

Pest Management Plan

March 2012

CEPF Grant 59609

Border Rural Committee

Integrated Conservation in Northern Keiskammahoek

Keiskammahoek, Eastern Cape, South Africa

CEPF Grantee Pest Management Plan

1. Date of preparation of the pest management plan.

14 March 2012

I. Grant Summary

2. Grantee organization.

Border Rural Committee

3. Grant title.

Integrated conservation in Northern Keiskammahoek

4. GEM number (*to be completed by CEPF*).

59609

5. Grant amount (US dollars).

\$199,957

6. Proposed dates of grant.

1 July 2012 to 30 June 2014

7. Countries or territories where pesticides will be applied.

Keiskammahoek area of the Eastern Cape, South Africa

8. Full name, title, telephone numbers, and electronic mail address of Grantee personnel responsible for the pest management plan.

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Managing Director of Border Rural Committee

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9. Summary of the project.

The project aims to establish Cata/Mnyameni as a prime eco-destination, attracting eco-tourists, and contributing to the proliferation of IUCN red-list species as well as other indigenous fauna and flora, the eradication of alien invasive vegetation, and the production of excellent quality water in the catchment. Activities will involve the planting of indigenous trees, provided by a nursery set up at the outset of the project.

II. Pest Management Approach

10. Current and anticipated pest problems relevant to the project.

The primary alien species that has invaded riparian zones, old agricultural lands, road verges and other disturbed areas is *Acacia mearnsii*, commonly known as Black Wattle. The species originates from Australia and thus has few natural pests in South Africa. The species acts as a pioneer in the recolonization of disturbed or burnt areas and is well adapted to this role, producing large amounts of long-lived seeds, being tolerant of drought and poor soil conditions and being largely unpalatable to stock due to the high tannin content of the leaves and bark. Other alien invasive species of lesser importance in the Keiskammahoek area are Green wattle (*Acacia decurrens*), American bramble (*Rubus spp*), Bugweed (*Solanum mauritanum*) and Seringa (*Melia azedarach*).

11. Current and proposed pest management practices.

An integrated approach is followed with regard to the eradication of the alien invasive pest plants and substitution of the niche previously occupied by the alien species with that of one or more indigenous species. A typical sequence of control actions is as follows:

1. Survey the area to be controlled and determine the species composition and control methods to be applied
2. Cut and remove the alien vegetation taking into account measures to minimize possible soil erosion and negative impacts on indigenous species. Attention is also given to the utilization and/or sale of products from this operation. For example, black wattle is extensively used for house and fence construction, fuel-wood and charcoal.
3. At the time of cutting, a selective herbicide is applied to the cambium of the cut stump to ensure that the stump does not re-sprout. Common herbicides applied are Garlon 4 (Triclopyr, EC) and Lumberjack (Triclopyr salt). A vegetable-based dye is added to the herbicide mix to assist the operator and supervisor to monitor the application of the herbicide.
4. A follow-up operation is undertaken where regenerating seedlings are either removed by hand or sprayed with a selective herbicide such as Garlon. Garlon does not affect grasses and in this way it is possible to kill the wattle regeneration without affecting the indigenous grass species.
5. Steep banks are stabilized using wattle poles and gabions with mixes of indigenous grass species being sown to reduce soil erosion.
6. Seed from indigenous tree species that occur in the area (e.g. the Yellowwoods, *Podocarpus falcatus*, and *P.latifolius*) is collected and sown to encourage the establishment of indigenous vegetation, particularly with genetic material from the immediate area.
7. Follow-up operations are scheduled and carried out initially twice a year but this reduces to once a year when there is very little regeneration of the alien invasive species. The follow-up operations also attend to the maintenance of erosion control structures where necessary.

12. Relevant integrated pest management experience within the project area, country or region.

BRC has supervised the alien invasive control programmes in a number of the village areas in Keiskammahoek, having first commenced with this work in 2007.

13. Assessment of proposed or current pest management approach and recommendations for adjustment where necessary.

Pest control management practices are constantly reviewed and adjusted to increase the effectiveness of the programme while reducing its impact on the greater environment. Workers attend training and refresher courses which have a strong practical component during which time current practices are critically reviewed by experienced instructors.

It is the intention to pay greater attention to the re-vegetation aspect which will require the local establishment of a nursery to produce material for planting.

