

Addendum: Revisit and Reassessment of Vlakkeland, July 2013

Introduction

This report serves as an addendum to a previous botanical scan of the proposed housing development on ERF 8378 Paarl (Vlakkeland) by McDonald (2010). The rationale for a reassessment is based on (1) McDonald's recommendation to conduct a botanical scan at a more suitable season in terms of the optimal detection of important plant species, in particular bulbs, and (2) due to the expansion of the site since 2010. A site revisit was also necessary to determine whether any changes have occurred on the property since 2010.

The initial botanical scan was carried out on 20 May 2010 while the second scan was carried out on 26 June and 2 July 2013. While it is conceded that the second scan is somewhat early in terms of the peak flowering period, it is regarded as a more suitable time compared to the May 2010 survey. Most bulb species flower during spring (August to October). There is therefore still a limitation in terms of the observable flowering plants, meaning that a spring survey could possibly yield some additional species. The findings, constraints, conclusions and recommendations of the 2013 survey are presented below according to three areas, which are:

1. ERF 33027 and land above dams and along Bo Dal Road;
2. Land portion along Jan van Riebeeck Drive (ERVEN 12833/8359/8399/8400/12828);
and
3. ERF 8378

Terms of Reference

The Terms of Reference provided were to (a) re-assess the entire site and in more detail, paying particular attention to the patch of vegetation above the dams and below Bo Dal Road (ERF 33027) previously identified by McDonald as having conservation value, and to (b) advise whether:

1. This must be retained at all costs; or
2. Can be removed/developed; or

3. Search and Rescue and replanted (if possible); or
4. Must remain with possible indication of connectivity area/zones

In view of the above, the following question was put forward:

- If the vegetation on ERF 33027 must be conserved, would it be possible to develop a cemetery at this site or will the impact be too severe?

Results of June / July 2013 investigation

ERF 33027 and land above dams and along Bo Dal Road

ERF 33027 was not previously surveyed since the area fell outside the site boundary when McDonald (2010) surveyed the site. Although the outer edges of the erf are highly transformed the major portion contains a number of species of conservation concern. It is also important to note that there were a number of bulb species that could not be identified since only the leaves were visible and no flowers present.

The area has been heavily disturbed in the past and as a result is dominated by several grasses and weeds, including (D = dominant; A = additional), *Echium plantagineum*, *Echium vulgare*, *Hypochoeris radicata* (A), *Lupinus* sp. and *Fumaria muralis* (A). Despite the obvious past disturbance of the land, probably due to it being both cultivated and using as a grazing area, there are a number of remnant indigenous species present. Important observations include two bulb species, namely the **VULNERABLE** *Gladiolus recurvus* and the **VULNERABLE** *Spiloxene alba*. The former species occurs sporadically across the erf whereas the latter species occurs in high numbers in the vicinity of **waypoint 020** (33° 40.591'S; 19° 0.436'E) to **024** (33° 40.644'S; 19° 0.599'E) (Figure 3). Between waypoints **020** and **023** (33° 40.589'S; 19° 0.533'E) there are high numbers (of a striking and unique form) of the **ENDANGERED** *Monsonia speciosa*. This perennial species is a resprouter, with individuals living to 30 years (www.redlist.sanbi.org). This means the population has probably persisted for many decades or longer, depending on the land use history. The population is a red flag and must be conserved in perpetuity.

In addition to the species of conservation concern there are a number of more common remnant species, including *Aspalathus spinosa* subsp. *spinosa* (D), *Cotula turbinata* (D), *Arctotis*

calendula (D), *Oxalis purpurea* (D), *Oxalis cf. droseroides* (D), *Oxalis pes-caprae* (A), *Oxalis obtusa* (A), *Cyanella hyacinthoides* (D), *Eriospermum* sp. (A), *Ficinia* sp. (A), *Pelargonium triste* (A), *Pelargonium* sp. (D), *Trachyandra falcata* (A), *Moraea* sp. (D), *Lachenalia* sp., *Romulea flava* (A) and *Dimorphotheca sinuata*.

The portion of land immediately south and southeast of ERF 33027 has light infestations of Port Jackson Willow (*Acacia saligna*) and a number of remnant species previously described by McDonald including *Bobartia cf. indica*, *Diospyros glabra*, *Micranthus alopecuroides*, *Otholobium* sp., *Ruschia bracteata*, *Salvia africana-caerulea*, *Searsia angustifolia*, *Searsia laevigata* and *Spiloxene flaccida*.

