducing the number of artificially created water-points, and providing alternative livelihood opportunities for people living off the land, the region and its people can flourish.

...that needs our help
In response to the challenges facing the Succulent Karoo, an innovative programme called the Succulent Karoo Ecosystem Programme (SKEP) has emerged that is showing that the seemingly impossible is in fact possible - by being a bit creative.

SKEP champions a new and adapted model of conservation that integrates high-level scientific expertise with socio-economic and institutional concerns. It is funded by the Critical Ecosystem Partnership Fund (CEPF), a joint initiative of l’Agence Française de Développement, Conservation International, the Global Environment Facility, the Government of Japan, the MacArthur Foundation and the World Bank, and led by Conservation International’s South African Hotspots programme.

From the start, SKEP took a collaborative approach and set out to draw all the accumulated knowledge and existing conservation projects for the region into a co-ordinated conservation response that would not only serve to protect this unique biodiversity hotspot, but would also serve the interests of the local population. With its emphasis squarely on human well-being, the acronym “SKEP” means “to serve” in Afrikaans, the most commonly spoken language in the region.

SKEP identifies sustainable development as the key to successful biodiversity conservation. By changing people’s perception of conservation, it has worked to develop conservation as a land use in its own right, rather than instead of land use. The programme’s vision is that the people of the Succulent Karoo take ownership of and enjoy their living landscape in a way that maintains biodiversity and improves livelihoods, now and into perpetuity.

To ensure that the programme was heading in the right direction, a one year planning process, initiated in 2001, gathered information on biodiversity and land use pressures in the region, and applied systematic conservation planning methods to identify priorities for conservation and investment. More than 60 scientific organisations as well as 400 local stakeholders and “champions” representing government, academics, non-governmental organisations (NGOs), private sector interests and local communities took part in this planning process.

The programme is also in tune with national priorities as the SKEP partnership has endorsed the principles enshrined in the National Environmental Management Act of 1998 and the Biodiversity Act of 2004.
Each year a splendid tapestry unfolds across the Namaqua landscape – a diversity of flora overcome the harsh semi-arid conditions to grow and show their true colours to the world.

Like these indigenous flowers, Priscilla Magerman – a Senior People and Conservation Practitioner at the Namaqua National Park – has spent her entire life in Namaqualand and much of her youth facing a myriad of challenges. Overcoming these odds has not been easy, but with a little help from SKEP, which provided her with an opportunity to grow and learn, Magerman has today developed into an inspirational, vibrant force in the region.

Magerman, who grew up in the town of Hondeklip Bay, says her community like many others in the region has for many years been afflicted by poverty and a lack of opportunities.

“There are today few employment opportunities and I too felt this as a young person in this town. When you sit in a small town with no opportunities it is easy to get stuck. With the lack of opportunities, there are lots of social problems in the region – unemployment stands at more than 70%, alcohol abuse is a problem as is drug use, and many young girls are also falling pregnant. Many of our youth simply don’t have the opportunity to find a path.”

Magerman could have easily become one of those young people, but thanks to her desire to learn and make a difference she has triumphed to become an inspiration to her community. “It was in my early twenties, that I learnt about conservation projects and was given an opportunity to work on a handful of new research initiatives in the area. At the time I didn’t know anything about conservation or national parks – I did have a love of the outdoors and the landscape here, but never at all thought that there was a career that could grow from this,” she says.

One of the first projects she had the chance to work on was SKEP and she was recruited by Conservation International as a champion’s assistant during the initiative’s foundation phase. “During the SKEP work I got a real eye-opener on the environment around me and about conservation. I had the opportunity to learn and travel, to see the big picture of what is happening in the region and meet a lot of people. Working on SKEP expanded my horizons hugely and opened doors to possibilities I had not even dreamt of.”

One of these doors came in the form of SANParks who recognised her talents and gave her a one year contract to join them in 2003 as a Social Ecologist at the Namaqua National Park. The contract was renewed for two years after that and by 2007 she had become a permanent employee as a Conservation Officer – the position she currently holds.

“I have developed a passion for conservation – it has become a deep way to express my love of the landscape here,” she says.

Uplifting her community and the other communities of the region is also a key priority for Magerman. She has five key elements to her role – economic empowerment, environmental education, youth development, community facilitation and cultural heritage management – and much of her time is spent in communities doing the work that fulfils both her work duties and her personal goals. She is optimistic about the future of the region and that development challenges can be overcome.