III. Pesticide Selection and Use

14. Description of present, proposed and/or envisaged pesticide use and assessment of whether such use is in line with best management practices.

Preference is given to the use of selective herbicides of the lowest toxicity rating (Blue and Green classification). Where a non-selective herbicide is required, a non-persistent chemical such as Glyphosate is used. No herbicides with soil residuality or persistence are used.

15. Indication of type and quantity of pesticides envisaged to be financed by the project (in volume and dollar value) and/or assessment of increase in pesticide use resulting from the project.

The application rates of cut-stump herbicides vary according to the density of the stems requiring treatment. The concentration rate of product in water is typically of the order of 2%. Where foliar application is undertaken approximately 3 litres of herbicide per sprayed hectare is applied. Given that 200 ha will be cleared in terms of the proposal, 600 litres will be used.

16. Chemical, trade, and common name of pesticide to be used.

Lumberjack – Triclopyr salt form 360g/l

Garlon 4 – Triclorpyremulsifiable concentrate form 61% active ingredient

Mamba – Glyphosate 360g/l

17. Form in which pesticide will be used (e.g., pellet, spray).

Water-based spray

18. Specific geographic description of where the pesticide will be applied: name of province, district, municipality, land owners, or map coordinates (if available); and the total area (hectares) to which the pesticide will be applied.

Cata and Mnyameni in Keiskammahoek, Amahlati Local Municipality, Eastern Cape, South Africa. Figure 1 (overleaf) shows that project area and the wattle areas that will be addressed. The co-ordinates of the centre are: 32.618 S - 27.098 E decimal degrees

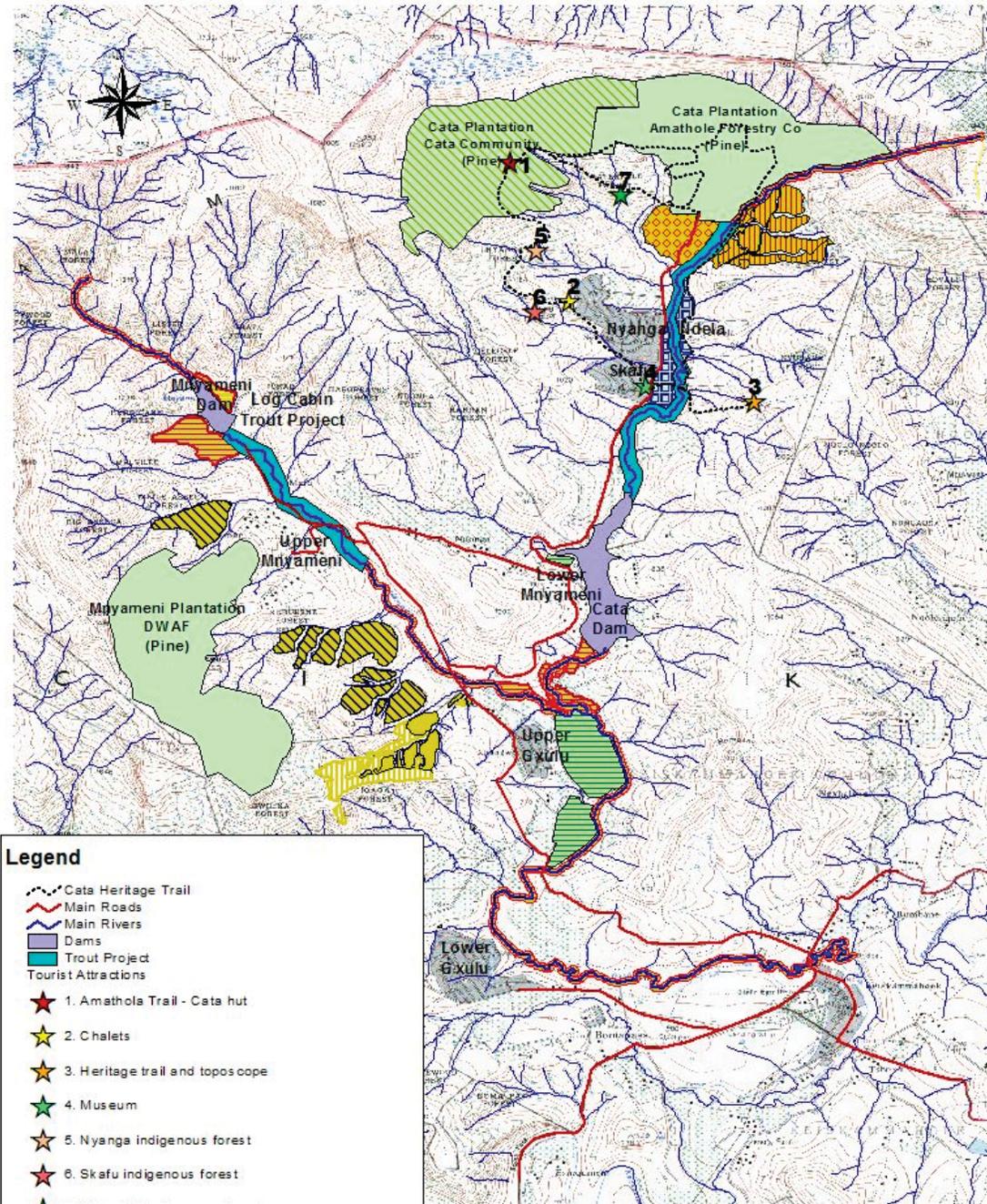
19. Assessment of environmental, occupational and public health risks associated with the transport, storage, handling and use of the proposed products under local circumstances, and the disposal of empty containers.