In May 2010 when McDonald visited the site no important species were visible, however, during the July survey a healthy population of the **VULNERABLE** *Gladiolus recurvus* was flowering. The species extends from ERF 33027 as scattered individuals to the south and southwest (above the dams) and occurs as a population of thousands of plants from **waypoint 027** (33° 40.757'S; 19° 0.633'E) to **029** (33° 40.800'S; 19° 0.696'E) (Figure 3). This confirms McDonald's assertion that the area may have harbored important species, despite being degraded and infested by Port Jackson Willow and gum trees (*Eucalyptus* sp).

CONSTRAINTS, CONCLUSIONS and RECOMMENDATIONS

- The area is degraded but holds conservation value due to the (1) large population of the **VULNERABLE** *Gladiolus recurvus*, (2) a viable population of the **ENDANGERED** *Monsonia speciosa*, and (3) scattered individuals of the **VULNERABLE** *Spiloxene alba*.
- There may be a number of additional species of conservation concern, which would only be identifiable during spring.
- **Mitigation measures are limited** and should take the form of AVOIDANCE wherever possible. The area should be conserved and rehabilitated. This should include removal of all invasive alien plants, rubble and policing of dumping activities. Bollards should be erected to prevent people from driving onto the site and offloading rubble and waste material.
- The area has been marked as a CBA in the Western Cape Spatial Development Framework (WCSDF) (Kirkwood *et al.* 2010). and is thus confirmed to hold conservation values due to threatened species associations (Figure 6).

Land portion along Jan van Riebeeck Drive (ERVEN 12833/8359/8399/8400/12828)

The strip of land along Jan van Riebeeck Drive is highly transformed and contains no remaining species of conservation concern. The area between waypoint **033** (33° 40.669'S; 18° 59.921'E) and **037** (33° 41.167'S; 18° 59.792'E) is dominated by weeds and pioneer species, including several grasses (e.g. *Cynodon dactylon*) and pioneers such as *Arctotis calendula*, *Oxalis pes-caprae*, *Echium plantagineum* and *Cotula turbinata* (Figure 3). South of **waypoint 037** and immediately north of **waypoint 038** (33° 41.280'S; 18° 59.678'E) there is a stand of mature gum trees (*Eucalyptus* sp.). The artificial (or modified) wetlands include a pond between **waypoint 036** and **037**. A number of wetland associated species occur here such as *Phragmites australis*, *Juncus effusus*, *Pennisetum macrourum*, *Searsia angustifolia*, along with the aliens *Acacia mearnsii* and *Sesbania punicea*. A number of additional dryland aliens include *Cereus* cf. *jamacaru*, *Rubus cuneifolius*, *Ricinis communis* and *Tropaeolum majus*.

CONSTRAINTS and CONCLUSIONS

- The area is highly transformed and has very little conservation value in terms of remnant vegetation or important species since none were detected. The designation of parts of this area as CBA's based on the presence of threatened species associations in the WCBF (Kirkwood *et al.* 2010) is therefore not supported based on these findings.
- Wetlands are assessed in the wetland specialist study and thus no mention is made here apart from the potential for these areas to harbour biodiversity if they are restored and rehabilitated using endemic species.

ERF 8378

The area between the dams and Beets Street is highly degraded, with no intact natural vegetation remaining. There are, however, several remnant species. These are in the form of either persistent or pioneer species, including extensive populations of *Oxalis purpurea*, *Oxalis versicolor*, *Oxalis pes-caprae*, *Cotula turbinata* and *Moraea* sp. Additional species include *Lachenalia* sp. (speckled leaf), *Aspalathus spinosa* subsp. *spinosa*, *Asparagus rubicundus* and *Eriospermum* sp. There are large quantities of dumped rubble and litter around the perimeter of informal settlement and pigpens. This area and the remaining areas on the ERF have not changed since McDonald's (2010) assessment. Importantly no species of conservation concern were found.

