CRITICAL ECOSYSTEM PARTNERSHIP FUND

Pest Management Plan

March 2014

CEPF Grant 64008

Wildlife and Environment Society of South Africa

Strengthening Sustainable Land Use Practices, Management and Local Economic Opportunities in the Forest Complex (Wild Coast)

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

CEPF Grantee Pest Management Plan

1. **Date of preparation of the pest management plan**
   31 March 2014

I. Grant Summary

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

3. **Grant title**
   Strengthening Sustainable Land Use Practices, Management and Local Economic Opportunities in the Forest Complex (Wild Coast)

4. **GEM number (*to be completed by CEPF)***
   64008

5. **Grant amount (US dollars)**
   $79999.99

6. **Proposed dates of grant**
   1 April 2014 to 1 May 2015

7. **Countries or territories where pesticides will be applied**
   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**
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9. **Summary of the project**
   The Forest Complex is a belt of indigenous forest, broadly categorised as Scarp Forest, but with Montane, Coastal Lowland and Dune Forest characteristics, covering a land mass of approximately 4 661 hectares of the Pondoland Centre of Plant Endemism between Port St Johns and Mbotyi on the Wild Coast of South Africa. Its geographical position locates it in the critical ecosystems highlighted in the Maputoland-Pondoland-Albany corridor, which is internationally recognised for its biodiversity and identified as a conservation priority.

The forest complex, which is the largest remaining natural forest stand on the Wild Coast, is the remnant of a larger forest corridor that has become fragmented and is regarded as an endangered ecosystem due to increasing pressure on the resource. The Wild Coast is the coastal zone of the former Transkei Homeland of South Africa's apartheid era and remains today as an under developed, rural and impoverished region. As a result there is a very high demand on the natural resources from local forest communities. This pressure is typically found in three key areas, (1) timber consumption and forest loss for use in sustaining livelihoods which includes the clearing of forest and timber harvesting for the construction of homesteads, fencing, cooking fuels, forest clearing for agriculture purposes and activities such as craft production; (2) impact of livestock; (3) the prevalence of invasive alien plants which out-compete indigenous forest species, contribute to heightened forest degradation and exacerbate the negative impact of fires on the forest fringes; and (4) governance and poor management of forests, lack of institutional capacity and confusion between local communities and the state on the status of forest ownership, management principles and access rights.

This project will build on the existing CEPF project in the Forest Complex in order to i) expand forest restoration and management through employment opportunities; ii) expand and develop entrepreneurship opportunities (e.g. Craft development, non-carbon technologies, etc) and; iii) increase land use management and sustainable livelihoods capacity (including the development of village level land use management plans); iv) Entrepreneurship Development; v) School-based environmental learning.

The project will link directly to the National Community Works Programme with the intention of bringing a strong ecological conservation focus to these types of government funded initiatives. The same approach will look to be taken forward along the Wild Coast.

The objectives of this proposal are as follows:

1. Specific objective 1: IAP clearance and restoration of indigenous forest (3 sites)

1.1 Activity: IAP Clearance and forest restoration work will be undertaken by the beneficiaries to the project whohave been incorporated into the Community Works Programme. The work plan, including herbicide storage, management and useage will be supervised by Sithokozile Yalo, project facilitator, with on site operations overseen by Lunga Mhlonyane, project assistant. Yalo will report directly to Michael Denison, project manager.
Output/Results: 56 - 66 hectares of forest cleared from IAPs and in the process of being restored

1.2 Activity: IAP & Restoration Site Management Plans (for 1 year work plan) will be developed in month one by Project Manager Michael Denison with Specialist input from IAP advisor Dereck Belingder and in collaboration with relevant stakeholders.
Output/Results: IAP and Forest restoration management plans in place for all three forest sites

1.3 Activity: IAP and Restoration Strategic Corridor Forest Management Plan (5 year plan) will be undertaken by Project Manager Michael Denison and in collaboration with project advisor Dereck Beliner. Relevant stakeholders and specialist input, such as that from botanical experts, cartographers etc. will be sought as required for the delivery of the plan in month 12 of the project.

Output/Results: A Strategic Forest Corridor Management Plan developed for the 2015 – 2020 year period.

