# Darwin Initiative for the Survival of Species

# Project: 14012

## Iimbovane Outreach Project: Exploring South African Biodiversity and Change

## Annual Report (Year 2)

## (for the period April 2006 - April 2007)

## Contents:

# *Darwin Initiative Annual Report*

## Darwin Project Information

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| Project Ref Number | 14012 |
| Project Title | Iimbovane Outreach Project: Exploring South African Biodiversity and Change |
| Country(ies) | United Kingdom and South Africa |
| UK Contract Holder Institution | Biodiversity and Macroecology Group – University of Sheffield (UoS) |
| UK Partner Institution(s) | Not applicable |
| Host country Partner Institution(s) | DST-NRF Centre of Excellence for Invasion Biology (C·I·B) – University of Stellenbosch |
| Darwin Grant Value | £286,892 |
| Start/End dates of Project | 1 October 2005 – 30 September 2008 |
| Reporting period (1 Apr 200x to 31 Mar 200y) and annual report number (1,2,3..) | Reporting Period: 1 April 2006 – 31 March 2007, Annual Report No 2. |
| Project Leader Name | Professor Kevin J. Gaston |
| Project website | www.sun.ac.za/iimbovane |
| Author(s), date | Kirsten Mahood, Brigitte Braschler, Natasha Kruger, Sue Shaw, Steven Chown and Kevin Gaston |

## 1. Project Background

The Iimbovane project is implementing a biodiversity monitoring programme that improves teacher and learner knowledge of spatial patterns of biodiversity and ecosystem functioning, and their change over time. The project is based within the Western Cape Province (WCP) of South Africa and involves Grade 10 life science learners of 13 schools (initially 10 schools in the first year) selected for the project (Annex 3). In conjunction with the schools, Iimbovane project team members collect ants in additional pristine sites to examine ant diversity patterns over large spatial and temporal scales, and their likely mechanistic underpinnings.

South Africa's second report to the Convention on Biological Diversity states that invertebrate monitoring and inventorying is poorly developed for this country. In addition, the Framework Convention on Climate Change Country Studies Programme for South Africa identified the lack of knowledge on how species are distributed in the matrix and how these distributions are changing, as major constraints. In South Africa, there is virtually no annual monitoring of biodiversity, with the exception of water bird counts and smaller-scale monitoring of selected taxa within individual protected areas. The Iimbovane project is making a significant

contribution to establishing an inventory and monitoring programme for an important group of insects (ants), which are also widely agreed to be excellent indicators of the effects of landscape change. This is especially important in the fynbos biome of South Africa, where approximately 20% of the 6500 strictly fynbos plant species rely on ant-assisted seed dispersal.

This project addresses the problem of teacher capacity within the field of biodiversity, while simultaneously addressing the issue of lack of biodiversity knowledge within the Cape Floristic Region.

## 2. Project Partnerships

The partnership between the UoS and C·I·B is working well, with assistance coming from both partners. Dr. Braschler (UoS) remained in South Africa for most of the reporting period (longer than originally planned). Dr. Braschler and Prof. Gaston (the UoS principal investigator) remain in touch by regular e-mail. The PIs are in weekly contact via e-mail and by voice over internet discussions. Dr. Shaw and Ms. Mahood are in regular contact regarding administrative issues relating to the project, ensuring sound project management.

The partnership with Western Cape Education Department (WCED) continues successfully. The WCED has requested that the Iimbovane project investigate the possibility of rolling out the project to all schools in the Western Cape. The Iimbovane team is often requested to attend activities at Iimbovane schools so that they are more closely included in the schools activities. This is an indication of the buy-in from the schools and their enthusiasm for the project and the Iimbovane team members. The Iimbovane team and WCED have started discussions regarding a Darwin exit strategy and to investigate project expansion.

Iimbovane has five sampling sites in four of the South African National Parks (SANParks). Co-operation with SANParks has been ongoing. Students working within SANParks have accompanied the Iimbovane team on sampling efforts. Additionally, Coastcare (a poverty alleviation programme run by SANParks) has partnered the Iimbovane project, and a select group of Coastcare workers assist with sampling in Wilderness National Park. This group will receive on-the-job training from the Iimbovane team in data collection. The Iimbovane team will give talks to the larger Coastcare team on the relevance and importance of biodiversity. This will directly go to assisting the country in meeting the Convention on Biological Diversity Article 13: Public Awareness.

Three nature reserves in which the Iimbovane project is implemented are managed by the City of Cape Town. The relationship with the City of Cape Town has not developed as quickly as with other reserves, but it is developing well. Moreover, in March 2007 we were approached by the outreach officer of Wolfgat Nature Reserve asking to become more involved and to find out more about the Iimbovane project. Four students working in these reserves have assisted the Iimbovane team with sampling events over the last year.

Links with BIOTA (http://www.biotaafrica.org/1024/frames/biota-africa.htm) have remained tentative. The Iimbovane project uses two sites that are part of the BIOTA project. It is hoped that in the next sampling season the Iimbovane project will have more interaction with this group.

Collaboration with other researchers within the C·I·B who are undertaking ant biodiversity studies is ongoing. The anticipated joint ant reference collection (see first annual report to the Darwin Initiative) to be used by researchers in the WCP is in preparation, but the Iimbovane staff continue to provide advice on and identifications to other researchers.

Collaboration with the South African Institute for Aquatic Biodiversity (SAIAB) was established in December 2006. Although the Iimbovane project and SAIAB focus on terrestrial and aquatic environments, respectively, there are many overlapping activities, as SAIAB has a very strong outreach component. SAIAB outreach at school level is, however, still in the development stage. The SAIAB outreach officer (Mr. B. Magajana) for this section joined the Iimbovane team on part of their implementation visits to schools to learn first-hand about how the project

handles this phase. The SAIAB outreach projects address the Convention on Biological Diversity Article 13: Public Education & Awareness.

## 3. Project progress

### 3.1 Progress in carrying out project activities

**Teacher training workshops and schools implementation**

The teacher training workshop, originally scheduled for April 2006, took place in January 2006 (see first report to Darwin). This ensured that teachers taking part in the project could attend the training workshop before the start of the school year. The workshop was well attended by the schools taking part in the project and was very successful.

The first school implementation visit, originally scheduled for June 2006, took place in March 2006 (see first report to Darwin).

In May and June 2006 each of the ten schools received a Leica EZ4 stereo-microscope, an IBM laptop, their reference collection, and the image-based ant identification guide and key (electronic and hard-copy) developed by the project and funded by the Darwin Initiative. The impact of the microscopes and reference collections was immediate, with the excitement learners experienced when viewing ants under the microscope for the first time clearly visible. The Memorandum of Understanding which formalised the relationship between the schools and Stellenbosch University, as the South African project partner, was signed by the principal of each school on this occasion.