CONSTRAINTS and CONCLUSIONS

- No intact remnant natural vegetation was found, however, there are a number of species mentioned above, which could be translocated for the purpose or restoring the degraded portions of the orange area depicted in Figure 3.
- No threatened species associations were found, which contradicts the WCBF (Kirkwood *et al.* 2010). CBA designation based on threatened species associations (Figure 7 & 8). It is still possible that such species are present, since the area was not surveyed extensively due to local residents refusing access to the southern portion of the ERF.



Figure 1 (left). A striking pink form of the ENDANGERED *Monsonia speciosa*. **Figure 2 (right).** The VULNERABLE *Gladiolus recurvus*.

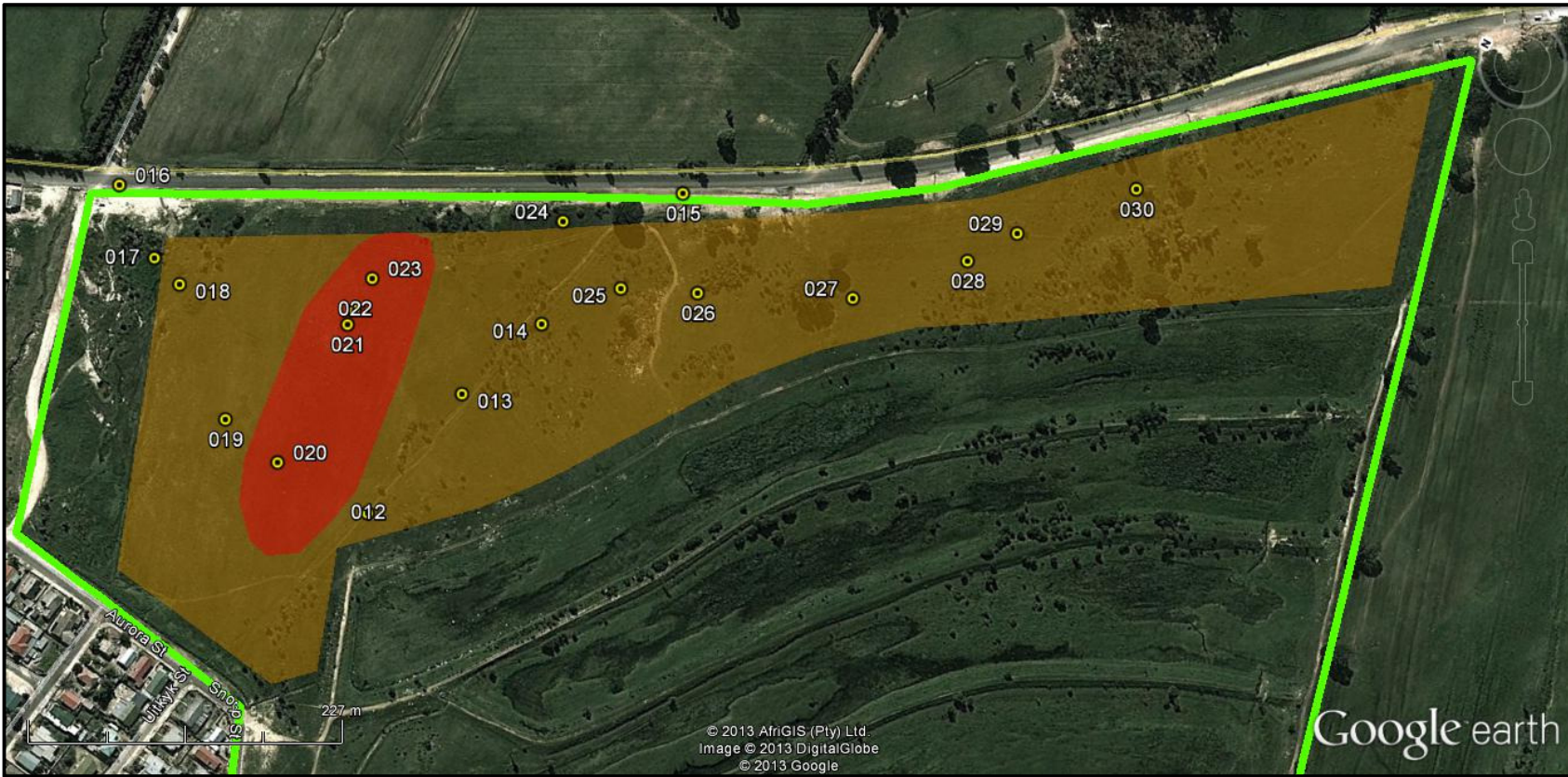


Figure 3. Google Earth™ aerial image showing the eastern portion of land above (upslope) the dams and along Bo Dal Road. The sample waypoints are indicated (numbered yellow circle icons). There are a number of remnant bulb species present including high numbers of the VULNERABLE *Gladiolus recurvus* occurs (orange shading) and the ENDANGERED *Monsonia speciosa*. Another VULNERABLE species, *Spiloxene alba* occurs in the vicinity of waypoint 2 and within the red shaded area.