2. Specific Objective 2: Participatory Land Use Planning (1 pilot site)

2.1 Activity: Facilitate and consolidate a village based participatory land use planning exercise with local community at one pilot site. This will include the Project Manager, Facilitator and Assistant and will be inclusive of relevant stakeholders such as ECPTA, DAFF, traditional leadership and forest users.
Output/Results: One village-based participatory land use plan available and process piloted

3. Specific Objective 3: Sustainable NRM Education and Training (13 villages)

3.1 Activity: Facilitate quarterly village-based workshops at 13 villages on sustainable natural resource management, conservation and stewardship over the course of the year. These will be facilitated by Yalo and Mhlonyane.
Output/Results: Four village based workshops conducted at each of the thirteen villages involved in the project

4. Specific Objective 4: Entrepreneurship Development

4.1 Activity: Crafters Development, Training and the mobilisation of further entrepreneurship opportunities will be facilitated by Project Manager with input from craft development specialist Pru Bolus based on outcomes and suggestions from previous CEPF grant (59591). Bolus, Yalo and Mhlonyane will deliver a two day workshop in Port St Johns in month one, with three further village based workshops at quarterly intervals. Denison will identify at least two further economic initiatives which will be mobilised by month 12. Output/Results: A crafters initiative developed in order to improve economic development and sustainability
Output/Results: Two economic development initiatives identified and mobilised

5. Specific Objective 5: School-based environmental learning

5.1 Activity: Project supervisor Sithokosile Yalo will facilitate a teacher professional development training workshops one a quarter in biodiversity education and curriculum implementation at primary school level to teachers from five schools in Port St Johns forests.
Output/Results: Ten teachers expanded their background knowledge on biodiversity, as well as capacitated to implement and assess biodiversity-based learning activities as required by the South African formal school curriculum (e.g. fieldwork, activities and investigations, environmental action projects, etc.)

5.2 Activity: Project supervisor with assistance of Lunga Mhlonyane and guidance from the project manager Michael Denison will conduct at three individual school support visits per quarter for effective implementation of environmental and biodiversity action projects & awareness campaigns.
Output/Results: Five schools implemented biodiversity projects such as indigenous tree nurseries and relevant lesson plans for Eco-Schools assessment and accreditation

II. Pest Management Approach

10. Current and anticipated pest problems relevant to the project

The Ntsubane 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 Ntsubane 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, Access 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, Eastern Cape and Wild Coast and amounts to 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, Michael Denison, 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 or Access 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 56 hectares. The maximum expected is 168 liters. The cost of Plenum, the primary agent, is Rand 190/1liter, plus LI 700 (the wetting agent) at Rand 94/liter and the dye at Rand 220/liter. The total cost is expected to be approximately Rand 345/liter. For 168 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)
	LI 700

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

Manufacturer:	Dow AgroScience
Chemical:	Picloram TIPA
	Triclopyr butoxyethyl
Trade Name:	Access
Common name:	Access

http://www.herbiguide.com.au/Descriptions/hg_Access.htm

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**
Dedeni, Kaleni and Goso forest sites of the Ntsubane forest complex. Port St Johns Municipality, OR Tambo (Eastern Cape – South Africa)
Total area: Max 66 hectares

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

DUMISK cc
PO Box 15313
Beacon Bay
East London
5205

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

On site storage. Mount Theiseger, Kaleni and Goso. 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 Ntsubane 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 Ntsubane 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

Since June 2011, Wayne Stead has 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. Further advice and training has been received from Dennis Taylor on veld management and the use of herbicides as well as WESSA having consulted with the supplier and had onsite expert opinion from as early as 2012 in this regard.

From the end of the 1st month of the start of the project, the project team of managers and the supervisorstogether 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 project manager, Michael Denison, will visit each of the three rehabilitation sites at least three times over the life of the grant. He will be formally escorted by the project supervisor and the leader of each Participatory Project Management Committee. He will review training of crews, application of chemicals, storage, and disposal, at a minimum. He 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 of commencement of the project, which is a follow on grant, the project supervisor together with each PFMC leader will administer ongoing monitoring of the clearance of IAPs of the three project sites. Monitoring for re-growth and subsequent revisits to sites by IAP teams will be calculated into the working plan as aspects such as rain fall and growing seasons are considered and inform best practice for maximum effect of clearing teams. These re-visits will be at approximately 3 month intervals and will be reported on to CEPF by the project manager.