CRITICAL ECOSYSTEM PARTNERSHIP FUND

Pest Management Plan

April 2012

CEPF Grant 59591

Wildlife and Environment Society of South Africa

Collaborative Approach to Nsubane Forest Complex Management & Sustainable Livelihoods

Nsubane Forest, Port St. Johns Municipality, Eastern Cape, South Africa

CEPF Grantee Pest Management Plan

1. **Date of preparation of the pest management plan**
   2 April 2012

I. Grant Summary

2. **Grantee organization**
   Wildlife and Environment Society of South Africa (WESSA)

3. **Grant title**
   Collaborative Approach to Nsubane Forest Complex Management & Sustainable Livelihoods (Wild Coast)

4. **GEM number (*to be completed by CEPF)***
   59591

5. **Grant amount (US dollars)**
   $110,985

6. **Proposed dates of grant**
   1 May 2012 to 30 April 2013

7. **Countries or territories where pesticides will be applied**
   Nsubane Forest Cluster, Wild Coast, Eastern Cape (South Africa)

8. **Full name, title, telephone numbers, and electronic mail address of Grantee personnel responsible for the pest management plan**
   Laura Conde
   WESSA Border Kei Regional Manager
   Enviro Centre
   Nahoon Estuary Nature Reserve
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   East London (Eastern Cape)
   South Africa

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9. **Summary of the project**
   The Nsubane forest complex, Pondoland north, is the largest remaining indigenous forest complex on the Wild Coast. It includes critical eco-systems highlighted in the Maputo-Pondoland-Albany corridor and is made up of seven forest clusters stretching north from the newly approved Silaka expansion programme to Lambassi, south of the Mkambati conservation area.

The Nsubane forest complex is under ever increasing threat. Alien invasive plants at 20% – 25% infestation and human activities which take the form of forest clearing for ever-expanding community settlements and their increased agricultural needs, deforestation for construction needs, unsustainable harvesting practices for medicinal and traditional craft purposes and unmanaged and illegal access by users and poachers.

The overall aim of the proposed project is to establish a collaborative approach to sustained management of the Nsubane Forest, Port St Johns North, as well as, expand the fora for sustainable natural resource use and management of local biodiversity in the Pondoland Corridor.

The objectives of this proposal are as follows:

i. To establish the boundaries of the proposed protection area with its socio-ecological features including opportunities for corridor expansion interlinking forest clusters.
ii. To improve existing management agreements and establish appropriateness of potential conservation options (e.g. stewardship, provincial reserve, etc).
iii. To transfer practical forest rehabilitation and restoration skills for improvement of forest conservation status.
iv. To build capacity on conservation management and improved skills for sustainable livelihoods opportunities (including Local Economic Development)

II. Pest Management Approach

10. Current and anticipated pest problems relevant to the project

The Nsubane forest has been degraded by removal of indigenous trees several decades ago, followed by livestock grazing, planting of non-native species, and invasion of other plants, such as *Cestrum Laevgatum Schtdl* (Inkberry), *Acacia Saligna* (Port Jackson), *Acacia Mearnsii* (Black Wattle) and many more. These "alien invasive" species out-compete native flora for water and light, with resultant impacts on native faunal species. The Nsubane forest, as part of a KBA identified during the Ecosystem Profile, provides habitat for numerous indigenous flora and fauna species. Removal of invasive and alien plants is the first step in rejuvenation of this forest.

11. Current and proposed pest management practices

WESSA follows the best practices policy set out by the Best Practices Forum which is attended by specialists in the field of invasive alien plant control throughout the country. The correct herbicide is chosen according to plant species which are identified in each area. We strive to use the most environmentally friendly herbicides such as Plenum 160 ME or Garlon 480.

The methods of plant removal will be one of the following: Cut stump; Ring bark; Frill bark; Basel stem and wherever possible mechanical hand removal. Herbicide will only be applied by hand sprayer for spot spraying or paintbrush application. No foliar spraying will take place.

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

WESSA, as an organization, has managed similar projects in eThekwini on four sites on approximately 740 hectares throughout South Africa. The proposed team of individuals and experts to lead this grant have personally been involved on these previous efforts. The lead WESSA national

expert, Wayne Stead, will advise and support the project manager, Laura Conde, on best pest management practices. Wayne Stead has four years of experience in this field and is certified in application of all Working for Water-approved herbicides.