Assessments of the risk associated with the application of herbicides are undertaken on a site-specific basis. Only chemicals with low mammalian toxicity and low irritant characteristics are used to reduce any possible negative impacts on the people applying the herbicides. Care is taken during the transportation of the herbicides to ensure that containers are not damaged thereby preventing unwanted spillage. The herbicides are securely stored in a place dedicated to the storage of agrochemicals and issued out daily by the project supervisor. Special care is taken at the sites where the backpack sprayers are filled to ensure that there is no spillage, particularly of the chemical concentrate. Empty containers are disposed of at a registered disposal site.

Chemical stores comply with the legal requirements of the National Environmental Management Act and the Fertilizers, Farm Feeds and Agricultural Remedies and Stock Remedies Amendment Act (4 of 1980)

20. Description of plans and results for tracking of damage to and/or deaths of non-target species prior to pesticide application and subsequent to pesticide application.

Regular inspection of control areas to ensure that non-target species are not being affected.



(Co-ords of centre 32.618 S - 27.098 E decimal degrees)

21. Pre-requisites and/or measures required to reduce specific risks associated with envisaged pesticide use under the project (e.g., protective gear, training, upgrading of storage facilities, etc.).

Team supervisors and spray operators are trained in the correct handling and use of the herbicides. Regular re-fresher courses are offered in addition to the regular inspection of the operations by a qualified pest control applicator. Staff are provided with personal protective equipment and trained in the correct use and maintenance of this.

22. Basis of selection of pesticides authorized for procurement under the project, taking into consideration WHO and World Bank standards, the above hazards and risks, and availability of newer and less hazardous products and techniques (e.g. bio-pesticides, traps).

Only herbicides that have been approved by the Forest Stewardship Council are used. The recommendations of the South African Timber Industries Pesticides Working Group are closely adhered to in addition to national registration and label specifications and best operation guidelines.

23. Name and address of source of selected pesticides.

Volcano Agrosience Ltd
P O Box 1726
Mount Edgecombe 4300
South Africa
Tel: +27 31 502 3209

24. Name and address of vendor of selected pesticides.

Peter Hopewell
Sylvix Group
Durban
Tel: +27 71 153 5017

25. Name and address of facility where pesticides will be stored.

Cata Village (storage facility in pine plantation)
Keiskammahoek
Eastern Cape

IV. Policy, Regulatory Framework, and Institutional Capacity

26. Policies on plant/animal protection, integrated pest management, and humane treatment of animals.

The Forest Stewardship Council pesticides policy is used as a guiding policy – Reference FSC – GUI-30-001 V2-0 EN. In addition, the recommendations of the South African Timber Industries Pesticides Working Group are closely adhered to as well as national registration and label specifications and best operation guidelines.

27. Description and assessment of national capacity to develop and implement ecologically-based alien and invasive species control.

Technical input is drawn from the Working for Water programme, Mike Howard of Fractal Forest and Trent Milne a registered Pesticide Operator and trainer. The preparation of control plans and guidance with regard to practices that may impact on the environment is provided by the

Environmental Education Research Centre and the Department of Environmental Science of Rhodes University.

