

# Ground Truthing Findings : Komati 2024

Input into: Alien Invasive Species Removal

2024



# Ground Truthing Study : Komati 2024



The Ground Truthing notes that follow were generated for the Alien Invasive Species Removal project at Komati in 2024.

The results indicate the volumes of alien invasive stock in a 30km radius of the Komati Power Station.

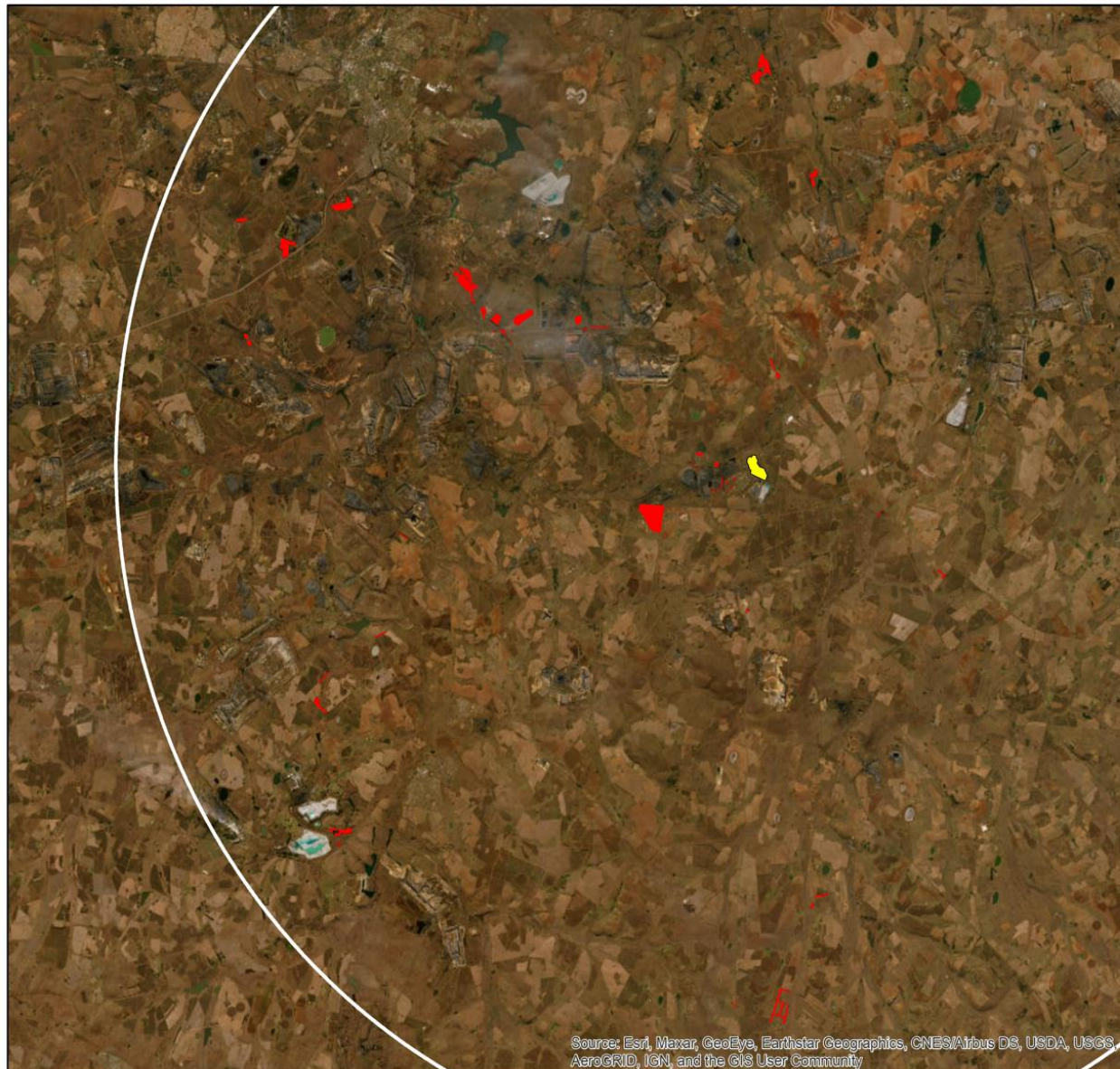
These insights can be used in conjunction with other ground truthing work to determine the available material needed for mushroom growth and “eco brick” manufacturing”



The Social Employment Fund (SEF) managed by the Industrial Development Corporation (IDC) aims to address unemployment through leveraging projects that create work for the common good.