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

The status quo is no pest management. Indigenous forest regeneration will not occur without removal of the weed species. The proposed approach is in adherence with the national Working for Water policy, which itself was developed through expert and community consultation.

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

At present Plenum 160 ME is used for the majority of invasive plant species removal projects. This is due to the smaller percentage of mixture needed to perform the function of other similar herbicides causing less active ingredients going into the environment. It also uses a natural oil as a carrier instead of diesel. The type of herbicide would change depending on the plant species identified and in the event Plenum were not registered for that specific species. Garlon 480 is anticipated where Plenum 160 is not appropriate.

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 quantity is determined by the density levels of the area to be cleared. We estimate approximately three liters of herbicide per hectare, working on a total of 16 hectares. The maximum expected is 50 liters. The cost of Plenum, the primary agent, is Rand 150/liter, plus Actipron Supra (the wetting agent) at Rand 30/liter and the dye at Rand 165/liter. The total cost is expected to be approximately Rand 345/liter. For 50 liters, in approximate US dollars, the total will be $2,300.

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

Manufacturer: Dow AgroScience
Chemical: Picloram TIPA
Fluroxypyr MHE
Trade Name: Plenum 160 ME
Common name: Plenum 160 ME
http://www.dowagro.com/PublishedLiterature/dh_0060/0901b80380060a42.pdf?

Chemical: Actipron Supra (carrier/wetting agent)
http://iplants.co.za/herbicide/msds/MSDS%20-%20Actipron%20Super.pdf

Chemical: Red Dye (management aid)

Manufacturer: Dow AgroScience
Chemical: Triclopyr-2-butoxyethyl ester
Trade Name: Garlon 480 EC

Common name: Garlon 480 EC

http://www.cdms.net/ldat/mp0B0014.pdf

Chemical: Diesel (carrier/wetting agent)l

17. **Form in which pesticide will be used (e.g., pellet, spray)**
Liquid hand 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**
Mount Theiseger, Kaleni, Goso and Ndengane Forest. Port St Johns Municipality, OR Tambo (Eastern Cape – South Africa)
Total area: 16 hectares

See the following map link for the specific location.
http://maps.google.com/maps?q=Ntsubane,+Transkei+District,+Eastern+Cape,+South+Africa&hl=en&sll=38.895112,-77.036366&sspn=0.437149,0.617294&hnear=Ntsubane&t=m&z=12

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**
Health risks are very low on the herbicides to be used as can be seen in the manufacturer data sheets, referenced above. Storage, handling, and disposal of empty containers will be done as per legal requirements. Personal protective equipment will be used at all times while handling the products. Empty containers will be washed three times, pierced to prevent usage and disposed at a suitable waste disposal area. Likewise the manufacturer can be presented with the empty containers to dispose them appropriately.

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**
The chemicals to be applied have no effect on other species, e.g., rodents; besides the alien vegetation targeted. Project manager Laura Conde will be responsible for tracking if any non-target species are affected and will include this in regular reports to CEPF.

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.)**
Personal protective equipment will be issued to all staff. All staff will undergo training in correct use and handling of herbicides. Storage facilities will meet requirements to prevent spillage within the storage area escaping into the environment. Spillage kits will also be available in the storage area to facilitate clean up. The storage facility intended for use has space for 100 liters of herbicide, meaning more than enough space to safely store the chemical.

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)**
Selection of herbicides is made with environmental impacts in mind, i.e. as mild mixtures as possible; and the least amount of active ingredient's going into the environment with the application method used. Only herbicides which pose a low occupational health risk have been selected.

23. **Name and address of source of selected pesticides**
Dow AgroScience
Private Bag x160
Bryanston
2021

24. **Name and address of vendor of selected pesticides**
WESSA will conduct a competitive bid to identify the best-cost supplier of herbicides, including transport to the work location. The preliminary identification of the supplier is:

Ramacom InternationalA
Morningside, Durban, 4320
+27-31-7082835

25. **Name and address of facility where pesticides will be stored**
On site storage. Mount Theiseger, Kaleni, Goso and Ndengane Forest. Port St Johns Municipality, OR Tambo (Eastern Cape – South Africa)

IV. Policy, Regulatory Framework, and Institutional Capacity

26. **Policies on plant/animal protection, integrated pest management, and humane treatment of animals**
This work falls within the national policy framework described by Working for Water. Best practices are adhered to, as defined both in South Africa and globally. South African law is clearly defined for the use of such chemicals.

