

## **Ecological Survey of the Proposed Site for Ash Dam Extension 3 and the Powerline Deviation Route**

### **Ash Dam Extension 3 Site**

The proposed site for ash dam extension 3 was visited on three occasions during the course of the project. A 'picture' of the ecological status of the site was composed based on observations of the site conditions and species present that were made during each of the visits (see Plates 1 to 3).

The proposed site for ash dam extension 3 is located within the Komati Power Station Property, adjacent to the existing ash dam complex and is brownfields site. The area slopes gently to the north and is bisected by a small drainage line that drains to the Gras Dam. Extensive disturbances including roads and tracks; old buildings; seepage; sedimentation of ash; and various in-stream and off-stream impoundments have altered large portions of the site. Some of these disturbances are recent while others are historical. Soils in the drainage line and large portions of the lower lying areas across the site are damp to completely inundated, mostly from the seepage that comes from the ash dams.

The site is vegetated with a mixture of natural and secondary grasslands that are composed of various species typical of primary and disturbed veld as well as various invasive species. The majority of the area is dominated by a grass sward of indigenous grasses, but many of the species on the site are typical of disturbed areas. Common species include *Hyparrhenia hirta*, *Cymbopogon validus*, *Sporobolus* spp and *Melinis repens*. In some places the grass sward has been extensively invaded by Kikuyu. There are a number of stands of exotic trees across the site; these include species such as the Black Wattle, Poplar, Willow and Bluegum. In addition there are numerous weed species occurring on the site including: the Spear Thistle (*Cirsium vulgare*), Cosmos (*Cosmos bipinnatus*), Tall Khakiweed (*Tagetes minuta*), and Large Thorn-apple (*Datura ferox*).

The central drainage line, adjacent wet areas and dams have extensive reed (*Arundo* spp) and bulrush stands. In the areas with damp soils there are numerous sedge species and hydrophilic grasses as well as extensive stands of *Imperata cylindrical*, which was used to vegetate the ash dam walls.

Fauna on the proposed ash dam site is limited by the disturbed nature of the area, resulting from agriculture, power generation and residential activities. A number of common grassland bird species were observed in the natural and secondary grasslands, however no sensitive and or species of conservation concern were observed or are expected to occur. Various water and wetland bird species were observed on the Gras Dam and wetland areas at the ash dam site. These included species such as White-faced Whistling Duck, Egyptian Goose, Yellow-billed Duck, Reed Cormorant, Sacred Ibis, Cattle Egret, Hadedda Ibis, Cape Weaver, Twany-flanked Prinia and Nedicky. All of these species are widespread and highly adaptable in their use of disturbed habitats.

No mammal species were observed during the site visit, but signs of Common Reedbuck, Grey Duiker and Porcupine were observed. It is likely that other common mammal species frequent the area, either permanently or on a transient basis. As a result of the long history of disturbance at the site, and in the area in general, no sensitive mammal species and or species of conservation concern are expected to persist.

### **Powerline Deviation Route**

The proposed powerline deviation route was walked on 6 February 2008. Each of the proposed tower locations for the 275 kV and 88 kV lines were identified using a GPS receiver and the condition of the site assessed in terms of its ecological status and species composition. Field notes from the assessment are included in Table 1 below. Plates 4 to 6 present views of the typical, representative vegetation encountered at sites along the proposed route.

The southern and central portions of the proposed powerline route are currently agricultural lands with a dryland maize crop. No ecological sensitivities were identified, although cognisance should be given to the residents of the houses adjacent to the route. The northern-central portion of the route, from the end of the maize fields to the point where the route dog-legs toward the Komati Power Station is vegetated with secondary grasslands. These grasslands appear to have established on old lands and are dominated by species such as *Hyparrhenia* and *Sporobolus* spp, typical of disturbed areas. These grasslands are also heavily infested with various weed species including *Sesbania* spp.

The area between the powerline route dog-leg and the R35 provincial road has remnants of indigenous, primary vegetation. These patches are comprised of short grasslands interspersed with numerous forb and herb species. Once the powerline route crosses the provincial road it enters Komati Power Station property. This portion of the route has been influenced by regular disturbance and heavy grazing. Although indigenous grass species persist there are numerous weed species, including Thistle and Thorn Apple present. Some of these areas are devoid of vegetation as they have been cleared for roads or construction laydown.

