Darwin Initiative for the Survival of Species

Annual Report

Transnational conservation planning in the Maputaland ecoregion of southern Africa.

Durrell Institute of Conservation & Ecology

University of Kent

April 2005

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1. Darwin Project Information

Project Ref. Number	162/12/006
Project Title	Transnational conservation planning in the Maputaland ecoregion of southern Africa.
Country(ies)	Mozambique, South Africa and Swaziland
UK Contractor	DICE, University of Kent
Partner Organisation(s)	Ezemvelo KwaZulu-Natal Wildlife
Darwin Grant Value	£131,185
Start/End dates	1st June 2003 to 31st December 2005
Reporting period (1 Apr 2004 to 31 Mar 2005)	1st April 2003 to 31st March 2004 Report number 2
Project website	http://www.mosaic-conservation.org/maputaland/
Authors 30th April 2005	Dr Robert Smith Professor Nigel Leader-Williams

2. Project Background

The Maputaland centre of endemism is an area of approximately 17,000 km^2 that covers part of Mozambique, South Africa and Swaziland. For the purpose of this project its boundaries are set by the Lubombo Mountains in the West, the Indian Ocean in the East, the Mtubatuba-St Lucia in the South and the Namaacha-Maputo road in the North.

Maputaland is internationally recognised for its conservation value, as it contains large numbers of endemic plant and animal species and one World Heritage Site. It is also home to a great diversity of terrestrial, freshwater and marine habitats, as well as large populations of charismatic species such as the African elephant and black rhino. Unfortunately, this unique biodiversity is increasingly threatened by the spread of subsistence agriculture and over-harvesting of natural resources. As a result, there is a need for a conservation planning system to underpin the Trilateral Protocol signed in 2000 to create a Transfrontier Conservation Area, which recognises ecotourism and natural resource harvesting as the optimal forms of land use.

However, existing planning projects are hampered by a lack of capacity and suitable data and, in some instances, an *ad hoc* approach that does not involve the relevant stakeholders. This project aims to overcome these problems by designing a relevant conservation planning system for Maputaland and working with stakeholders to build capacity and to ensure that future land-use plans in the region are designed to maintain biodiversity without negatively affecting the livelihoods of local communities.

3. Project Purpose and Outputs

The purpose of this project is "To produce a conservation planning system for the Maputaland ecoregion, build capacity to ensure its continued utilisation, and encourage the use of this methodology in other developing countries". This will be achieved through the following outputs:

- A conservation planning system for Maputaland that will aid stakeholders in producing relevant land-use policies.
- Increased tri-national capacity to use the planning system and software.
- A report providing information on future planning scenarios based on stakeholder opinions.
- Strengthened links between the stakeholders involved in conservation planning in Maputaland.
- User-friendly conservation planning software & tutorial.
- Publications & presentations that illustrate the role of conservation planning in maintaining biodiversity in Maputaland and more widely.

The outputs and proposed operational plan has not been modified over the last year.

4. Progress

Brief history to the beginning of the reporting period

The project was initiated in June 2003 when initial meetings were organised to inform stakeholders of our project objectives and to build partnerships. Our work was further publicised by producing the project website and by printing and distributing a newsletter and a preliminary conservation plan for the South African section of Maputaland. This preliminary plan came out of a workshop that involved our main South African partner, Ezemvelo KwaZulu-Natal Wildlife (EKZNW), and was used to block the creation of ecologically damaging plantations in several important conservation sites. The first year also saw the development of CLUZ (Conservation Land-Use Zoning software), an extension for the ArcView GIS program that acts as a user-friendly interface for the MARXAN conservation planning software.

Summary of progress during the reporting period

Progress during the second year of this project has been generally good. We have produced all of the CLUZ materials and uploaded them onto the CLUZ website for download. We have also conducted three training workshops in the Maputaland range states and other workshops in the UK. We have produced two data collection protocols and 4 GIS databases.

We have produced a number of additional outputs, including a preliminary conservation plan for Swaziland, three MSc dissertations, a newsletter and a number of presentations.

The main slippage has been on producing a description of the methodology for choosing the focal species, which has not yet been written. In the last year a number of articles have been published on this subject, so producing this output has become less relevant, given that we can refer interested parties to these articles, and we now intend to add a section to the CLUZ website to cover this information.