28. Description and assessment of the country's regulatory framework and institutional capacity for control of the distribution and use of pesticides.

South Africa has strictly enforced legislation relating to the distribution, sale and application of pesticides. The National Environmental Management Act and the Fertilizers, Farm Feeds and Agricultural Remedies and Stock Remedies Amendment Act (4 of 1980) are the primary regulatory laws that govern the use of pesticides. Only pesticides that have been assessed to be safe and effective by the Registrar of Pesticides may be used. Detailed labeling of pesticides and adherence to the specifications indicated on the label are legal requirements.

29. Proposed project activities to train personnel and strengthen capacity (e.g., type of training, number of people to be trained).

25 community members will be trained in the removal of alien vegetation and the application of herbicides. Mike Howard, of the forestry consulting firm Fractal Forests (<http://www.fractalforest.net/>), will provide the training.

30. Confirmation that the appropriate authorities were approached (e.g., names and titles of authorities, dates) and that the appropriate licenses and permissions were obtained by the project.

There has been ongoing contact with the following individuals, with regular consultations between Border Rural Committee and the Cata and Mnyameni Communal Property Associations, on the one hand, and appropriate local authorities, on the other. The most recent consultations took place in February 2012 with:

- Goodman Mhle – Manager - Department of Agric, Forestry and Fisheries – King William’s Town
- Michael Kawa – Regional coordinator - Working for Water, Dept of Forestry – King William’s Town.

The actual acquisition and storage of chemicals, as well as the licensed and permitted ability to spray such chemicals, will fall under the existing licenses of the Cata and Mnyameni forestry plantations. Both communal property associations have existing pine and wattle plantations. With those come various licenses, already in place, to manage invasive species in the surrounding areas addressed by this grant.

V. Consultation

31. Plans for, dates, and results of expert consultations, if necessary.

Regular meetings will be held with Mike Howard, of Fractal Forests, monthly at the outset, then every two months once operations are up and running.

32. Plans for, dates, and results of consultations with local communities.

The local Communal Property Association, the community based organization, at Cata has been part of the design of the programme, including the CEPF project letter of inquiry and subsequent proposal, since the outset. This consultation is an inherent part of this grant for all aspects of the program, including the application of herbicide, and will continue on regular basis. BRC will be working with community members and community leaders on a daily basis. Community leaders will

select the people doing the herbicide application. Community members will be the ones who do the herbicide application. The Communal Property Association will be meeting quarterly, if not monthly, to discuss project progress.

VI. Monitoring and Evaluation

33. Description of activities related to pest management that require monitoring during implementation.

- Mixing of herbicides to ensure that the correct concentrations are being applied
- Compliance with safety procedures and the correct use and maintenance of personal protective clothing
- Monitoring of the efficacy of control programmes
- Follow-up actions and the monitoring of regeneration to ensure timeous attention
- Use of protective clothing and adherence to safety procedures
- Disposal of empty containers
- Management of the herbicide store
- Monitoring of the efficacy of herbicide application
- Monitoring the effects on non-target species

34. Monitoring and supervision plan, implementation responsibilities, required expertise, and cost.

- All workers are trained in herbicide application.
- Phumeza Grootboom of BRC has the necessary expertise to monitor the training and the correct application of the herbicide is carried out.
- A trained supervisor will be on site at all times.
- All use of the chemicals will be carefully monitored. A stock record will be kept of the use and storage of the chemicals.
- This written record will include both alien and indigenous plants.
- Initially Phumeza Grootboom of BRC will check the application weekly and, once the operation is running smoothly, the visit be reduced to monthly.
- Mike Howard, the forestry specialist, will visit the project once a month initially and then again once the operation is running smoothly, every two months.
- Follow-up training on the application of herbicides will be carried out on a regular basis, at least every six months.
- Problems will be recorded and addressed immediately.
- The Department of Forestry will be approached to visit and inspect the site once every three months. A written report will be requested from the Department.

Costs

Travelling costs for Mike Howard	12 trips over a two year period	\$400 per trip	\$4 800
Technical fees for Mike Howard	15 days	\$320 per day	\$4 800
Training	Herbicide application	\$100 per person	\$2 500
Total			\$12 100