**Table 1: Summarized Field Notes from Tower Footprint Assessments**

Tower No.	X	Y	Site Description and Vegetation
275 – 1	-47696.4	2889507.4	Adjacent to existing tower on hill crest. Rural farm workers houses nearby. Short indigenous grassland, heavily grazed. <i>Sporobolus</i> and <i>Aristida</i> spp
275 – 2	-47832.8	2889221.2	Flat area within maize field.
275 – 3	-47987.6	2888896.2	Flat area within maize field.
275 – 4	-48140.7	2888574.8	Flat area within maize field.
275 – 5	-48267.9	2888307.8	Flat area within maize field.
275 – 6	-48434.5	2887957.9	Flat area within secondary grassland on old ploughed lands. <i>Hyparrhenia</i> spp, <i>Sporobolus</i> spp, <i>Setaria</i> spp, Sedge spp. Significant invasion by <i>Sesbania</i> spp.
275 – 7	-48417.3	2887889.3	Flat area within secondary grassland on old ploughed lands. <i>Imperata cylindrica</i> , <i>Sporobolus</i> spp, <i>Setaria</i> spp and Sedge spp. Significant invasion by <i>Sesbania</i> spp.
275 – 8	-48184.9	2887786.4	Flat area within natural grassland. Short, dense sward interspersed with tall grass clumps and various herb spp.
275 – 9	-47874.5	2887649.	Adjacent to existing tower within ash dam property. Heavily disturbed, significant seepage from ash dam. Bulrushes and weedy species such as Thistle and Thorn Apple
88 – 1	-47735.5	2889503	Adjacent to existing tower on hill crest. Rural farm workers houses nearby. Short indigenous grassland, heavily grazed. <i>Sporobolus</i> and <i>Aristida</i> spp
88 – 2	-47852.6	2889257	Flat area within maize field.
88 – 3	-47955.5	2889040	Flat area within maize field.
88 – 4	-48067.8	2888803	Flat area within maize field.

Tower No.	X	Y	Site Description and Vegetation
88 – 5	-48169.1	2888590	Flat area within maize field.
88 – 6	-48272.1	2888373	Flat area within maize field.
88 – 7	-48378.9	2888148	Flat area within secondary grassland on old ploughed lands. <i>Imperata cylindrica</i> , <i>Sporobolus</i> spp, <i>Setaria</i> spp, Sedge spp. Significant invasion by <i>Sesbania</i> spp as well as creeper.
88 – 9	-48491.4	2887911	Flat area within natural grassland. Short, dense sward interspersed with tall grass clumps and various herb spp.
88 – 10	-48302.5	2887784	Flat area adjacent to road and house complex. Significant surface disturbance and rubble.
88 – 11	-48096.5	2887646	Between power station access road and pipeline. Heavily grazed by community stock. <i>Sporobolus</i> spp, <i>Themeda triandra</i> , <i>Setaria</i> spp, <i>Heteropogon</i> spp
88 – 12	-47953.5	2887550	Adjacent to exiting tower within power station property. Within a graded, laydown area being used for construction, no vegetation.



Plate 1: View of Ash dam Extension 3 Site from Ash Dam 1 showing the powerlines requiring deviation. Note the stands of exotic trees.



Plate 2: View of Ash dam Extension 3 Site from Ash Dam 1 showing the drainage line and Gras Dam. Note the Giant Reeds (*Arundo* spp) in the drainage lines.





Plate 3: View of Ash dam Extension 3 Site showing extensive surface seepage.



Plate 4: View of the powerline route in the maize fields at the southern end of the proposed deviation route.



Plate 5: View of the powerline route from the northern corner toward the R35. The vegetation is a mixture of secondary grasslands on old lands with remnant patches of primary grassland.



Plate 6: View along the powerline route from the R35 toward Komai Power Station. Note the residents and disturbance to the grass sward (dumping and overgrazing)