We have also not produced GIS coverages of alien plants and important cultural sites. This is because we haven been advised by several stakeholders that such coverages would not be relevant. Specifically, the distribution of alien plants is likely to depend on a number of factors that cannot be mapped at a fine scale.

Furthermore, mapping cultural sites would involve long-term anthropological studies. There has also been some slippage on the landcover map, which is in a draft format only and the production of some of the species distribution maps have also been delayed. The risk of agricultural transformation map will be produced as part of a current MSc project that will be completed in September 2005.

Project achievements

CLUZ software

The production of CLUZ has been a great success, with more than 200 people from 50 countries registering to use the software since its launch in July 2004 (Appendix 1). We have also produced a tutorial and guide that has been tested by a number of volunteers and updated based on their feedback. CLUZ acts as an interface for the MARXAN conservation planning software and we have worked closely with MARXAN's developers at the University of Queensland. They have helped advertise our software by displaying prominent links on their website and they have also asked for our advice on a planned upgrade of MARXAN.

MSc dissertations

Three British DICE MSc students carried out their projects in Maputaland during May and June 2004 and their results will be incorporated into the larger project. Copies of their three dissertations are being submitted together with this annual report but a summary of each project is given below:

Paul Brookes' project analysed the spatial pattern of plant use on communal land, recording the locations of trees that were harvested for fuel wood and medicinal use. This work provided important data on levels of resource use in the region around Ndumu Game Reserve and Tembe Elephant Park, and his report has been welcomed by the two resource ecologists from EKZNW who work in the region. Paul also used his data to produce a spatial model of harvesting in the region, which will be modified to incorporate further data from southern Maputaland and then incorporated into the planning system.

Nerissa Chao's project focussed on the Usuthu Gorge Community Conservation Area. She used questionnaire surveys and community mapping to describe the attitudes of the Mathenjwa community towards this development and the effects it is likely to have on their use of the natural resources found in the reserve. This report will be used by the Mathenjwa Tribal Authority and The Wildlands Trust, a local NGO, to inform the development of this conservation area. The information on resource use, and results that suggest a lack of large-scale areas that are conserved through customary law, will also help inform the Maputaland conservation planning exercise.

Julian Easton's project focussed on the potential for incorporating game ranch incomes into conservation planning by using existing game count and hunting profitability data. This information has already been used by EKZNW to comment on the potential for establishing a new game abattoir in Maputaland to show that such a venture could be profitable. It will also be incorporated into the final Maputaland planning system to estimate the potential for game ranching in communal areas in the region.

All three dissertations were of a very high quality and were awarded distinctions, as part of the MSc in Conservation Biology.

Training

The Project Officer ran three workshops for the project partners during the last year (Appendix 2). One 3 day workshop was held at the University of Swaziland in December and was attended by 8 people; one 1 day workshop was held at Universidade Eduardo Mondlane, Maputo in February and was attended by 6 people and one 2 day workshop and was held at Queen Elizabeth Park, Pietermaritzburg and was attended by 11 people. Thus, 25 people from 13 organisations from the three range states were provided with training in conservation planning and using CLUZ and MARXAN.

We also ran two 3 hour workshops for the DICE MSc in Conservation Biology students and two 90 minute lectures at the Student Conference for Conservation Science in Cambridge. In addition, the Project Officer was asked to give a presentation at a meeting at the Centre for Environment, Fisheries, & Aquaculture Science (CEFAS), DEFRA's fisheries research centre, to discuss the potential of using CLUZ in marine conservation planning. He also gave two presentations at the European Crop Wild Relative Diversity Assessment and Conservation Forum in Korsør, Denmark, and facilitated discussions on the potential for using CLUZ in strategies to conserve crop wild relatives.

The MSc student research involved working with the Mathenjwa and Tembe communities, and five community members were trained as part of their projects. Four people were trained to collect and input questionnaire data and one person was trained to collect data using a GPS unit.

Two students arrived in the UK in September 2004 to undertake the DICE MSc in Conservation Biology. The Mozambican student is Bruno Nhancale and he works for a local conservation NGO called Fórum para Natureza em Perigo. The South African student is Petros Ngwenya and he works for EKZNW.