27. **Description and assessment of national capacity to develop and implement ecologically-based alien and invasive species control**
South Africa is using ecologically-based control mechanisms to the extent possible. WESSA is following this approach. It is only because the invasive species in the target area are so intractable and such a threat that herbicides are being used. In this case, herbicides are being used as a measure to restore indigenous plant habitats/forests, not for plantations or commercial species.

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)

Each site supervisor (two per site) will undertake the following training:

- Plant identification (1 day)
- IAPS removal and use of herbicides (1 day)
- First aid for 2 supervisors (3 days)
- Fire awareness training (can be given by fire department with a donation to them)

The training will be conducted by our WESSA lead expert in the field. Subsequent to this training, all staff will be trained on site.

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

WESSA has worked with community stakeholders and appropriate authorities throughout the process of preparing its CEPF proposal and this pest management plan. Some of these engagements and processes have been ongoing for over several years. WESSA is inclusive of stakeholder participation at all levels of project design and implementation and has been sensitive to protocols and politics in rural areas. Stakeholder visioning, forums, workshops and projects not directly linked to this proposal have all contributed to stakeholder participation. This includes close collaboration with forest users in the Port St Johns forest complex and other community-based conservation initiatives such as the Wild Coast Forest Users Association.

WESSA, the Eastern Cape Parks and Tourism Authority (ECPTA), and the ECPTA/GEF Wild Coast Project have had multiple extended stakeholder meetings, the most recent being in November 2011. These have taken place at ECPTA head office in East London, on site visits to the Nsubane forest complex and in Port St Johns with the Wild Coast Farm and Forest Organisation together with representation from the WCFUA. A strong reciprocal relationship of understanding between WESSA and the WCP community outreach officers is in place as WESSA undertook training of the officers and has continued to work with the officers in this, and other projects in Pondoland. This has allowed the officers to input and influence the development of this proposal and ensure the proposal takes cognizance of specifics as it relates to the Goso, Kaleni and Ndengane communities, who have in turn participated through the newly established participatory forest management committees.

WESSA, together with the Wild Coast Farm and Forest Organisation have collaborated with Department of Forestry and Fisheries and their estate managers on the strategic direction for the project as it relates to the Nsubane forest complex and Port St Johns rehabilitation sites.

Formally, the ECPTA and the Department of Forestry and Fisheries have given their approval for the use of herbicides for the subject work.

V. Consultation

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

In June 2011, Wayne Stead advised on the appropriate chemicals. WESSA's Laura Conde then confirmed this with ECPTA and the Department of Forestry and Fisheries. WESSA will hold further expert consultations with Mr. Stead once the project begins.

From the end of the 2nd month of the start of the project, the project supervisor (Mbulelo Maqhanqa) together with the Department of Forestry representatives and the PFMC leaders will demarcate the forest sites to be rehabilitated and consolidate the pest management plan.

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

As described in Question 30, above, WESSA has held multiple consultations in the preparation of the proposal. Further consultations will be an integral part of this project, given that it will be a community-driven project.

VI. Monitoring and Evaluation

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

WESSA's regional manager and project manager, Laura Conde , will visit each of the four rehabilitation sites at least three times over the life of the grant. She will be formally escorted by the project supervisor, Mbulelo Mghanga and the leader of each Participatory Project Management Committee. She will review training of crews, application of chemicals, storage, and disposal, at a minimum. She will also hold ad hoc meetings with people who are not direct participants and other community members to ensure veracity of accounts.

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

From the 8th month of commence of the project, the project supervisor (Mbulelo Maqhanqa) together with each PFMC leader will monitor the clearance of IAPs of the four project sites allowing five days on each site. The same process will follow on the 9th month in order to follow up on the indigenous planting activities planned for each site allowing two days per site.