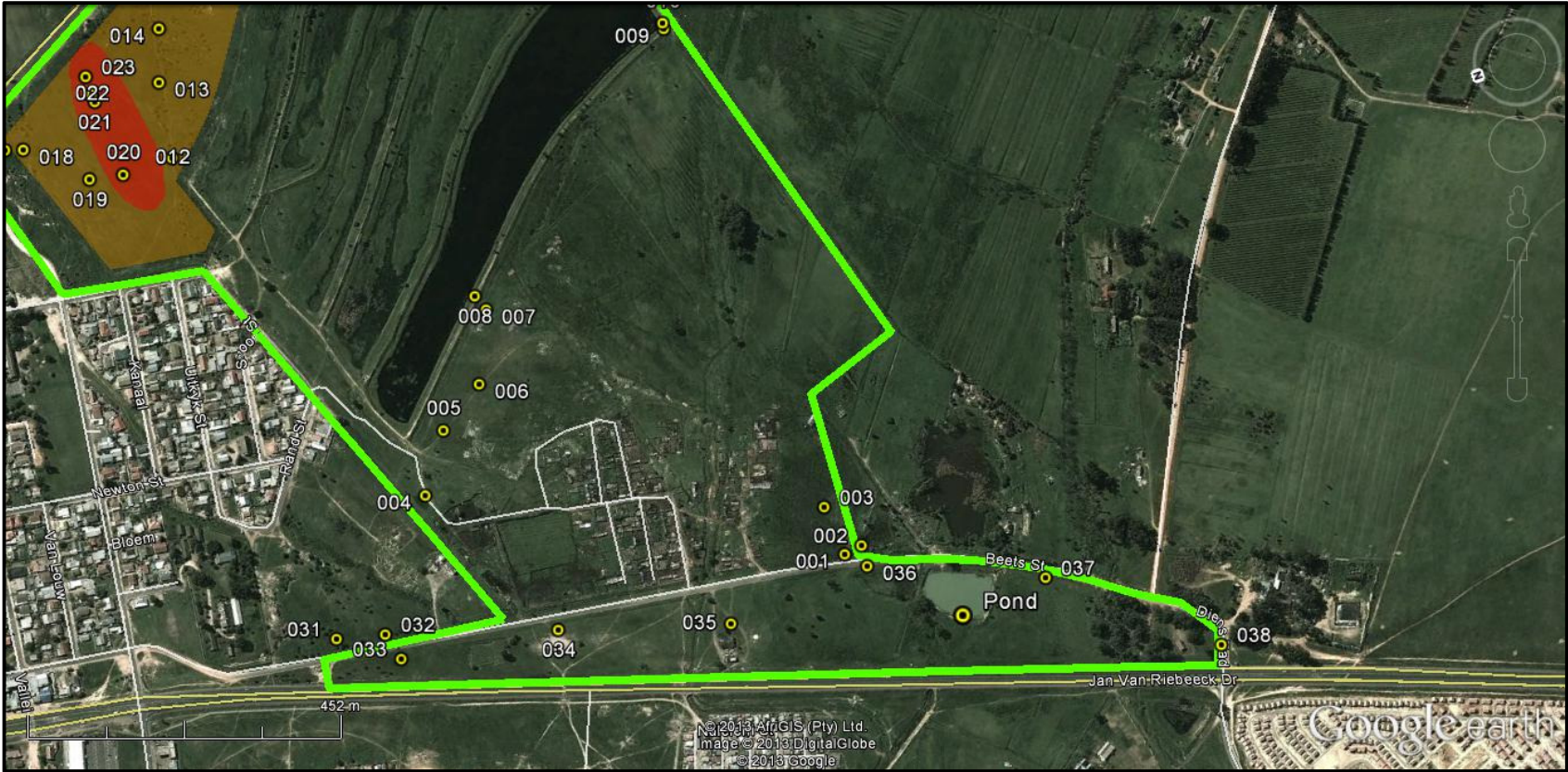


Figure 4. Google Earth™ aerial image showing the western portion of the proposed Vlakkeland housing development. The sample waypoints are indicated (numbered yellow circle icons).