“There is still much to be done to develop the Namaqua Park and there will be a lot of opportunities in the future for people in this area. What is exciting is that we have just added another 38 000 hectares given to this area. What is exciting is that we have just added another 38 000 hectares given to us by De Beers – bringing the size to around 144 000 hectares – currently South Africa’s fifth largest national park. People will have many more opportunities to make something of themselves, including through the growing tourism industry.”
At the end of the SKEP planning process, a 20-Year Strategy was drawn up with a comprehensive set of actions, targeting conservation, farming, mining, tourism, local government, education and law enforcement. These actions aim to achieve conservation targets by addressing constraints and maximising opportunities in key priority areas.

The strategy is informed by four core objectives which are to:
- Identify a hierarchy of biodiversity priority areas.
- Build on existing initiatives (socio-political issues).
- Expand human resource capacity.
- Secure institutional and governmental support.

THE KEY PRIORITY AREAS

At the start of the planning phase, the technical team was confronted with a planning domain covering a large area with differing land use patterns and socio-economic issues, as well as a variety of vegetation patterns and types. To deal with these differences, the team divided the area into four sub-regions and further into eight geographical priority areas. A ninth area, the Sperregebiet in Namibia, falls under a Namibian co-ordination unit which collaborates with SKEP in South Africa on the sustainable management and development of the region. Each of these areas is special, with special land use patterns, socio-economic needs and conservation strategies, but each of them is connected to the whole. One of the criteria for their being chosen was that they form corridors where fauna and flora can migrate within the Succulent Karoo as well as connecting to the other biomes through vital transitional areas. Experts consider these zones crucial for continued speciation and resilience to climate change.
SKEP key priority areas in South Africa

Experts consider these zones crucial for continued speciation and resilience to climate change.

1 GREATER RICHTERSVELD
Key Facts
Highest succulent and lichen diversity in the world.
Flagship species
Bastard Quiver Tree; Aloe pectinata; Hartmann’s Mountain Zebra; Brown Hyena.
Well known places
Richtersveld National Park; The Gariep River; and RAMSAR-designated wetland at the Gariep River mouth.
Pressures
Overgrazing and diamond mining scars; illegal harvesting and poaching; off-road vehicles.

2 BUSHMANLAND INSELBERGS
Key Facts
Refuge for plants and animals in a time of climate change. Spectacularly diverse dwarf succulent shrublands.
Flagship species
Lithops abrothrix; The Red Lark; Burger’s Onion, Conophytum burgeri.
Famous places
Gamsberg Inselberg and Pella.
Pressures
Mining, overgrazing.

3 CENTRAL NAMAQUALAND COAST
Key facts
30 km of relatively pristine coastline. Site of the new Namaqua Coastal Park.
Flagship species
Bababoudjies, Argyroderma; Greater Kestrel and Conophytum uniflorum.
Famous places
Quartz patches at Soebatsfontein Succulent Reserve.
Pressures
Diamond mining.

4 NAMAQUALAND (KAMIESBERG) UPLANDS
Key facts
Highest mountains in Namaqualand; spring flowers; transitional zones between succulent and fynbos habitats.
Flagship species
Dimorphotheca sinuata, the Namaqualand daisy; Long tongue flies; Oil-collecting bees; Klipspringer; Leopard.
Famous places
The Rooiberg Peaks Trail; Historic communal grazing towns of Leliefontein and Tweerivier.
Pressures
Agriculture; overgrazing.

5 KNERSVLAKTE
Key facts
Fields of white quartz pebbles with miniature succulents.
Flagship species
The bababoudjies, Argyroderma; Greater Kestrel and Conophytum uniflorum.
Famous places
Vanrhynsdorp; Rooiberg hills; Sout River Canyon; Quaggaskop private nature reserve.
Pressures
Small-scale mining for gypsum, diamonds and limestone/marble; overgrazing; illegal harvesting of rare plants.

6 HANTAM/TANQUA/ROGGEVELD
Key facts
Interface between the Renosterveld and Succulent Karoo.
Flagship species
Sparaxis elegans and Sparaxis tricolor; Black Rhinoceros; Clanwilliam sandfish.
Famous places
Calvinia; Bokkeveld and Roggeveld escarpments; Tanqua Karoo National Park; Hantam National Botanical Garden.
Pressures
Agriculture.