The handover of data from the March 2006 sampling season took place during August. Teachers at many of the schools had expressed a need for the Iimbovane team to give additional lessons on data handling at the same time as the data handover. A worksheet on data handling that incorporated data from the schools and their control sites was prepared by the Iimbovane team (Annex 4). These lessons were extremely well received and the learners were able to perform the calculations required, including some basic biodiversity indices. At this time learners also received lessons on the value of biodiversity and discussed some of the threats to biodiversity, including climate change and land-use change.

Equipment and data handover sessions were good opportunities to remain in contact with the teachers. “Keeping in touch” is an important part of the project and has helped to build and maintain relationships with teachers, giving the project a certain amount of flexibility within schools.

In November teachers participated in a reflections workshop on the first year of the Iimbovane project. The workshop was well attended and included a summary of the feedback forms teachers had completed. Teachers were very happy with the way the project had run in its first year; were grateful for the assistance they received and were looking forward to the second year of the project. Teachers were pleased to have received the resources provided by the project with the microscopes seen as a highlight of the year. Teachers indicated that they used the background information and materials provided by the Iimbovane project in their teaching.

In December, after discussion with WCED, it was determined that the Iimbovane team had capacity to include three additional schools: Swellendam Secondary School (Swellendam), Gerard du Plessis Secondary School (Riversdale) and Vusisizwe Secondary School (Worcester). Each school (Annex 3) links to an existing control site within the project.

The second teacher training workshop, scheduled for April 2007, was brought forward, and ran over two days in January 2007 at the C·I·B in Stellenbosch. The first day saw all new teachers (whether at new or current schools) receive training on how to implement the Iimbovane project in their school and how and when the Iimbovane team would work with the learners. The first day was based on the first teacher training workshop (January 2006). The training provided on

the second day was for all teachers. Training included a practical session on how to mount ants, and more detailed training on handling and interpreting project data. This included data extraction and how to perform basic calculations in a spreadsheet, addressing teachers' needs to develop more tasks learners could perform with data from the project. Different indices used in the project were explained, as well as how these could be interpreted. Graph drawing formed part of the training, as learners could be assessed on these types of exercises. The day ended with a round table discussion on additional activities the teachers had carried out using the Iimbovane project and how to incorporate Iimbovane into other subjects at the schools (especially mathematics, information technology and languages) helping to lighten the workload of teachers and learners.

**Sampling, database, reference collections and keys**

From April to June the Iimbovane team spent much time sorting and identifying ants collected during the March 2006 sampling period. In summary, 26,664 ants were caught, belonging to 25 genera and approximately 89 species. The final number of species is still to be confirmed as many ants are currently only assigned to morphospecies. A preliminary full ant reference collection was developed using ants from the March 2006 sampling season. The reference collection was taken to the Iziko Museum in Cape Town, where Dr. H. Robinson (ant taxonomist) verified the identification of some of the morphospecies collected by this stage.

During this time Dr. Braschler also developed an electronic image-based ant identification key and guide (scheduled output for February 2007), and produced ten ant reference collections (showing different sub-families found in the project to date), one for each participating school. The key was tested internally on technical staff within the C·I·B before being finalised in May 2006. An update of the guide to include additional genera found after subsequent sampling efforts is nearing completion and should be available for schools in May 2007.

The C·I·B Principal Technical Officer - Database (Mr. L. Vhengani) developed a database system for use by the project, using data from the October 2005 sampling period as test data. The database was completed in July 2006.

Twenty-eight of the initial 29 sites, as well as an additional disturbed karoo site (Argentina Farm) were sampled in October 2007. The additional site is paired with a pristine site already in the project. One site was dropped as it did not contribute much to the project. Soil samples were collected from all sites and later analysed for chemical and physical properties. Not all schools involved their learners, due to the test and exam season at schools during this time. October sampling was successful and saw the inclusion of the Coastcare group in the project (as discussed above under Section 2 'partnerships'). October provided the Iimbovane team with an opportunity to give teachers a feedback form to complete on the impact that Iimbovane had on the learners and their school in its first year (Annex 4). Several curriculum advisors from the WCED joined learners in the field to experience field sampling first hand. They enjoyed the opportunity to interact with learners and to hear first-hand about the impact the Iimbovane project was having on them. In November the Iimbovane team started the sample sorting process, which was completed by end February 2007. The sorting and processing was much faster than March 2006, as the team had now become familiar with the species associated with the project and a reference collection was available.

Summer 2007 fieldwork ran from 21$^{st}$ February to 29$^{th}$ March, and involved all sites, including the three new schools. This season involved the new Grade 10 learners from all schools. In an extended capacity building initiative, selected Grade 11 learners at certain schools, who took part in the project in 2006, were able to assist the new learners in the field. This was an excellent opportunity for the interested learners from the previous year to remain active in the project, passing on their knowledge to the next year of learners. Learners from four schools visited their control sites.

Emil Weder Secondary School and Riviersonderend High School were able to walk to their control sites. Learner groups were split for both the setting and collecting of traps, with half the learners working in the control site and half working in the schools sites; they were then switched round for trap collection, so that all learners had an opportunity to work in both the

control and the school sites. At Swellendam Secondary School two groups of six learners visited their control site at Bontebok National Park. Six learners assisted the Iimbovane team with setting pitfall traps in their control site. When the Iimbovane team returned five days later the second group of six learners joined the Iimbovane team to help with the vegetation survey and to collect the pitfall traps in the control site. Twenty learners (half the class) from Central High School visited their control site in Karoo National Park (KNP) to assist with the vegetation surveys and trap collection. The remaining 20 learners will visit the control site in October 2007. As this school's control site is set on a Sunday, learners are unable to join the team for this part of the work. While working in KNP the team was assisted by a student ranger working in the park (Mr. Ntsoane). The involvement of students within the SANParks system is another example of the training impact the Iimbovane project is having in South Africa.

**Planning workshops**

The progress and planning workshop for the Iimbovane project partners was held in August 2006 at Stellenbosch University. It was attended by Prof. Kevin Gaston, Dr. Brigitte Braschler, and Dr. Sue Shaw of the UoS, and Prof. Steven Chown, Ms. Kirsten Mahood, Ms. Natasha Kruger, and Ms. Sarah Davies of the C·I·B. Mr. Vhengani attended the meeting briefly to demonstrate the database which he had developed. The workshop was successful, with much discussion of the science coming from the data. Financial issues relating to exchange rates and claim procedures that had arisen during the past year were also discussed and resolved.