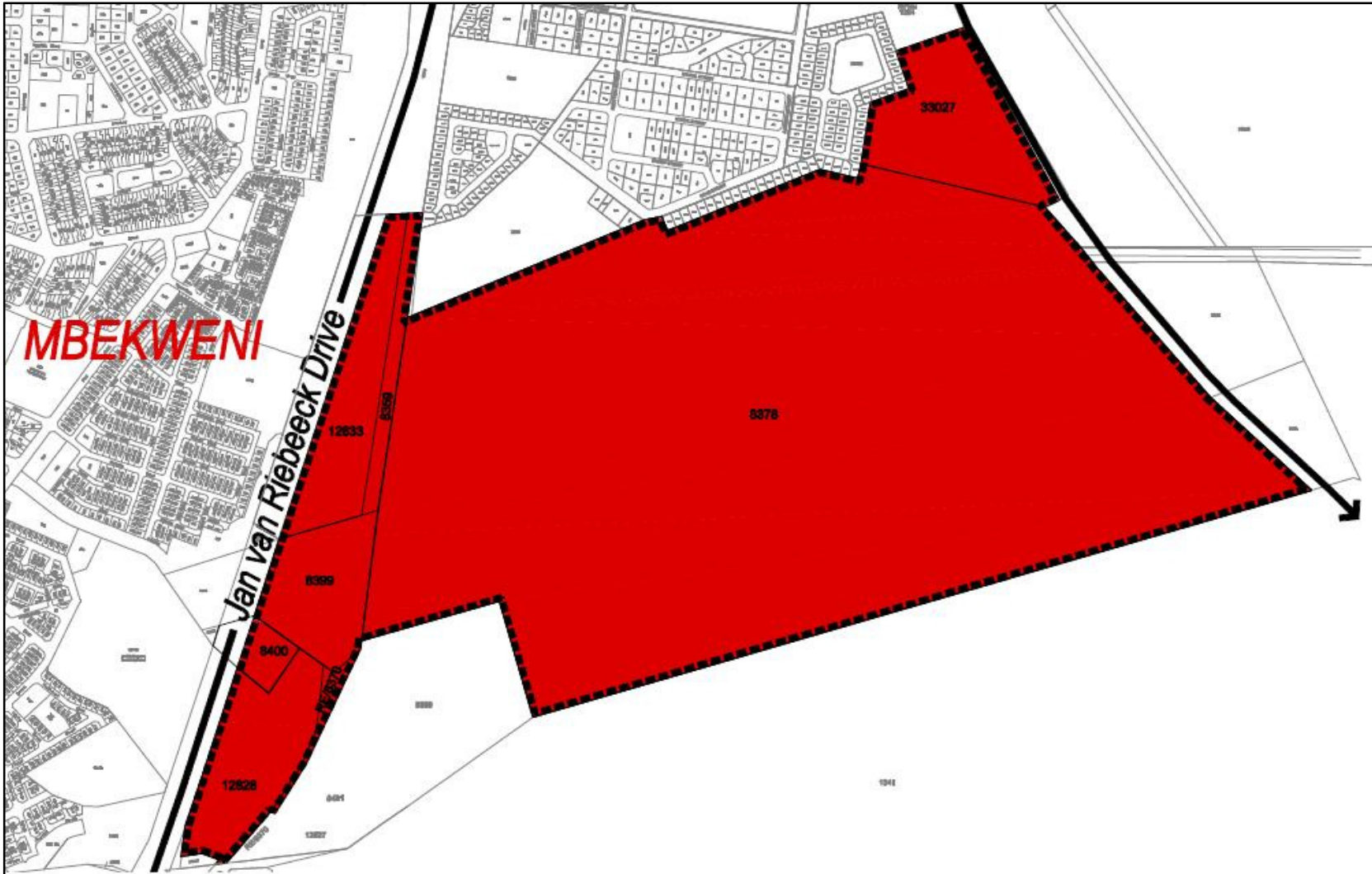


Figure 5. Site layout of the proposed Vlackeland housing development.