7 CENTRAL LITTLE KAROO
Key facts
A succulent desert.
Flagship species
Drosanthemum bicolor, tweekleurporseleinbont; Hoodia pilifera; Gloveria integrifolia; giant spikethorn; Disa schlechteriana; Riverine Rabbit, the 13th most endangered mammal in the world.
Famous places
Langeberg and Swartberg mountain ranges.
Pressures
Agriculture; Ostrich ranching.

8 CENTRAL BREEDER RIVER VALLEY (SOUTHERN KAROO)
Key facts
Fynbos, Succulent Karoo and Renosterveld meet.
Flagship species
Green iris, Worcester Iris; Drosanthemum bicolor; tweekleurporseleinbont; Hoodia pilifera; Gloveria integrifolia; giant spikethorn; Disa schlechteriana; Riverine Rabbit, the 13th most endangered mammal in the world.
Famous places
Langeberg and Swartberg mountain ranges.
Pressures
Agriculture; Ostrich ranching.
Five years of achievement

Working within the three tenets of sustainability – environment, economy and society – SKEP has been successful in its first five years in creating a framework (using innovative strategies, drawing on sound advice and modern technology, and creating capacity) for a sustainable future for the area.

The Succulent Karoo Ecosystem Programme reached a key five-year milestone in 2008. Guided by the 20-year strategy and with vital funding from the CEPF, projects and scientific research covering land use, training and education, and targeting different groups – from local communal farmers to the largest mining company in the world – have been successfully rolled out over the last five years under the SKEP banner.

By forging partnerships (public-private-communal-corporate) crucial groundwork has been laid for the expansion of protected areas and the creation of effective conservation areas. Local capacity has been strengthened and awareness of the importance of the Succulent Karoo hotspot has been raised at home and internationally. Working within the three tenets of sustainability – environment, economy and society – SKEP has been successful in its first five years in creating a framework (using innovative strategies, drawing on sound advice and modern technology, and creating capacity) for a sustainable future for the area.

Half a million hectares better managed

An additional 541 984 hectares of land in the region is now under biodiversity-friendly land use control – over and above the formal protected areas. This has been achieved through a mixture of stewardship agreements that enable landowners to set aside land for conservation or to use their land sustainably. The concept of ecosystem services is also gaining ground in the region. Working within the three tenets of sustainability – environment, economy and society – SKEP has been successful in its first five years in creating a framework (using innovative strategies, drawing on sound advice and modern technology, and creating capacity) for a sustainable future for the area.

A number of projects targeting species in the Succulent Karoo hotspot have advanced scientific knowledge on, amongst others, the red-listed grass (Secale africanum), the tent tortoise (Plamobates tentorius), the Kokerboom (Aloe dichotoma), the porcupine (Hystrix afericculus) and the leopard (Panthera p. pardus). Other projects have looked at larger taxonomic groups – such as insects – with one even resulting in the description of new genera and species.

New discoveries made

Conservation jobs created

Close to 400 local short- to medium-term jobs were created in the first five years of SKEP, more than half of them biodiversity-based jobs in the tourism sector. A small grants facility called SKEPPIES was launched in 2006 and has made R4.8 million of funding available to projects generating both conservation and socio-economic benefits. The fund makes grants of up to R140 000 to small, income-generating projects. SKEPPIES receives its funding from the Development Bank of South Africa (DBSA) and the Critical Ecosystem Partnership Fund (CEPF) and is led by Conservation International. It takes a grassroots approach to development and provides technical assistance and advice to start-up businesses to help develop sustainable business models and give them every chance of succeeding.

Social capital strengthened

Civil society involvement in biodiversity conservation in the Succulent Karoo has increased significantly, growing from fewer than five organisations in 2003 to over 20 by 2008. Strengthening beneficial networks between government and other roleplayers such as local communities has led to better knowledge exchange and the achievement of common goals.

State support secured

SKEP has been formally institutionalized as a bioregional programme within the South African National Biodiversity Institute (SANBI) which will enable it to achieve systemic change in the long term. In addition, a South African Implementation Committee consisting of implementation partners who provide input and guidance on SKEP’s progress has been established.

More support mobilised

SKEP has initiated extensive stakeholder engagement with both government and non-governmental organisations, and mobilised environmental education and awareness campaigns across South Africa that have catalysed significant interest in the Succulent Karoo. In addition, the creation of conservation champions has resulted in new wave of people with good conservation knowledge and skills in the region.