Swaziland preliminary conservation plan

Swaziland has a wealth of biodiversity distribution data, so it was decided to extend the CLUZ/MARXAN training workshop at the University of Swaziland to undertake a preliminary national conservation plan. This involved inputting the available data into the conservation planning system and setting representation targets for each conservation feature. The planning system contained data on vegetation types, forest types, threatened tree species and some threatened vertebrate species, and identified important areas in the north-east, north-west and east of the country (Appendix 5). There is a need to incorporate all of the threatened vertebrate distribution data and data showing the distribution of potential corridors for mitigating the impacts of climate change, and we are in discussion with the Peace Parks Foundation to produce and publicise this final output.

Publicity, presentations and posters

We produced a press release that described how our preliminary conservation plan was used by EKZNW to block the development of ecologically damaging plantations in key conservation sites in Maputaland. This news article was displayed on the Darwin Initiative and University of Kent websites and was printed in the Kent Messenger newspaper and the journal *Oryx*. The Project Officer was also interviewed on the local Canterbury radio station, KM FM.

We also produced the second annual newsletter in English and Portuguese, as well as an A1 poster that shows a satellite image of Maputaland and describes the conservation value of the region in the five local languages. The newsletter was sent to more than 80 people by e-mail and 300 copies of the poster were printed and distributed throughout the region.

An article that described CLUZ and how it had been used to produce the Swaziland conservation plan was submitted for inclusion into the Darwin Initiative newsletter.

A poster describing the preliminary Maputaland conservation plan was presented at the Darwin Initiative workshop in June 2004 and at the South African National Biodiversity Institute's 2005 Biodiversity Planning and Implementation Forum in January.

The project officer attended the Society for Conservation Biology annual conference, which was held at Columbia University in July 2004. He gave an oral presentation entitled "Conservation planning and viability: problems associated with identifying priority sites in Swaziland using species list data", which highlighted the role of CLUZ and the Darwin Initiative project.

GIS data and data protocols

The first draft of the landcover map has been completed and is being reviewed by local experts. It will be ground-truthed using existing data from South Africa and Swaziland and new data will be collected in Mozambique during September. The ecological zone map has also been completed and this will be used to help classify the broad vegetation types identified in the draft landcover map. The protected area coverage has been finalised, together with a 90m resolution Digital Elevation Model. Initial over-harvesting risk and game ranch profitability maps have been produced and the final versions will be completed once the landcover map has been completed and extra data has been collected as part of current MSc projects.

Maps of the potential distribution of all of the large mammal species have been produced for the South African section of Maputaland as part of Julian Easton's MSc dissertation and these will be expanded to include the whole study region once the landcover map has been completed. A list of threatened species that have been mapped in KwaZulu-Natal and are found in Maputaland has also been developed (Appendix 6). Distribution maps of these species will be completed in the near future by modelling their distribution using climatic envelope-based techniques and overlaying these with maps of suitable habitat derived from the landcover map.

Two data collection protocols were developed to ensure the systematic collection of ground-truth and tree resource-use data.

Website

The project website was expanded to include more details about the research and training elements. The CLUZ website was created and extra pages on the theory of conservation planning and simulated annealing were added in December. These websites have been visited 11,650 times since the project's inception.

Difficulties encountered

It has proved enormously difficult to organise transnational steering committees and so we have decided on an alternative approach, based on regular e-mail communication and visits by the Project Officer. This alternative has proved successful, as we have now built an effective working relationship with all of our main stakeholder groups and have received useful feedback. We have also stressed that the project has been designed so that the planning system continues to be used after the end of the project, so that any perceived gaps in the system can be filled in the future with the provision of funding for extra data collection.

We have also found it difficult to produce all of the species distribution maps within the original baseline timetable and there are two main reasons for this slippage. Firstly, the local expert who produced such maps for the KZN provincial conservation

plan has a large number of other commitments and so has not been able to produce the maps based on existing distribution data as quickly as desired. Fortunately, this work is progressing and will be completed by September 2005.

Secondly, many of the local ecologists seem uneasy with our original methodology of producing species maps based on their expert opinion. This methodology involved asking these experts to produce maps for peer review and many seemed reluctant to produce these original maps without input from their colleagues. Based on this, we have decided that mapping these poorly documented species should be a group exercise and that this will be undertaken at the final workshop.

Project enhancements

The design of the project has been enhanced in the following ways:

!) We decided that it would be better for the two DICE MSc students who were funded through the project should carry out fieldwork in their home countries, rather than use existing data and carry out desk-based studies. This will broaden their level of skills, increase their interaction with local stakeholders, provide extra datasets for inclusion into the planning system and give them a better understanding of how field data are incorporated into planning systems.