**Information dissemination**

Ms. Mahood presented a paper on the role that effective communication has played in the Iimbovane project at the African Science Communications Conference, in Port Elizabeth from the 4th to the 7th of December. Ms. Mahood and Ms. Kruger gave a joint presentation on Iimbovane school science at the Commonwealth Association for Science, Technology and Mathematics Educators Conference in Cape Town on the 14th and 15th of December.

Two papers have been submitted for publication (see below) and several articles about the project appeared in newsletters and newspapers (see Table 2).

Prof. Chown was interviewed in November 2006 on SABC Radio's SAfm Cape to Midnight, with John Richards and Lynette Francis concerning the C·I·B. The Iimbovane project was mentioned during this interview.

**Additional activities**

The fast uptake of the project within the WCP has seen the Iimbovane team receiving regular requests from Western Cape Education Department (WCED) to assist with teachers training workshops on biodiversity at, for example, their Provincial Teacher Orientation Session for Life Sciences in June 2006, which was aimed at assisting teachers to implement the National Curriculum Statement. This training fell outside the scope of the Iimbovane project and was carried out under the auspices of the C·I·B. This initiative saw over 100 teachers in the WCP receive training from the Iimbovane team. The Iimbovane project was informally publicised to many teachers who were not involved in the Iimbovane project, generating more interest in the project.

Additional assistance was received from the Wilderness Coastcare team. In the three reserves managed by The City of Cape Town this season saw an outreach officer (Mr. J. Wolfaardt) from Wolfgat Nature Reserve join the Iimbovane team on the school implementation visits to Luhlaza Secondary school, as well as providing assistance at the control site. At Helderberg Nature Reserve a student was also made available to assist the sampling team in the field.

## 3.2 Progress towards Project Outputs

All teacher training workshops have been hosted successfully, ahead of schedule and trained more teachers than initially anticipated. Twenty-eight teachers, 24 of which are from previously disadvantaged communities, have been trained to date, indicating that the teacher training output is being achieved. This output indicator has been straightforward to monitor. The assumption that teachers remain active and interested in the project holds. Without the buy-in of teachers and senior school management, implementation would be extremely difficult. Should teacher support be lost, the project would be negatively impacted.

The Iimbovane project was initially implemented in 10 schools in the WCP. However, due to effective implementation and use of resources and the partnership with WCED, the Iimbovane project has been expanded to three additional schools in its second year.

The sampling transect has been established and sampled four times. This sampling will continue once the Darwin project ends. Data obtained from these sampling efforts will be analysed to determine baseline patterns of ant biodiversity within the WCP.

The planning workshop was held over two days in August, ahead of schedule. The workshop was hosted over two days instead of three, as the agenda items were concluded ahead of schedule.

The UoS project staff spent 45 weeks in South Africa. This is longer than anticipated, as the implementation, field work and data preparation has taken longer than anticipated. This extended period in South Africa was agreed to by the UoS and Stellenbosch University.

Over the last year four resources to be used in the project were produced. The most notable of these has been the electronic image-based guide for ant identification, finalised and distributed ahead of schedule. Other resources include the full Iimbovane reference collection and the reference collections produced for each school, a worksheet on how to identify an ant, and the data handling worksheets.

A paper co-authored by Ms. Mahood based on the plenary talk given at the SAEON Summit (see first report to Darwin) has been submitted to the South African Journal of Science, to be included in a special issue of this journal. A second paper, co-authored by Ms. Mahood, Dr. Braschler, Ms. Kruger, Prof. Gaston and Prof. Chown on the integration of the Convention on Biological Diversity and the Curriculum in South African schools has been submitted to the same journal.

The database system has been produced and populated with test data.

### 3.3 Standard Output Measures

**Table 1 Project Standard Output Measures**

Additional outputs are indicated in red

| Code No. | Description | Year 1 Total | Year 2 Total | Year 3 Total | Year 4 Total | TOTAL |
|---|---|---|---|---|---|---|
| Established codes | | | | | | |
| 7 | Number of training materials produced | 6 | 4 | | | 10 |
| 8 | Weeks spent in host country | 12 + 15 | 26 + 19 | | | 72 |
| 11B | Number of papers submitted to peer reviewed journals | | 2 | | | 2 |
| 13A | Number of species reference collections established | | 1 | | | 1 |
| 15A/B | Local/National articles in SA (including websites) | 2 + 3 | 1+ 14 | | | 20 |
| 15C/D | Local/National press release in UK | 1 | | | | 1 |
| 14A | Planning workshop | 1 | 1 | | | 2 |
| 14A | Teacher information workshop | 1 | 1 | | | 2 |
| 14A | Teacher training workshop | 1 | 1 | | | 2 |
| 14B | Workshops/Seminars attended | 2 | 2 | | | 4 |
| 23 | Additional resources raised | | | | | |
| 19A | National Radio Interview in SA | 1 + 2 | 1 | | | 4 |
| 20 | Value of assets to be handed over to host country | | | | | |
| 22 | Number of permanent field plots | 29 | 2 | | | 31 |
| New -Project specific measures | | | | | | |

**Table 2 Publications and other material produced April 2006 – March 2007**

Material marked * is included in Annex 5

| Type * (eg journals, manual, CDs) | Detail (title, author, year) | Publishers (name, city) | Available from (e.g. contact address, website) | Cost £ |
|---|---|---|---|---|
| Promotional material | Centre of Excellence a welcome threat to invasive species. K. Mahood. 2006. | Stellenbosch University, Stellenbosch, South Africa | Stellenbosch University Research Office (www.sun.ac.za) | Free |
| Conference proceedings | Working with education: The Iimbovane outreach project. K. Mahood, N. Kruger, B. Braschler, S.L. Chown, K.J. Gaston. 2006 | South African Agency for Science and Technology Advancement, Pretoria, South Africa | South African Agency for Science and Technology Advancement (www.saasta.ac.za) | Free |
| Newspaper article * | Schools equipped for ant hunt. E. Duvenage. 2006 | Paarl Post, Paarl, South Africa | Publisher based in Paarl | £0.50 |
| Newspaper | Equipment for schools involved with ant project. University of Stellenbosch Media Office. 2006 | Stellenbosch University, Stellenbosch, South Africa | Stellenbosch University Media Office (www.sun.ac.za) | Free |
| Newsletter | Equipment for schools involved with ant project. E. Duvenage. 2006 | Stellenbosch University, Stellenbosch, South Africa | Stellenbosch University Media Office (www.sun.ac.za) | Free |
| Newsletter* | Learners explore ant diversity in the Western Cape. B. Braschler. 2006. | Addo Elephant Park, South Africa | Addo Elephant Park (www.sanparks.org) | Free |
| Newspaper* | Wetenskapleerders het miere danksy Maties. E. Duvenage. 2007 | Suid-Kaap Forum, Riversdale, South Africa | Suid-Kaap Forum | £0.50 |
| Newspaper | Ants in her jam sandwich makes this girl smile! E. Duvenage. 2007. | District Mail, Somerset West, South Africa. | District Mail | £0.50 |
| Newspaper Cartoon* | Cartoon showing learners looking at ants, with a caption on the Iimbovane project. Anon. 2007. | District Mail, Somerset West, South Africa. | District Mail | £0.50 |
| Newsletter | Microscopes for all to see. Mahood, K. 2006. | Ellerman Resource Centre, South Africa | Ellerman Resource Centre (www.sun.ac.za/erc) | Free |
| Newsletter | Iimbovane distribution expanding. N. Kruger. 2006. | Ellerman Resource Centre, South Africa | Ellerman Resource Centre (www.sun.ac.za/erc) | Free |