Industry brought on board

SKEP has worked hard to mainstream biodiversity into industry practices particularly mining, which plays a key role in the region. A newly formed company engages mine operators by bringing restoration expertise and scientific knowledge to develop effective restoration methods. Best practice guidelines for the potatoes, rooibos, wine and 4X4 industries have been developed and are under way for the ostrich industry. In the Klein Karoo, guidelines for the game industry have been developed.
History has shown that when people clash with nature, both sides invariably end up losing. The conflict between farmers and wildlife is an ancient example of this tension. In South Africa, farmers lose precious livestock to predators like leopards while, in return, countless indigenous animals get killed or damaged as farmers seek to protect their livelihoods.

Not happy to stand by and watch the battle rage on, the Namaqua National Park, with funding from SKEPPIES – SKEP’s small grants facility – has initiated a project which illustrates that when people work with rather than against nature, everyone benefits. Bernard van Lente, Park Manager at the Namaqua National Park, and his wife Elanza have together spearheaded a scheme to introduce the Anatolian shepherd dog to farmers in the Kamiesberg District as an alternative to trapping to protect farmer’s livestock and reduce the impact of farming on indigenous wildlife. After three years of testing the project has shown that it can be a major success.

The dogs work like magic,” says Van Lente. “Farmers with Anatolian dogs have seen livestock losses drop from around 100 per year to about ten and many report an increase of wild animals on and around their farms.” Currently there are eight Anatolian dogs living and working on farms in the area, all of which were given to the farmers by the Namaqua National Park, free of charge, with the aid of funding from SKEPPIES over the past three years. With each puppy having a market value of R3000 – R4000, this is no small gift. Van Lente maintains that the Anatolian breed – which originates from Turkey – is perfectly suited to its job. “At six weeks old the puppies are put with the sheep or goats and grow up with the flock. They have a strong protective instinct but unlike the other dogs that local farmers use, they are not good hunters so do not go out and kill everything in sight.”

The Park has initiated its own breeding programme and currently has four breeding pairs that will be ready for mating very soon – it is hoped that this will reduce the costs of the project and increase the number of dogs in the area, making the project more sustainable in the long term.

Van Lente says the benefits of the project have been twofold. “Our primary intention was to protect wildlife but the farmers are benefitting too,” he says. “Farmers target jackals and caracals but we find that countless other species – like honey badgers, aardvark and tortoises – get killed in their traps as well. There is a big difference between the numbers of these animals found inside the park and outside it, which shows that humans are having a negative impact on indigenous wildlife.

“With these dogs we hope to see a dramatic reversal of the situation,” explains Van Lente. “The farmers are also extremely proud of their dogs and look after them very well, they are beautiful animals and more and more farmers are asking for them – which shows that they themselves now see the benefits of farming in harmony with nature.”
Better industry practices

SKEP has worked hard to mainstream biodiversity into industry practices – particularly in the mining industry which plays a key role in the region.

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 2500 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.
In the small town of Kharkams in the Northern Cape lives a talented man called Pieter van Niekerk who, with the help of SKEP, has managed to build up a business that is boosting interest in the sleepy town, earning him an income and putting the alien doringboom trees of the area to good use.

Van Niekerk’s business – Kharkams Wood Crafters – stands as a great example of the ecologically-based enterprise that SKEP promotes. It also illustrates how small-town skills can be honed to create big-city products with just a bit of creative thinking and the right level of support.

Surprisingly, Kharkams Wood Crafters is best known for a creation not usually associated with rural South Africa or even wood: memory sticks.

The memory stick concept was introduced to van Niekerk by Leonard Shapiro of Craft SouthAfrica. Shapiro is a crafts enterprise developer who visited the area on a mandate from SKEPPIES, SKEP’s small grants facility, in 2007. With a background in fine arts as well as the social sciences, Shapiro was asked to identify which skills the town’s residents had to offer, and how they might be adapted into a sustainable business model.

“I was asked to come up with a product idea that had a conservational element as well as an enterprise element,” says Shapiro. “At that point in time I was hooked on the idea of combining high-technology with traditional craftsmanship and that is why this memory stick was introduced.

“Often you see these beautiful ethnic crafts but they are not adapted to the needs of today’s market,” he adds.

It was with this in mind that Shapiro walked through the streets of a nearby town called Kamieskroon asking to be directed to any talented woodworkers in the area. He was soon told about Van Niekerk living just 20 kilometres away with a fully functional workshop ready to be put to good use.