Bruno Nhancale will carry out his project on modelling the spatial pattern of human-elephant conflict around the proposed Lubombo Transfrontier Conservation Area, which will rejoin Maputaland's two elephant populations. This will involve mapping the spread of agriculture and the present elephant range in Mozambique and predicting changes based on a number of planning scenarios. Petros Ngwenya will collect data on the profitability of subsistence agriculture, trophy hunting and ecotourism in the KwaJobe communal area, which will then be used to determine optimal land-use options.

2) We have arranged for two more British MSc students to undertake their MSc projects in Maputaland in the current academic year. This strategy proved to be very successful in the second project year, and it provided invaluable data for the planning system and increased awareness about the Darwin Initiative project. One of the new MSc projects will build on the work of Paul Brookes and will collect spatial data on the patterns of plant harvesting around Mkhuze Game Reserve. The second project was suggested by EKZNW and will look at poaching issues in Mkhuze Game Reserve.

3) We plan to hold more CLUZ training workshops to further build capacity and meet demand. We have already organised two workshops in Pietermaritzburg and Groenvlei for May 2005. We also plan that the Project Officer will hold more workshops in the two weeks before the final conservation planning workshop that will be held towards the end of the project.

4) We had decided that the final workshop should be lengthened to give extra time for the participants to map conservation features that are presently not included in the planning system. The participants will include experts on a range of taxa and we feel that bringing these people together at the workshop will be the most effective way of mapping these missing features.

5) The Project Officer has been asked by Professor Hugh Possingham at the University of Queensland to lecture on a 2 day training workshop in Brasilia in July 2005. This workshop has been funded by Conservation International, who will pay the Project Officer's travel costs to Brazil, and will take place before the annual meeting of the Society for Conservation Biology. It is estimated that 80 people from a number of developing countries will attend this workshop and the Project Officer will provide training sessions in MARXAN and CLUZ.

6) The Project Officer will also give an oral presentation about the Maputaland project at the SCB conference in Brasilia.

Our exit strategy remains broadly the same and we are confident that they key stakeholders will use the Maputaland conservation planning system after the end of the Darwin Initiative project. In addition, we have been in discussion with The World Bank and the Peace Parks Foundation (PPF) about the possibility of expanding our work in Southern Africa. The World Bank is keen for DICE to participate in similar projects focussing on the Limpopo and Chimanimani TFCAs and we are waiting for final confirmation that they are willing to fund such activities. If funding is successful then we plan to build relevant capacity within the TFCA division of the Mozambique government and within PPF, who are involved in TFCA projects throughout Southern Africa and act as a repository for GIS data. This would help ensure that the approach developed in Maputaland would be more widely adopted and so build on the project's legacy.

Project implementation timetable 2004/2005

Following discussions with Sarah Moon at DEFRA, it has been agreed that our project completion date will be moved from December 2005 to March 2006. This will then allow the Project Officer to work part time to help complete the Darwin Initiative project that focuses on black rhino conservation in Namibia. Extending the Maputaland deadline will have not affect our spending plans in the next financial year and will also give us more time for our partners to provide us with additional data.

Date	**Key milestone**
May 2005	Two more workshops will be given to attendees at the University of KwaZulu-Natal and Groenvlei, South Africa.
June 2005	The manuscript on conservation planning in Swaziland will be revised and submitted to the journal *Animal Conservation*. A manuscript on conservation planning in Maputaland will be submitted to the journal *Oryx*.
July 2005	The Project Officer will teach on a conservation planning workshop held before the SCB meeting in Brasilia and will give an oral presentation on our work in Maputaland.
September 2005	The Mozambican and South African students will complete their MSc course, when they and the two UK students will submit their research dissertations.
November 2005	The second draft of the landcover map will be completed and circulated for comments.
December 2005	The preliminary species distribution maps will be completed.
February 2006	There will be a final workshop to finalise distribution maps, set biodiversity targets and investigate different conservation land-use scenarios. At least two more conservation planning training workshops will be held for interested groups.
March 2006	The final planning reports will be produced, together with CD-ROMs containing all the relevant data produced by the project.

5. Actions taken in response to previous reviews

The review of our first annual report was generally positive but identified two points for action. Firstly, it identified lost opportunities for capacity building. Secondly, it identified weaker relationships with our partners in Mozambique and Swaziland and a lack of focus in partner relations generally because of the large number of stakeholders that we are working with.