The SEF2 programme was accessed through the Memorandum of Cooperation between Eskom and Impact Catalyst (who was an appointed Strategic Implementing Partner for this specific round). Through this programme Eskom could access the expertise of Alien Invasive Species Removal teams, employ 200 workers from the immediate community and test the viability of pelletising Alien Invasive Species from a 30km Zone around the Komati Power Station.

This project offered an insight into employing workers from the immediate community; details on the alien invasive species in the area and the operational requirements of pelletising alien invasive “stock”.



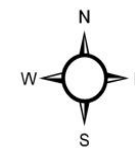
**LEAD**  
Associates  
Legal, Environmental & Associated Development

## Assumed Stands of Trees

-  Komati Power Station
-  Komati\_Biomass
- 40km Komati Buffer

The assumed stands of trees were mapped on ESRI ArcGIS through a desktop study and visual inspection on the ground, some areas were inaccessible and could only be viewed from a distance.

Approximate Tonnage.  
Eucalyptus - 10580 Tons  
Pine/Black Wattle - 1080 Tons



1 centimeter = 3.54 kilometers



An initial Ground Truthing evaluation was undertaken in late 2023. Following the initial site visit, data was complimented using mapping software a combination of available datasets on alien species, GIS maps, Google Maps and Agricultural Research Commission insights together with teams re-visiting potential sites to verify species, densities and volumes. The following figures and tables show the sites and biomass identified.

The objectives of the ground truthing study were to:

1. Determine the abundance of invasives for sustainable employment.
2. Based on this, how long can work be sustained for 200 participants in the Komati area?
3. Assess participant transport requirements. (viz. Can participants walk to the worksite or do they have to be transported, and what distances will they have to travel?)
4. Determine training requirements for workers
5. Determine post clearing requirements
6. Assess value added industry (VAI) potential for the invasives to be cleared

There are multiple stands of eucalyptus on both municipal and mining land

- 1 000 hectares would be cleared during the SEF 2 deployment
- 200 people would be fully occupied under SEF 2 conditions for two years (at least), within a 5km radius
- Immediate ecosystem benefits (water and biodiversity)
- Three communities would benefit from work opportunities (Figure 1, next slide). The community highlighted in red could work within the immediate degraded wetland area and, if time allows, start into the invasive grasses within the power station boundary fence (if allowed). The community highlighted in blue (Koorfontein) could work into the adjacent eucalyptus stands. The community highlighted in yellow (Mahlathini Farm) could also work into adjacent eucalyptus stands nearer to the Goedehoop Colliery.
- Participants would all be able to walk to work
- All participants will be trained on basic AIP control, environmental awareness, and restoration. Selected participants will be trained on chainsaws, First Aid, HIRA, and SHE. Impact Catalyst's implementation partner will conduct training.
- Post clearing: The grasslands are relatively healthy around the eucalyptus stands and there is little threat of additional runoff of topsoil due to the topography. Any areas that could potentially be eroded would be covered with brush-packing