The two met and Van Niekerk was immediately taken with the opportunity presented to him. Shapiro helped with training, sourcing the needed materials and a bit of marketing to help get the business off the ground. Soon Kharkams Wood Crafters was employing a total of five men and producing orders for the Department of Water Affairs and Forestry, SANParks, Conservation International and a ministerial conference in the area, amongst others.

Although the product was introduced by Shapiro, Van Niekerk greatly improved the technical idea of how to insert the actual USB mechanism into the wood. He has also refined the original design and created two new versions of his own, which is where his real strength lies – sitting alone in his workshop working with the natural material that he loves.

In addition to the memory sticks, the business continues to produce more traditional ‘low-tech’ products like the wooden salad forks and spoons that Van Niekerk has been producing for years – and is proving that unwanted alien vegetation does have a commercial value when paired with the spirit of enterprise.

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Close on 400 local short- to medium-term jobs were created in the first five years of SKEP, more than half of them biodiversity-based jobs in the tourism sector. In addition, SKEPPIES, SKEP’s small grants facility, launched in 2006, has made R4.8million of funding available to projects generating both conservation and socio-economic benefits.

Improved livelihoods

CASE STUDY When high tech meets traditional
An astonishing world of previously unknown and rare insects has been discovered by a team of SKEP project scientists working in the Kamiesberg Uplands, a remote, magnificent and mountainous corner of Namaqualand.

A total of 164 species were recorded in the 12 month study— including over 20 new species, some of which are highly significant as they are similar to their ancestors of hundreds of millions of years ago. It is one of the most exciting finds in the region and has researchers hopping to return to this Garden of Eden.

Jonathan Colville of the University of Cape Town’s Zoology Department and Plant Conservation Unit, one of the lead researchers on the project, says the find highlights the critical need to address the conservation status of Kamiesberg and Succulent Karoo insects, which is very poor at present. Some of the key discoveries that the study made include:

### Monkeys of the Kamiesberg

Brightly coloured and charismatic Monkey Beetles are one of the most abundant and important pollinators in the region and males, with their large claw-like hind legs, can be found tumbling on pollen-rich flowers like sumo wrestlers trying to toss each other from the ring. A remarkable 17 new species were found and one species, last seen 80 years ago, was re-discovered. One of the most eye-catching new finds is a beetle covered with iridescent pink scales and thick white hairs. This shimmering gem is a high altitude fynbos specialist and is only found on the Rooiberg Mountain, the highest peak in the area.

### Three new species of Ribbon-wing Lacewings

Unlike their bustling, bulbous neighbours the Monkey Beetle, Lacewings are graceful, delicate ballerinas of Namaqualand and of extreme rarity. With their uniquely elongated thread-like hind wings, they are remarkable but mysterious creatures. Very little is known about the biology of many species of Lacewings, with the larvae of most species completely unknown. Colville says Ribbon-wing Lacewings have the potential to be a conservation flagship species for the Kamiesberg Uplands, and the Succulent Karoo in general, due to their beauty and rarity.

### A new population of Southern Stoneflies

The finding of a new species of Southern Stoneflies in the Kamiesberg Uplands reflects a substantial range extension for this group and is a significant discovery. Stoneflies belong to a small primitive, aquatic order of insects and are restricted to cool, well oxygenated, un-polluted mountain streams. Colville says they are a vulnerable insect species due to their specific habitat needs.

In addition to unearthing new species, the research also turned up some interesting new data on the way insects are ecologically linked to the flora and fauna in their habitat, and some insight into their unusual lifestyles. Some species, for example, have larvae that live in symbiotic association with heuweltjies (termite mounds) or dung middens, while some adult beetles only appear intermittently for just a few days, often in response to atypical rainfall events such as large summer thundershowers.

Colville says the rich diversity of insects encountered by the researchers and the intricate and critical relationships between organisms was the key take-away from the project. “This must inform conservation efforts in the future,” he says.
The ability of SKEP to realize its vision depends on striking a balance between conservation and sustainable livelihoods. The programme aims to continue to create awareness of and facilitate support for alternative economic opportunities and promote opportunities for ecosystem services.

While much has been achieved in the first five years of SKEP, more still needs to be done to make sure that this vital, sensitive region, and its people, are able to survive – and indeed thrive – in the face of mounting pressures. The next phase of SKEP needs to see stronger links with key government departments and programmes with a focus on strengthening local government capacity. Additional skills training and environmental education are needed to improve scientific leadership and knowledge management. With a greater understanding of SKEP’s strengths and weaknesses and five year’s of experience in what works and what does not – the programme aims to address eight strategic priorities over the next five years (2009-2014).