We responded to this first point by organising a number of training workshops in all three Maputaland range states and we plan to hold more workshops in the third year of the project. We responded to the second point by developing a list of project partners and their roles, which was submitted to the Darwin Initiative as part of the review process. We continue to work with our main partners that we listed (Ministério do Turismo, Moçambique; Ezemvelo KwaZulu-Natal Wildlife, Swaziland National Trust Commission, UNISWA and Fórum para Natureza em Perigo) and to interact with the range of other advocacy and data-based stakeholders.

6. Partnerships

A description of partner collaboration

Collaborations between the UK and host countries partners have generally been good and improving. The Project Officer had built up good working relationships with colleagues from EKZNW and UNISWA before the project was initiated in 2003, but it took time to build up working relationships with the other partners. This process has now been completed and there is a high level of awareness about our work in all three range states. Three factors in particular have helped developed this relationship.

Firstly, the training workshops have brought a large number of stakeholders together and participants have recognised the value of the systematic conservation planning process and have appreciated the capacity building element of the project.

Secondly, by allowing a Mozambican student to undertake the MSc in Conservation Biology at DICE, the project has shown to our Mozambican partners that we are committed to the project in their country. Bruno Nhancale, the MSc student, also has a number of contacts within the local conservation community and this has made it much easier to work in the country.

Thirdly, there has been a great deal of focus on the Lubombo Transfrontier Conservation Area (TFCA), which falls within Maputaland, from a number of donors, including the World Bank and the Peace Parks Foundation (PPF). They aim to start implementing conservation project in the Lubombo TFCA within the next 18 months are they are aware that previous TFCA projects have been severely hampered by a lack of suitable data. The World Bank and PPF are funding the Mozambican and Swaziland governments as part of this process and have insisted that our conservation planning system is used to make land-use decisions. EKZNW already has a long history of using systematic conservation planning systems, so this means that all three of our government partners will rely on the outputs of our project.

New links

We have developed and expanded a number of new links both within the Maputaland range states and more widely. Within Maputaland we have built on a number of links through the MSc student projects, which involved collaborating with colleagues from The Wildlands Trust and the University of KwaZulu-Natal. We have also built up links with the Peace Parks Foundation and World Bank, as described above.

Providing CLUZ and its supporting materials for free from the project website has helped build a number of links. The Project Officer has provided advice on conservation planning to researchers in Brazil, Cambodia and Spain and the CLUZ manual has been incorporated into the GAP analysis programme for Hawaii. We have also provided advice to CEFAS, as the 2004 UK Royal Commission report on the marine environment recommended that MARXAN should be used to develop a series of marine reserve in British territorial waters. The Project Officer has also been asked to be part of a proposed project to produce a conservation plan for the English Channel that would be funded by the European Union's INTERREG scheme.

7. Impact and Sustainability

The profile of the project amongst relevant stakeholders is high and has been built through a series of meetings and producing newsletters and posters. There is a great deal of stakeholder demand for the outputs of our project and this has made it easier to maintain awareness about our work. Global awareness of the importance of systematic conservation planning has also been built through the free provision of CLUZ and its associated manual and tutorials.

In general, we have not sought to raise the profile of biodiversity conservation in the region because there are a large number of government and NGO groups that are responsible for this important task. Instead, we have sought to fill a key information and capacity gap that will inform the decisions of these stakeholders. The one exception to this strategy has been the production of 300 copies of a poster showing a satellite image of the region, which will be distributed to schools, tribal authority groups, local government offices and ecotourism ventures. This poster was produced to raise awareness about the Darwin Initiative project and to provide images that could not have been produced by the stakeholder groups.

Our exit strategy continues to be based on producing a user-friendly planning system and ensuring that a number of people, both from key partner organisations and more widely, have been trained to use and update the system. The demand for training in CLUZ and the project outputs suggest that this strategy remains valid.

8. Post-Project Follow up Activities (max 300 words)

Not applicable

9. Outputs, Outcomes and Dissemination

Outputs and outcomes

Additional outputs were a preliminary conservation plan for Swaziland (Appendix 5), a game ranch profitability map, three MSc dissertations, a newsletter and presentations at the Society for Conservation Biology, to the Centre for Environment, Fisheries, & Aquaculture Science (CEFAS), at the Crop Wild Relative Diversity Assessment and Conservation Forum and at the Cambridge Student Science Conference.