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|---|---|---|---|---|
| Newsletter | Calculating Biodiversity. N. Kruger. 2006. | Ellerman Resource Centre, South Africa | Ellerman Resource Centre (www.sun.ac.za/erc) | Free |
| Newsletter | Opening of Ikamvalethu Secondary School. N. Kruger. 2006. | Ellerman Resource Centre, South Africa | Ellerman Resource Centre (www.sun.ac.za/erc) | Free |
| Newsletter | International exposure for Iimbovane. N. Kruger. 2007. | Ellerman Resource Centre, South Africa | Ellerman Resource Centre (www.sun.ac.za/erc) | Free |
| Newsletter | Iimbovane expanding. N. Kruger. 2007 | Ellerman Resource Centre, South Africa | Ellerman Resource Centre (www.sun.ac.za/erc) | Free |

### 3.4 Progress towards the project purpose and outcomes

The purpose of the Iimbovane project is being achieved. Currently four field sampling periods have been completed. No results have been published regarding the monitoring of ants within the WCP, as sufficient data are required to ensure that the effects of seasonal variations in abundance can be excluded from these analyses. However, analysis has now begun. Two papers dealing with the outreach and education aspects of the project have been submitted to peer-reviewed journals. The indicator is adequate and the assumption that taxonomic skills remain available to the project holds true.

The Iimbovane project is achieving over and above its agreed outcomes in capacity building. In two years the Iimbovane project has trained more teachers than anticipated and interacted with over 2,000 learners, thereby building capacity in general science skills and in monitoring biodiversity in South Africa, which contributes directly to the project purpose. Teachers are providing reports on the implementation of the project to the Iimbovane team, and these reports are then collated and feedback is given to WCED. The assumption that teachers remain in the participating schools holds true.

### 3.5 Progress towards impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits

Through the monitoring programme spatial and temporal data are being collected on an important invertebrate group (ants), assisting the scientific community to better understand how species are distributed in the matrix and how these distributions are changing over time and with different land management strategies. Managers of smaller nature reserves often have little knowledge about the invertebrate fauna in their areas and the data provided to them through the project is assisting them in their understanding of the biodiversity they manage.

Appreciation by local communities of the importance of biodiversity and ecosystem services and their long-term maintenance is a central outcome of the Iimbovane project. Poor, often rural, communities frequently have many other challenges to contend with on a day-to-day basis, rather than having to worry about biodiversity and ecosystem services. By teaching learners about their local environment and making this learning relevant to them, the Iimbovane project is already stimulate an appreciation of the importance of biodiversity to society. In consequence, local, regional and inter-regional activities aimed at improving sustainability of ecosystem services are likely to be far easier to implement because the rationale underlying them is better understood, as the general awareness of environmental issues is being raised.

The Iimbovane project is being widely heralded in the Western Cape as the way to ensure sustainability in public education at the schools level regarding the importance of biodiversity.

## 4. Monitoring, evaluation and lessons

This year a feedback form to determine the impact the project had in the participating schools was implemented (see Annex 4). The three page form prompted teachers to give feedback on particular aspects of the project, including communication from the Iimbovane team, how the timing of implementation had worked and if the resources provided were of use to the teachers. Teachers were also asked to raise any additional concerns they may have at this stage with the Iimbovane project. Feedback forms were completed in November 2006 (the end of the school year) and provided a good first attempt to gauge the impact of the project for the teachers in particular. All ten of the original schools remain active in the Iimbovane project, indicating that the project has been successful and schools want to remain involved.

Teachers noted that they were not always sure in the first year what to expect with each visit by the Iimbovane team. However, many of the teachers suggested this was because it was the first year of implementation at their school. Teachers felt they would have a better insight of the implementation in future years. To assist with the implementation of the project the Iimbovane team also produced an implementation schedule which further outlined how and when the project would be implemented at the schools and what aspects of the project the teachers would become more involved in, such as introducing the Iimbovane project to learners before the first visit by the Iimbovane team in March each year. A number of schools felt that they could do more to publicise the project in their local communities. This is an indication that the schools now see the Iimbovane project as part of the Grade 10 curriculum, not as an add-on. At the end of the second year of implementation, teachers will again be asked to complete the feedback form to ensure the Iimbovane team is keeping track of the changing needs of teachers. The Iimbovane team are still investigating various options to implement a tracking system to see if learners that take part in the Iimbovane project do select to study Life Sciences at a tertiary institute.

Although WCED does not give the Iimbovane project a formal evaluation, the impact that the project has had within the WCED is evident in the continuous requests from WCED to the Iimbovane project to expand the project to include every school within the WCP. The Iimbovane team are looking for ways to expand the project to include all schools within the Western Cape soon, although there are still currently a number of constraints that would have to be overcome. In a letter of thanks from the WCED for the Iimbovane team's participation in teacher training, WCED states that "*… the Iimbovane Project will provide additional and unique focal points for experiential learning from a Life Sciences point of view to teachers and learners in the Western Cape. We believe that they will enhance the quality of teaching and learning in schools and enrich the lives of our learners in the Western Cape*."

It became evident after the first main sampling season that a significant rate-limiting step to the development of the project was in the preparation and identification of the ant samples. Following discussions, it was agreed to re-distribute some of the project money to enable the employment of some technical assistance in order to free up the time of the more experienced team members for the other (and additional) activities.

## 5. Actions taken in response to previous reviews (if applicable)

No issues were raised and the review stated that the Iimbovane project was a good project and should continue. Project partners were very happy with the outcome of the review.

## 6. Other comments on progress not covered elsewhere

The design of the project has been modified slightly, as three new schools and an additional disturbed site have been added to the sampling transects. The methods for the sorting and identification of ant samples, although not altered, have become more efficient as the Iimbovane team have become more familiar with the species encountered through this project.