SKEP’S EIGHT STRATEGIC PRIORITIES FOR THE NEXT FIVE YEARS

1. Securing land in priority areas
   The 2014 target for the formal protection of high value biodiversity land within the SKEP priority areas is 8.5%. To this end, SKEP will continue to engage with agencies such as WWF South Africa (through the Leslie Hill Succulent Karoo Trust), SANParks, CapeNature and the Northern Cape Government’s Department of Tourism, Environment and Conservation, as well as communal and commercial farmers. SKEP will also continue to facilitate stewardship agreements that demonstrate that proper veld management protects the ecosystem services that provide a safety net for poor and vulnerable communities.

2. Expanding the partnership
   Harnessing government programmes that could be targeted towards biodiversity goals such as rehabilitation, and building links with key departments (for example Agriculture, Land Affairs and Minerals and Energy) will be vital in ensuring the long-term sustainability of any conservation undertaking in the Succulent Karoo. A wider funding base and additional volunteers are also needed.

3. Linking livelihoods and biodiversity
   The ability of SKEP to realize its vision depends on striking a balance between conservation and sustainable livelihoods. The programme will continue to identify, create awareness of and facilitate support for alternative, biodiversity friendly economic opportunities and research ecosystem services. It will also seek to expand and institutionalize the SKEPPIES small grants facility to enable the development of additional micro-enterprises with a biodiversity benefit.

4. Building local government capacity
   The environment recently became a sixth focal area within which local government in South Africa is to align its work. SKEP must take this opportunity to support local government structures by making them aware of the resources available and helping to build capacity – particularly in planning – at this level. The programme aims to ensure that by 2014 all municipalities in the planning domain have prioritized SKEP in their Integrated Development Plans and will implement specific projects in collaboration with all relevant stakeholders.

5. Strengthening linkages between natural and social science and management in the Succulent Karoo
   The programme aims to review the science behind SKEP through a forum of scientists. In addition, scientific information needs to be packaged in a more accessible form to relevant stakeholders.

6. Capitalising on climate change and renewable energy
   Models of global climate change predict that the Succulent Karoo will mostly get hotter and drier in the future. This fact, superimposed on an already over utilised and very fragmented landscape, threatens species survival and ecosystem services like grazing and water provision. Livelihoods based on the land are particularly vulnerable. SKEP can enhance the resilience of both people and biodiversity to climate change impacts by ensuring that there is a scientific understanding of these trends in the Succulent Karoo, and supporting adaptation strategies among its rural people that will conserve water and promote sustainable land use. In this context, renewable solar and wind energy may offer significant potential as an alternative land use that can create new investment and employment opportunities. Again, SKEP needs to involve local business, community and government and ensure its projects meet international Climate, Community and Biodiversity (CCB) Standards.

7. Involving the mining sector
   While promising progress has been made with the mining industry, in the coming years these efforts will be scaled up. By 2014 SKEP seeks to have a mining biodiversity standard for mine rehabilitation in place and a system of independent environmental auditing up and running.

8. Continuing to raise awareness
   Thanks to extensive involvement of local stakeholders and members of the academic and scientific communities in the first phase of SKEP, there is a good awareness of the programme and its objectives. However, at a national level, recognition of the region and its importance needs to be further raised.

What lies ahead?

The ability of SKEP to realize its vision depends on striking a balance between conservation and sustainable livelihoods. The programme aims to continue to create awareness of and facilitate support for alternative economic opportunities and promote opportunities for ecosystem services.
Like the region it seeks to serve, SKEP is a living and changing entity. Its strategy and priority actions have evolved over time and will continue to do so as the programme learns and discovers new things.

In the years ahead SKEP will seek to expand its network in the Succulent Karoo so that an ever greater impact on the region can be made. There is still much to achieve and there will be a continued need for scientific and technological input, regular monitoring programmes, and education, training and empowerment. Sufficient and sustainable funding and support from the highest levels must be generated if this valuable, arid biodiversity hotspot is to be protected and used to the full. Let us not lose the momentum!

Join our journey...

The namaqua speckled padloper - the world’s smallest tortoise - is endemic to the Succulent Karoo.

Photo: John Manning