# Communities that could benefit from Alien Invasive Species Removal



Figure 1: Three communities would benefit from work opportunities





Komati Informal Settlement - wetland & invasive kikuyu grasses





Komati Eucalyptus stand





Komati Eucalyptus stand



Nr	Possible Land Owner	Tonnage	Species
1	Eskom close to houses	4	Eucalyptus
2	Eskom	0,3	Eucalyptus
3	Eskom/close to fencing	4	Eucalyptus
4	Eskom/private land owner	10	Eucalyptus
5	Koornfontein/Thungela mine	150	Eucalyptus
6	Mine	30	Eucalyptus
7	Mine 2	8	Eucalyptus
8	Municipal/mine	5	Eucalyptus
9	Municipal/Private land owner	12	Eucalyptus
10	Koornfontein Mine	50	Eucalyptus
11	Thungela Mine	100	60% Eucalyptus / 30 % Pine and Poplar / 10% Black wattle
12	Municipal site	200	80 Eucalyptus / 20% pine
13	Municipal site 2	150	60% Eucalyptus / 40 pine /
14	Private landowner (Witbank)	100	60% Eucalyptus / 40% Black wattle
15	Mine/Private landowner	15	Eucalyptus
16	Mine/Private landowner	20	Eucalyptus

<b>17</b>	<b>Mine/Private landowner</b>	<b>5</b>	<b>Eucalyptus</b>
<b>18</b>	Mine/Private landowner	80	Eucalyptus
<b>19</b>	Mine/Private landowner	50	Eucalyptus
<b>20</b>	Mine/Private landowner	8	Eucalyptus
<b>21</b>	Mine/Private landowner	20	Eucalyptus
<b>22</b>	Mine Witbank	7	Eucalyptus
<b>23</b>	Mine/Private landowner	5	60% Eucalyptus / 40 pine
<b>24</b>	Mine/Private landowner	20	Eucalyptus
<b>25</b>	Municipal /Eskom	8	Eucalyptus
<b>26</b>	Private landowner 1	8	Eucalyptus
<b>27</b>	Private landowner 2	15	Eucalyptus
<b>28</b>	Glencore	4	Eucalyptus
<b>29</b>	Glencore	5	Eucalyptus
<b>30</b>	Glencore	1	Eucalyptus

31	Disselboom boerdery	11	Eucalyptus
32	Glencore	3	Eucalyptus
33	Private land owner	15	Eucalyptus
34	Private land owner	6	Eucalyptus
35	Private land owner	2	Black wattle
36	Private land owner	1	Black wattle
37	Private land owner	1500	Eucalyptus
38	Private land owner	50	Eucalyptus
39	Private land owner	15	Eucalyptus
40	Private land owner	7	Eucalyptus
41	Black royal mine Leewfontein	7	Eucalyptus
42	Thungela Mine	400	Eucalyptus
43	Thungela Mine	3000	Eucalyptus
44	Private land owner	10	Eucalyptus
45	Private land owner	40	Eucalyptus
46	Mine	6	Eucalyptus
47	Mine	1000	Eucalyptus
48	Seriti mine	1500	Eucalyptus
49	Seriti mine	3000	70% Black wattle & 40% Eucalyptus
50	Private land owner/Municipality	8	Black wattle
	<b>Total</b>	<b>11675,3</b>	



The dominant species is eucalyptus.

The following beneficiation options are thus viable:

- Firewood**—this is the cheapest to process and would have immediate offtakes. Several teams could be identified to continue processing firewood outside of the employment contract which our business development team would support.
- Pelletizing**—there is sufficient research around the use of eucalyptus as pellets and our team would complete a full feasibility for the possible procurement and operationalization of a pelletizer that could produce between 5 and 8 tonnes per day. Offtakes would need to be secured. An investigation should be undertaken to identify possible non-invasive fast-growing biomass sources to sustain the pelletizing after the existing biomass has been cleared.
- Planking**—a significant number of trees seem suitable for harvesting and processing into planks using a bush-mill and logger. These planks could be fed back into local businesses. The key would be a carefully designed air-drying programme. This is not easy for hardwoods but can be achieved. The feasibility of this potential business would be completed in the first two months and all suitable trees identified and left standing. Developing, training and capacitating a bush-mill team in the area could be a sustainable business providing services to the municipality, mines and farmers. With sufficient support, our team could use their experience gained in the Eco-Furniture Programme to identify some basic timber processing opportunities. This depends, mainly, on existing skills.