A draft version of the landcover map was produced and the final versions of the risk of agricultural transformation, risk of over-harvesting and species distribution maps can only be completed once the landcover map has been finalised. Training information on how to choose biodiversity elements has not been completed and this will be added to the CLUZ website and manual once the distribution data have been will be completed. The GIS coverages showing culturally important sites and alien plants have not been completed, as we now feel that it is not be possible to produce these maps with sufficient levels of accuracy, and it is better to spend the available funds on ensuring the accuracy of the other GIS layers.

Dissemination

Our project aims to produce a conservation planning system that will be used by to inform land-use decisions in the Maputaland centre of endemism. Therefore, our main dissemination activities have focussed on our project partners and other stakeholders in the region. We have disseminated information through e-mail discussions, meetings and training workshops about the value of systematic conservation planning and our Darwin Initiative project. Dissemination has also been made easier by the presence of Petros Ngwenya and Bruno Nhancale on the DICE MSc course, as both students are part of existing conservation networks and are able to explain about their research projects, as well as our broader work.

We have also disseminated information to the broader community both within Maputaland, through the project website and the satellite image poster, and globally through the project and CLUZ website and the CLUZ software and tutorials.

Table 1. Project Outputs (According to Standard Output Measures)

Code No.	Quantity	Description
4A	9	One 1 hour lecture on conservation planning given to the DICE BSc in Biodiversity Conservation and Management.
4C	20	Two 3 hour workshops on conservation planning taught as part of the DICE MSc in Conservation Biology.
4C	17	One 90 minute workshop on designing a conservation planning system for attendees of the Student Conference on Conservation Science.
6A	5	3 hour training of community members from Mathenjwa and Tembe Tribal Authorities in using GPS units and collecting and inputting questionnaire data.
6A	25	One 3 day workshop, one 2 day workshops and one 1 day workshop given in Swaziland, Mozambique and South Africa to train government, university and consultancy personnel to use CLUZ and MARXAN.
7	3	Updated CLUZ manual Updated CLUZ guide Description of CLUZ, MARXAN and simulated annealing
7	2	Data collection protocols for collecting information for ground-truthing the Maputaland landcover map and for mapping spatial patterns of plant harvesting.
8	16 weeks	14 weeks spent by Project Officer in the three Maputaland range countries during three visits. 2 weeks spent by Principle Investigator in the three Maputaland range countries during three visits.
11B	1	Manuscript entitled “Conservation planning and viability: problems associated with identifying priority sites in Swaziland using species list data” was rejected by the journal Biological Conservation and will be submitted to Animal Conservation.

12A	4	Ecological zone GIS map Preliminary landcover GIS map Preliminary game ranching profitability map Preliminary risk of over-harvesting map
14A	4	Oral presentation at SCB conference Oral presentation at Student Conference for Conservation Science Oral presentation at CEFAS Oral presentation at the European Crop Wild Relative Diversity Assessment and Conservation Forum
15A	1	Press release describing preliminary conservation map for South African section of Maputaland sent in English and isiZulu to a number of South African newspapers.
15D	2	Press release describing preliminary conservation map for South African section of Maputaland published on University of Kent and Darwin Initiative website and printed in Kent Messenger newspaper. Press release on Swaziland conservation plan submitted for publication in Darwin Initiative website.
16A	1	One project newsletter in English and Portuguese sent to 80 people by e-mail,
16A	1	One poster showing a satellite image of Maputaland and explaining the conservation significance of the region.
17A	1	CLUZ website produced
17B	1	Project website augmented
19D	1	One radio interview about project in local station KM FM

Table 2: Publications

Type *	Detail (title, author, year)	Publishers (name, city)	Available from	Cost £
Software	CLUZ v1.6 R.J. Smith (2005)	N/A	http://www.mosaic-conservation.org/cluz	Free
Manual*	CLUZ tutorial, guide and explanation v1.6 R.J. Smith (2005)	N/A	http://www.mosaic-conservation.org/cluz	Free
GIS	Ecological zone map Landcover map v1.0 Over-harvesting map v1.0 Game ranch profitability	N/A	Available from Bob Smith Final versions will be available on CD-ROM	Free