A constraint the Iimbovane project has faced has been the demand by WCED on team member's time. This is due to the fact that the WCED feels the project is so successful it should be implemented in every school in the Western Cape. The Iimbovane team are in the process of developing an implementation manual for the project which should ease this demand on the Iimbovane team's time, as well as provide a point of departure for the exit strategy when the Darwin funds end in September 2008.

The major risk the project faces is that of funding into the future. Although the C·I·B does provide some long-term funding for the project, this funding would only see the project maintain its current status. For the project to develop it will be necessary to find additional funds. The Iimbovane team members in South Africa are currently developing an exit strategy that will see the project become independent once Darwin funding has finished, while at the same time maintaining the impetus the project has built over the past two years.

A teacher moving between subjects and grades at a school remains a risk to the project. The change between years at some schools is extensive, with an entirely new group of teachers taking over the teaching of Grade 10 Life Science. These new teachers need to be trained in the project early in the school year so that it can continue to be implemented effectively at that school. This additional training does not appear to be a challenge, and teachers are interested and keen to attend the training workshops at the beginning of each school year.

## 7. Sustainability

The sustained interest in the project during its second year has been due to the continued effort of the Iimbovane team to maintain the high profile of the Iimbovane project in the local press and the active liaison with journalists interested in the project. WCED has requested that the Iimbovane project be included in more schools and was delighted about the expansion to three additional schools. Through the training workshop developed for WCED Provincial Teacher Orientation Session for Life Sciences 2006, the Iimbovane team have become recognised as the leaders in biodiversity training for teachers.

Discussions on the future of the Iimbovane project and the exit strategy to be taken have begun. The Iimbovane team is working on a manual (as discussed earlier) that will help implement parts of the project in additional schools without necessarily direct participation of the Iimbovane team. Continuous training of teachers in both project implementation and additional topics related to biodiversity provides WCED with potential lead teachers that will be able to assist new teachers with implementing the project, ensuring a sustained capacity building impact. The worksheets and lesson plans developed by the project have been successfully used in the classroom and will enhance teaching in the future. A collection of these worksheets and lesson plans will also be included in the manual.

Data from two sampling seasons is now available and work has begun on analyses of ant distribution patterns in the area. These results will provide baseline data for use by scientists and conservation managers in the area and will be presented at an international conference in South Africa in July 2007 and in a scientific paper.

As the major local partner, the C·I·B is in the process of seeking new, extended support for the Iimbovane project. It is in the process of developing a dedicated laboratory and office suite for it, and is now seeking support from the corporate social responsibility sector for expansion of the project.

## 8. Dissemination

Dissemination activities have concentrated on the print media, mainly through newspapers and newsletters. Newspaper articles have targeted the communities in which the project is being implemented and aims to inform these communities about the project. This form of dissemination will continue once the Darwin funding comes to an end, as there is no real cost involved, and often newspapers request that these types of articles are written. The full list of newspaper articles has been included in Table 2. Dissemination has also taken the form of

public talks and presentations at conferences. Two papers were delivered this year, one at the national African Science Communications Conference and one at the international Commonwealth Association for Science, Technology and Maths Educators Conference (both reported on earlier). Conference presentations will continue once Darwin funding comes to an end; this work will be funded through the C·I·B.

## 9. Project Expenditure

## 10. Outstanding project achievements during the reporting period

I agree for ECTF and the Darwin Secretariat to publish the content of this section.

The delivery of 10 laboratory quality stereo-microscopes, laptop computers, reference collections and image-based keys was a highlight of the year. The delight and wonderment the learners experienced when working with this equipment for the first time was tangible. This equipment will have a sustained impact on learners and the teaching of life science in these schools, as each new year-group will have an opportunity to work with it. Teachers were amazed at how taken learners were by especially the microscopes, with learners bringing a range of different items to be viewed under the microscope, from crystals grown in the physics class to mould grown in the classroom. Additionally, the excitement learners experienced when working in the field for the first time overwhelmed the Iimbovane team. The relationships that were built so quickly and easily between team members and learners were inspiring, with fun comments such as "*Ooh-eh-eh!*" after spending the day in the field, and in-depth questions on science and science careers coming naturally from learners.

# Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2006/07

| Project summary | Measurable Indicators | Progress and Achievements April 2006 - March 2007 | Actions required/planned for next period |
|---|---|---|---|
| ***Goal:*** *To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but constrained in resources to achieve*<br><br>*The conservation of biological diversity,*<br><br>*The sustainable use of its components, and*<br><br>*The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources* | | *(report on any contribution towards positive impact on biodiversity or positive changes in the conditions of human communities associated with biodiversity eg steps towards sustainable use or equitable sharing of costs or benefits)* | *(do not fill not applicable)* |
| **Purpose** Ant diversity monitored in Western Cape (WC) & strengthened monitoring capacity and education at secondary school level in region | New knowledge on dynamics of ant diversity in WC<br><br>Biodiversity monitoring scheme functioning by yr 3<br><br>Improved understanding of biodiversity amongst learners | Over 2000 learners and 28 teachers have received training on biodiversity monitoring; simultaneously an ant monitoring programme has been implemented in 13 schools in the WC and sampling has taken place four times. These outcomes contribute directly to ensuring that the purpose of the project is achieved. | The next period will see a continuation of sampling over two further sampling seasons. Schools will be involved in all sampling efforts. Data from the first four sampling efforts will be analysed |
| **Output 1.** Biodiversity monitoring programme established & functioning in 10 schools | Participation by schools and take up of keys | The biodiversity monitoring programme is active in 13 schools in the WC. Participation within schools has been outstanding and enthusiastic. Ten of the schools have received the image-based keys and other resources which have been used within the classroom. The coming year will see all schools receive updated resources. | |
| Activity 1.1<br><br>Sampling and identification programme | | Sampling has been ongoing in March and October. The schedule for the October 2007 field season is being developed. Identification, although initially slow, is going smoothly, as the ant reference collection is now available and the team are more familiar with the species associated with the programme. The coming year will see ongoing sorting and | |

| | | |
|---|---|---|
| | | identification work. The full reference collection will be updated as new information becomes available after each sampling season. |
| **Output 2.** Trained teachers | Minimum of 10 staff trained by yr 3 in ant biodiversity assessment | Twenty-eight teachers have been trained, of which 24 are from previously disadvantaged communities. It is likely that the coming year will see more teachers trained. The indicator for teacher training is appropriate. |
| Activity 2.1. Workshops | | The two-day teacher training workshop and the partner's workshop were hosted ahead of schedule and were successful. Although not scheduled, it is likely that there will be a reflections workshop for teachers at the end of the South African academic year. WCED has requested implementation training for its curriculum advisors which is likely to take place in June 2007. |
| Output 3. Baseline patterns of ant diversity established | 2 papers published in international scientific journals by end of yr 3 | Data analysis to determine baseline patterns of ant diversity has begun. It has been necessary to postpone analysis until enough data are available to exclude seasonal variation. The indicators remain appropriate. |
| Activity 3.1. Sampling and identification programme | | See above for Activity 1.1. |
| Activity 3.2. Data analyses | | Very little data analysis was done in 2006/2007 as it is necessary to have data from two full years before analysis can begin. The 2007/2008 season will see more analysis take place. |
| Output 4. Lessons learned & best practice disseminated | Minimum of 1 radio broadcast, 2 popular articles published | Information dissemination about the project has been ongoing, including presentations and publications. A number of articles have appeared in newsletters and local community newspapers. |
| Activity 4.1. Publicity material | | For the full list of publicity material produced in the 2006/2007 year, please see Annex 5. There will be a continued engagement with interested journalists to ensure the current public image of the project. |

# Annex 2 Project's full current logframe

| Project summary | Measurable Indicators | Means of verification | Important Assumptions |
|---|---|---|---|
| Goal:<br>To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve<br>the conservation of biological diversity,<br>the sustainable use of its components, and<br>the fair and equitable sharing of benefits arising out of the utilisation of genetic resources | | | |
| Purpose<br>Ant diversity monitored in Western Cape (WC) & strengthened monitoring capacity and education at secondary school level in region | New knowledge on dynamics of ant diversity in WC<br>Biodiversity monitoring scheme functioning by yr 3<br>Improved understanding of biodiversity amongst learners | South African partner institutional reports<br>Peer-reviewed publications by project partners | Schools agreement and participation<br>Continued enthusiasm of teachers & learners |
| Outputs<br>Biodiversity monitoring programme established & functioning in 10 schools | Participation by schools and take up of keys | Reports from schools to WC Education Department | Ongoing availability of taxonomic expertise |
| Trained teachers | Minimum of 10 staff trained by yr 3 in ant biodiversity assessment | Reports from schools to WC Education Department | Trained staff remain in participating schools |
| Baseline patterns of ant diversity established | 2 papers published in international scientific journals by end of yr 3 | Copies of publications sent to Darwin Initiative | N/A |

| | | | |
|---|---|---|---|
| Lessons learned & best practice disseminated | Minimum of 1 radio broadcast, 2 popular articles published | Copies of all publications & recordings sent to Darwin Initiative | N/A |
| Activities | | Activity Milestones (Summary of Project Implementation Timetable) | |
| Workshops | | Yr 1: Planning workshop with project team to establish project, conduct detailed planning & coordination; Yr 1: Teacher information workshop; Yr 2: Teacher training workshop on sampling and implementation; Yr 2: Schools implementation visits; Yr 2: Progress & planning workshop with project team & stakeholders; Yr 3: Progress & planning workshop with project team & stakeholders; Yr 3: Second teacher information workshop; Yr 3: Teacher training workshop on interactions; Yr 3: Schools implementation and follow on visits | |
| Sampling and identification programme | | Yr 1: Major transects established by project staff, sampled & data extracted; Yr 1: Schools identified and participation agreed; Yr 1-3: School sampling established, samples sorted & data extracted; Yr 2-3: Continued sampling of transects & data extraction; Yr 2-3: electronic, image-based keys developed and tested; Yr 3: Monitoring programme and inter-school contacts established | |
| Data analyses | | Yr 1: Database system established and populated with test data; Yr 2-3: Database populated; data from sampling analysed; Yr 3: Analyses written up | |
| Publicity material | | Yr 1: 2 press releases, 1 radio broadcast; Yr 2: 2 popular articles, 2 press releases; Yr 3: 2 press releases and television coverage solicited, 2 papers submitted to international scientific journals | |

# Annex 3: Table of study sites and map of South African showing the study sites.

Table 1: List of schools taking part in the Iimbovane project and their associated natural sites

| School Sites | Natural Sites |
|---|---|
| Cape Academy for Mathematics, Science and Technology, Cape Town | Table Mountain National Park |
| Central High School, Beaufort West | Karoo National Park (Flat site) |
| Emil Weder Secondary School, Genadendal | Moravian Mission land |
| Fezekile High School, Oudtshoorn | Grootkop Nature Reserve |
| Gerhard du Plessis Secondary School, Riversdale* | Werner Frehse Nature Reserve |
| Groendal Secondary School, Franschhoek | Mont Rochelle Nature Reserve |
| Ikamvalethu Secondary School, Cape Town | Tygerberg Nature Reserve |
| Luhlaza Secondary School, Cape Town | Wolfgat Nature Reserve |
| Manzomthombo Secondary School, Cape Town | Helderberg Nature Reserve |
| Riviersonderend High School, Riviersonderend | Municipal land in Riviersonderend |
| Swellendam Secondary School, Swellendam* | Bontebok National Park |
| Vusisizwe Secondary School, Worcester* | Worcester Veld Reserve |
| Weltevrede Secondary School, Wellington | Hawequas Scout Farm |
| Argentina Farm | Tierberg Karoo Research Centre |
| | Koup Station |
| | Kapklip Nature Reserve |
| | Karoo National Park (Mountain site) |

* These three schools were added at the end of 2006 and have only gone through the March 2007 sampling season.