	map v1.0			
Data collection protocol*	Protocol for collecting data to groundtruth the Maputaland landcover map. RJ Smith (2005) Protocol for collecting data on bark-stripping and tree-cutting in the Maputaland centre of endemism. PA Brookes & RJ Smith (2005)	N/A	http://www.kent.ac.uk/anthropology/dice/resources/prot_ground.pdf http://www.kent.ac.uk/anthropology/dice/resources/prot_bark.pdf	Free
MSc dissertations *	Modelling tree resource harvesting on communal land in the Maputaland Centre of Endemism. PA Brookes (2004). Local community perceptions of the establishment of a community conservation area in Usuthu Gorge, South Africa. N Chao (2004). Hunting for conservation targets: designing a community-conservation area network for Maputaland, South Africa. J Easton (2004)	N/A	Available from Bob Smith	Free
Newsletter*	Maputaland Transnational Conservation Planning Project Newsletter No 2	N/A	http://www.kent.ac.uk/anthropology/dice/resources/Map_news2_en.pdf	Free
Poster*	Maputaland satellite image poster	N/A	Available from Bob Smith	Free

* Provided as appendixes to report (others require ArcView GIS software)

10. Project Expenditure

Table 3: Project expenditure during the reporting period (Defra Financial Year 01 April to 31 March)

Item	Budget (please indicate which document you refer to if other than your project schedule)	Expenditure	Balance

A digital voice recorder was purchased to record questionnaire data and more satellite imagery need to be purchased, which is why the equipment budget was £106.69 more than planned.

11. Monitoring, Evaluation and Lessons

Monitoring and evaluation

We are measuring the success of CLUZ by recording the number of people who have downloaded the software and by documenting the comments that we have received about the software. Both of these sets of data show that CLUZ has been well received by the global conservation community. We have also added a number of features to CLUZ based on demand from users.

We have measured the success of our workshops by recorded the number of people who have attended each session. We have also received a great deal of positive feedback about these workshops and feel that another measure of success is that we have been asked to carry out more workshops in the future by groups in Mozambique and South Africa.

Measuring the success of the Maputaland conservation planning system will only be possible once it has been completed in the final project year. However, there are several qualitative indicators that suggest that the final system will be well received. Firstly, we have had very positive feedback from all project partners who fully support our project. Secondly, the preliminary conservation plan that we produced for the South African section of Maputaland continues to be used by EKZNW. Thirdly, we have been told that the preliminary Swaziland planning system that we produced with our national partners will be used to make broad-scale land-use decisions, so it is likely that the Maputaland system will be similarly used in that country. Fourthly, the Mozambican government plans to use funding from the World Bank to work with us to produce a similar planning system for the Limpopo and Chimanimani Transfrontier conservation area.

Lessons learnt

We have learnt a number of lessons during the last year and they are described below, together with our plans to incorporate these findings into next year's work:

We have received very good feedback from CLUZ users about the quality of the CLUZ documentation and error messages, especially in comparison with other conservation planning software. This has emphasised the importance of producing a user-friendly product and we will ensure that enough time is committed to keeping this information up-to-date in the next year.

Most of the CLUZ training workshops involved participants importing and analysing some of their own data. This increased the relevance of the software to them, built interest and meant that they left the workshop with data that they could analyse in more detail at a later point. We now intend that this aspect will be included in all further workshops.

We also learnt the value of providing CLUZ training for a range of people, including those who are unlikely to use CLUZ themselves but are involved in the conservation planning process. Attending our workshops helped build support for the systematic conservation planning process and for CLUZ, so we will continue to train a range of people from different stakeholder groups.

We learnt that many people are reluctant to produce species distribution maps in isolation and this is partly because they are reluctant to produce information that may open them up to criticism. Therefore, we have decided that the final distribution maps should be produced through group decision-making, as this will help build consensus. We now plan to have a session to produce these maps at the workshop that will also set the conservation targets and investigate conservation scenarios.

We have had problems finding skilled staff to assist us with the species mapping process based on existing distribution data. We have been fortunate to work with someone who has had a great deal of relevant experience, but they have had other work commitments that have slowed down progress on our project. We have responded to this problem by adjusting the project timetable, so that the project members have focussed on other aspects while waiting for the distribution datasets to be completed.

The work done by the DICE MSc students as part of their research projects provided further data to incorporate into the planning system, increased capacity building with members of local communities, built links with stakeholders and provided some extra funding for the project. In response, we have encouraged two more UK students this year, as well as the students who are funded through the Darwin Initiative project.

12. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum)

The outstanding achievement of our project during this reporting period was to help produce a preliminary conservation plan for the Kingdom of Swaziland. In the past, Swaziland has been neglected by the international conservation community because of its proximity to large protected areas in neighbouring South Africa. This situation is now changing, as the biodiversity value of the country has been recognised through its inclusion in the Maputaland-Pondoland-Albany hotspot and Barberton centre of plant endemism. However, only 4% of the country has protected area status and much of this biodiversity is threatened by the unplanned spread of agriculture and urbanisation. A number of national and international agencies want to help conserve this region, but their efforts are hampered by a lack of relevant information.

Fortunately, our project partners have collected a range of excellent biodiversity distribution data for the country, but they lacked the capacity to integrate these into a prioritisation system. In response, we organised a workshop in December 2004 to bring all of these stakeholders together and to train them how to develop and use a conservation planning system based on our CLUZ software. We also extended the workshop to include a target-setting meeting, where these local experts set representation targets for each conservation feature that would ensure their long-term survival in Swaziland. This meeting was vital, as it built consensus between all of our project partners and maximised the credibility of the resultant system.

We then used all of this information to carry out a preliminary conservation priority setting exercise for Swaziland. Based on the representation targets, the computer software identified a number of key areas, which included large patches of valuable habitat in the north, central and eastern parts of Maputaland (see Appendix 5). These results were important because they were based on a transparent and inclusive process and were displayed in a format that could be understood by a range of stakeholders. This is why the Peace Parks Foundation now plans to use this system when developing their Swaziland ecotourism corridor project, and why are partners are keen to update the system whenever they collect new data. In this way, a targeted capacity building project has helped produce far-reaching results in one of Africa's smallest countries.

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

Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2004/2005

Project summary	**Measurable Indicators**	**Progress and Achievements April 2004-Mar 2005**	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 poor in resources to achieve • The conservation of biological diversity, • The sustainable use of its components, and • The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources			
Purpose To produce a conservation planning system for the Maputaland centre of endemism, build capacity to ensure its continued utilisation, and encourage the use of this methodology in other developing countries.	Planning system used in Maputaland to make land-use decisions. Data in planning system continue to be updated. Software downloaded from website and used in other countries.	The planning system will be completed in the final year, but a preliminary version has already been used by Ezemvelo KZN Wildlife in South Africa. Since July 2004,the CLUZ software has been downloaded by 221 people from 50 countries.	Biodiversity distribution data completed and imported into conservation planning system. Final workshop to set conservation targets and explore land-use scenarios.
Outputs			
A conservation planning system for Maputaland that will aid stakeholders in producing relevant land-use policies.	CD with all data needed for land-use planning. Peer reviewed plan proposing future roles of stakeholders after DI project completion.	Have produced ecological zone map and preliminary landcover, risk of over-harvesting and game ranch profitability maps. Have produced list of threatened species for inclusion in planning system and distribution maps for large mammal species.	Will produce species distribution maps using climate and habitat data, whenever available. Will produce distribution maps for data-poor species using expert review. Will complete landcover and other associated maps. Will hold workshop to set targets and explore land-use scenarios.

Tri-national capacity to use the planning system and software.	Minimum of three individuals trained to use the planning system in all three countries.	Three workshops were held (one in each range state) and 25 people were trained to use CLUZ and MARXAN.	At least four more training workshops are planned for the final year.
Report providing information on future planning scenarios based on stakeholder opinions.	Peer review of report. 100+ copies distributed to stakeholders, plus made available on website.	This report will be completed in the final year, after the final project workshop.	Produce final report
Strengthened links between the stakeholders involved in conservation planning in Maputaland.	Number of stakeholders involved in planning process and attending transnational workshops.	The final transnational workshop will take place in the third project year.	Organising transnational steering committees was not feasible and so a system based on e-mail discussions and meetings was adopted instead.
User-friendly planning software & tutorial.	Software available on CD-ROM and from website.	Software and tutorial has been made available on the CLUZ website. We will produce CD-ROM copies at the end of the project, although the small file size of the software means that most people can access it from the website.	We will continue to update the CLUZ software, based on user feedback.
Publications & presentations.	Posters, 4 articles in popular magazines/newspapers, 2-3 papers in scientific journals.	We have produced 2 posters, one newsletter, one newspaper article and one radio interview.	We will submit three manuscripts to scientific journals in the next project year and produce a press release at the end of the project.

Note: Please do NOT expand rows to include activities since their completion and outcomes should be reported under the column on progress and achievements at output and purpose levels.