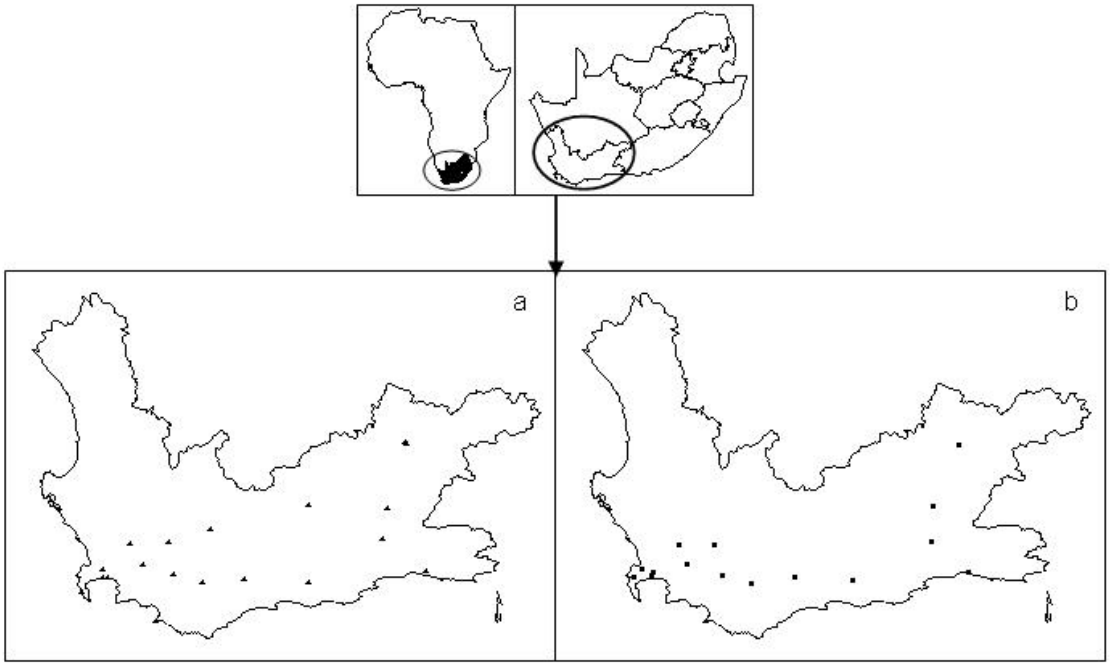


Figure 1: Triangles in (a) represent the location of Iimbovane control sites and squares in (b) Iimbovane schools sites within the Western Cape Province of South Africa.

**Annex 4:** Selected worksheets produced for the Iimbovane project in 2006/2007

# Annex 5: Media outputs for the Iimbovane project: 2006/2007

### Popular articles and talks

#### Talks

Mahood, K. Iimbovane: Exploring South African Biodiversity & Change. *Invited talk for the Rotary Club of Somerset West. July 2006.*

#### Newspaper Articles

Duvenage, E. 2006. Schools equipped for ant hunt. Paarl Post. July 2006.
Duvenage, E. 2007. Ants in her jam sandwich makes this girl smile! DistrictMail. February 2007.
Duvenage, E. 2007. Weetenskapleerders het miere danksy Maties. Suid-Kaap Forum. 23 February 2007.

#### Articles published by Stellenbosch University

Duvenage, E. 2006. Equipment for schools involved with ant project. Matieland. 2006:2
Mahood, K. 2006. Centre of Excellence a welcome threat to invasive species. Research @ Stellenbosch. December 2006.
University of Stellenbosch Media Office. 2006. Equipment for schools involved with ant project. Stellenbosch University News. July 2006.

#### Electronic sources

Anonymous. 2006. Iimbovane Outreach Project: Exploring South African Biodiversity and Change. http://www.darwin.gov.uk/projects/details/14012.html
Botha, T. 2006. Iimbovane Outreach Project. Western Cape Education Department website. http://curriculum.wcape.school.za/site/27/page/view/
SEAON electronic newsletter. 2006. Education Outreach. http://www.saeon.ac.za/eNewsletter/jun-2006-issue/education-outreach

#### Television

Kruger, N. 2006. Interview by Groen “Bewonder en Bewaar” Kyk-Net television, for a 10 minute insert about the Iimbovane project. Aired May 2006.
Mahood, K. Interview by Groen “Bewonder en Bewaar” Kyk-Net television, for a 10 minute insert about the Iimbovane project. Aired May 2006.

#### Newsletters

Braschler, BM. 2006. Learners explore ant diversity in the Western Cape. News from the Addo Elephant Park, South Africa. May/June 2006

#### Radio and Television

Chown, S.L. Interview on SABC Radio concerning the Centre for Invasion Biology and invasive alien species, SAfm Cape to Midnight, with John Richards and Lynette Francis. November 2006.

# NEWS FROM THE ADDO ELEPHANT NATIONAL PARK, South Africa

## *May/June 2006*

***About this newsletter***

*This is a general newsletter – sent out on a monthly basis - about the latest happenings and developments in the Addo Elephant National Park. Please see contact details at the end for further enquiries.*

**DOUBLE HONOUR FOR ADDO ELEPHANT NATIONAL PARK**

Addo Elephant National Park celebrates once again this month after winning PMR Golden Arrow Awards for Best Tourism Project and Best National Park in the Eastern Cape respectively.

The awards are based on a survey conducted by PMR (Professional Management Review) in January 2006 which collected 4 566 ratings from the Eastern Cape's business, local government and provincial government sectors. Ratings are based on the perceptions of respondents, namely government department directors/deputy directors, CEOs/MDs, etc, on the following criteria: corporate governance, management, and actions taken to enhance economic growth and development in the province.

Addo Elephant National Park was highest rated in the category: Best Tourism Project in the Province and also received the highest overall rating (3.94 – equivalent to excellent-plus – out of a possible rating of 5) in the National Parks category.

The Awards will be presented at the prestigious Eastern Cape Leaders and Achievers Awards function at the Boardwalk on Monday, the 5th of June, 2006.

In 2005, Addo Elephant National Park was voted "Best Park" in the South African National Parks (SANParks) Kudu Awards for excellent performance in the three core business areas of SANParks: conservation, tourism and people & conservation.

The success of the Park is evident in its steadily increasing visitor numbers and occupancy figures. Visitor numbers increased by 5.61% from 132 734 in 2004/5 to 140 179 in 2005/6, while occupancy of park accommodation increased to 90.8% from the previous year's 86.1%.

The Park fulfils an important role as an economic driver in the region, creating jobs and stimulating tourism. The large number of bed & breakfasts and private lodges clustered around the park are testament to this.

A programme to support small-, medium- and micro-enterprises (SMME's) in the communities bordering the Park is well underway, with 48 of these SMME's registered on the database. Many of these SMME's are employed within the various poverty relief programmes running in the Park, creating jobs for 166 people at present.

With the Park's ongoing expansion programme, further development and growth in the region is set to follow.

## ADDO ASSISTS IN BLACK RHINO TRANSLOCATION PROGRAMME

Five black rhino have spent the past month in Addo Elephant National Park as part of a translocation programme to assist Zambian National Parks with rhino conservation.

The five black rhino are part of a group of 10 donated by the Eastern Cape Parks Board, Kruger National Park and Thaba Tholo Game Reserve to the Zambian Wildlife Authority.

During their period of acclimatisation in the Addo Park, three of the rhino were housed in the bomas at the main camp and two at the bomas in the River Bend concession area. This period is necessary to allow the rhinos time to get used being housed and fed in bomas in order to make their translocation run more smoothly.

The rhinos will shortly be transported to Zambia via plane from Port Elizabeth airport.

The black rhino is listed as "critically endangered" on the CITES Red Data List.

## ISIDINGO IN ADDO

Shouts of "Action!", "Cut!" and "Quiet on Set Please!" filled the air at the Addo Elephant National Park at the end of June 2006 as the crew and cast members of the popular South African SABC soapie, Isidingo, descended on the park.

Park staff were thrilled to get a chance to meet Kim Engelbrecht, who stars as Lolly on the television show, and lined up for photos with the accommodating young actress.

The entire shoot was smoothly executed with no hitches. The Isidingo crew was thrilled with the Park and the accommodation and activities on offer, claiming it was one of their best shoots ever.

Even the wildlife played along, with elephants and buffalo accommodating the need for close-up shots by appearing out of the Addo's notoriously thick bush as if on cue.

This was a unique experience for most of the crew and cast, who were delighted with their elephant experience.

The Park rangers, who ensured the safety of the crew and cast while filming in the game area, were much amused at the interpretation of their job by one of the actors posing as a game ranger. Amusement turned to hilarity when the rangers noted how often the make-up of the "game ranger" was reapplied.

Amidst all the takes and re-takes of scenes, the support crew had a chance to learn a little about the ecology of the park and were particularly enamoured with the antics of the tok-tokkie beetles.

The episodes filmed in Addo are due for broadcasting on SABC 3 from the 29th July to the 2nd of August this year.

## BRING A GIRL CHILD TO WORK DAY

For the third year in a row, Addo Elephant National Park hosted 20 Grade 11 girls on a day highlighting the career options open to women. The focus of the day was on both careers options in national parks and on building self-esteem.

The twenty girls from Lungisa High School in Port Elizabeth and their two teachers spent the day experiencing the different departments in the Addo Elephant National park, including conservation, tourism, reception, tour guiding, admin/finance, human resources, people & conservation, marketing and the restaurant industry.

The girls were thrilled with their experience of the park and the roles played by park staff. Most have never visited the park before and did not even consider a career affiliated to national parks before their experience.

Those who experienced tour guiding also learnt about what is involved in horse trail management and had the opportunity to ride a horse for the first time. For many this was a great self-esteem booster as they found themselves doing something they never dreamed they could do.

Others appreciated the exposure to the tourism industry and the field of conservation as it opened their eyes to a career path that would really suit their strengths and abilities.

Overall, the day was a great success and a highlight for both learners and Park staff.

*News from South African National Parks….*

## Exciting International Writing Competition

Enter our the South African National Parks Writing Competition and win prizes to the value of R10 000

How well do you know South Africa's National Parks?

SANParks has a lot to celebrate this year, with three of our parks reaching important milestones in conservation. As a celebration of these parks and all of our wild and beautiful places, SANParks invites you to enter our International Writing Competition, and explore South Africa's National Parks...with words.

The theme for the competition is "Know Your Parks". The only criteria for entry are that your submission refers to South Africa's National Parks, and that you are not currently a SANParks employee.

"Know Your Parks" is wide open to interpretation, and your submission can be purely fictitious, biographical, autobiographical, funny, sad...anything goes! So get creative and get writing! Entries must be received by 31 August 2006.

The competition is divided into 5 categories: Poetry, Prose, Stories for Children, Children (ages 8-12), Teenagers (ages 13-17).

There will be an overall winner and a winner and runner up in each category. All finalists in each category will have their submission published on the SANParks website and the Winners will be published on the front page.

For more details, visit www.sanparks.org

**Learners explore ant diversity in the Western Cape**

The Iimbovane project provides learners from across the Western Cape, from the Cape Flats to Beaufort West and Oudtshoorn the opportunity to explore ant diversity within their province.

Iimbovane, (which means ants in Xhosa), will assist Grade 10 life science teachers and learners to implement the new National Curriculum Statement that stresses the importance of scientific inquiry, problem solving skills and biodiversity. The Iimbovane project gives learners a chance to take part in a scientific project, the results of which will be used to monitor changes in South African biodiversity.

Learners are provided with the tools and know-how to implement a project in the outdoors, to collect their own data and use this data in the classroom. Through the project, learners collect ants in pristine and modified environments close to their schools and also examine other aspects of the sites, such as vegetation structure. The modified environments are usually on the school grounds themselves and show learners how heavy disturbance of a habitat affects the ant community when comparing their findings to the results from a nearby undisturbed site, which is often situated within a nature reserve. Learners can thus compare what they find in their school grounds with what would occur naturally in that area. Data will be shared among the ten schools taking part in the project, enabling learners to compare the different ant species compositions over a larger area.

Schools also receive material support from the Iimbovane project. Generous funding from the Darwin Initiative (a United Kingdom grants programme) for the project provides each school with a high quality microscope, a computer, an ant reference collection, and an electronic guide to identify the ants. Members of the Iimbovane team also assist in ant collections at the schools and give lectures on biodiversity and conservation to the various classes involved in the project. Four national parks (Table

Mountain, Bontebok, Wilderness and Karoo National Parks) are among the reserve areas where ants will be studied.

**Suspension Bridge re-opened**

The Tsitsikamma National Park this week re-opened its world-famous suspension bridge over the Storms River
Mouth after it had closed for three months to be reconstructed.

Regarded as the icon of the park, the bridge structure had to be replaced because it had become a safety hazard.

SANParks director of parks Paul Daphne said the harsh sea conditions took its toll on the bridge to such an extent that maintenance had no longer been an option. "Built in 1969, the 77-metre bridge had received some repairs and maintenance in 1996. However, this time round it was more than a few cables that needed to be replaced. Steel parts were starting to disintegrate and were becoming a serious risk."

However, SANParks did not have the money to do the entire job, and the engineering company SCAW Metals-Haggie Steel, Bar and Rope decided to help us by donating an estimated R250 000 of skills, labour and materials. SANParks footed the remainder of the bill for the R500 000 project.

The new bridge, constructed from galvanised steel, is expected to last without major repairs for at least 30 years. Daphne said the rebuilding of the bridge had been a complex and difficult job, because of the bridge's location above the river mouth. "Most of the equipment was too heavy to move to the mouth by boat and had to be carried.

The one-kilometre decked path is steep and shaped around the curves of the hills, which made transporting of very heavy equipment demanding and awkward.

**DID YOU KNOW?**

- You can help purchase a webcam for Addo Elephant National Park by making a donation online at www.sanparks.org

- You can have your say or simply read what others have to say on our website forums. Visit www.sanparks.org/forums

- You can check availability of accommodation in any of the 20 South African National Parks by clicking on the link below, then choosing the park and rest camp you wish to investigate:
www.sanparks.org/tourism/availability/default.php
The information is updated once a day at 08h00. This will save you time when making your booking. To book, email reservations@sanparks.org or Tel: +27 (0)12 4289111.

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*If you do not wish to receive this newsletter, please send an email to the above address.*

***Learn more about your natural and cultural heritage at www.addoelephantpark.com and www.sanparks.org***