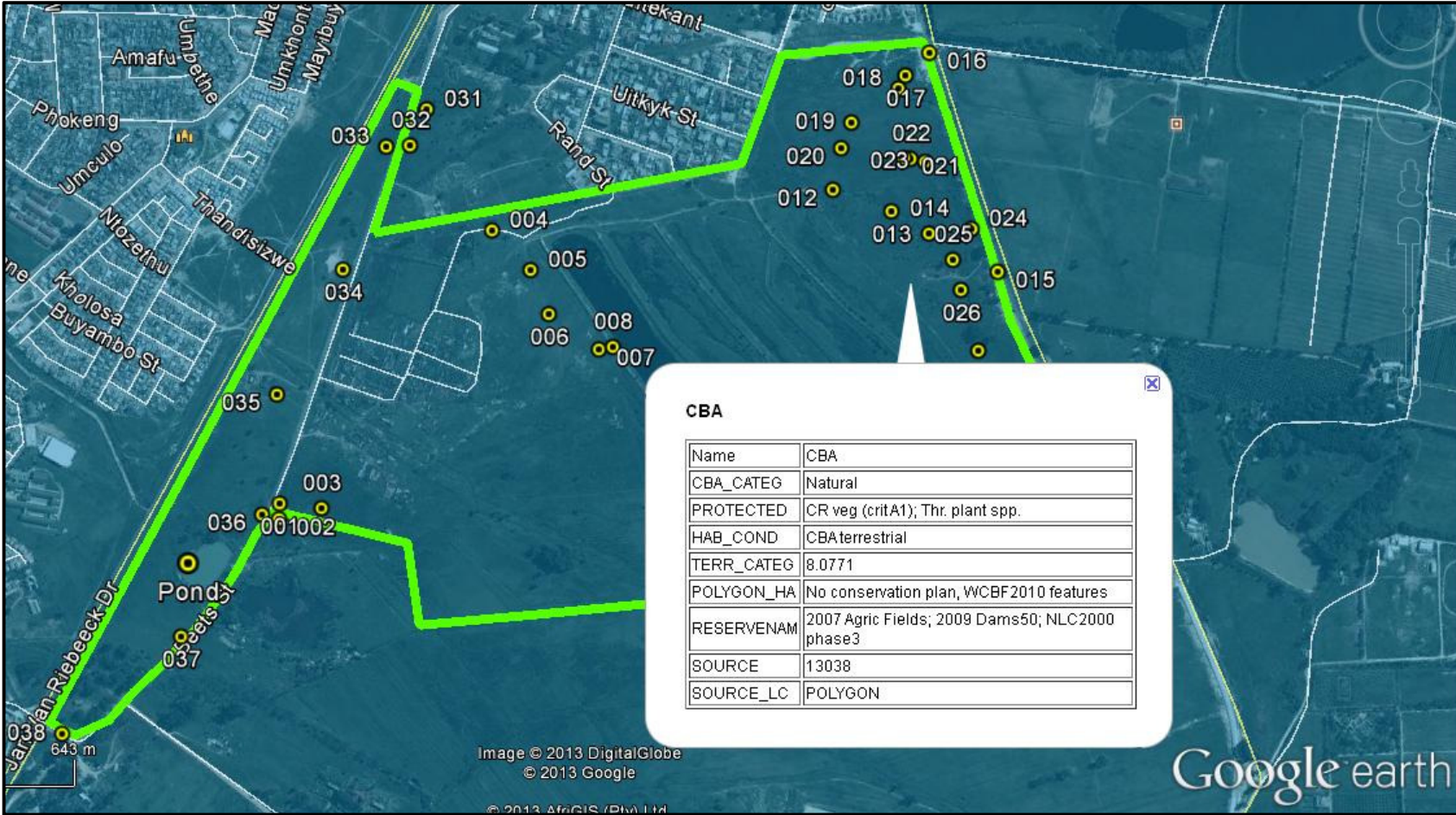


Figure 6. Critical Biodiversity Areas recognized in the Western Cape Biodiversity Framework (Kirkwood *et al.* 2010). Ground-truthing of this area confirms the presence of threatened species.

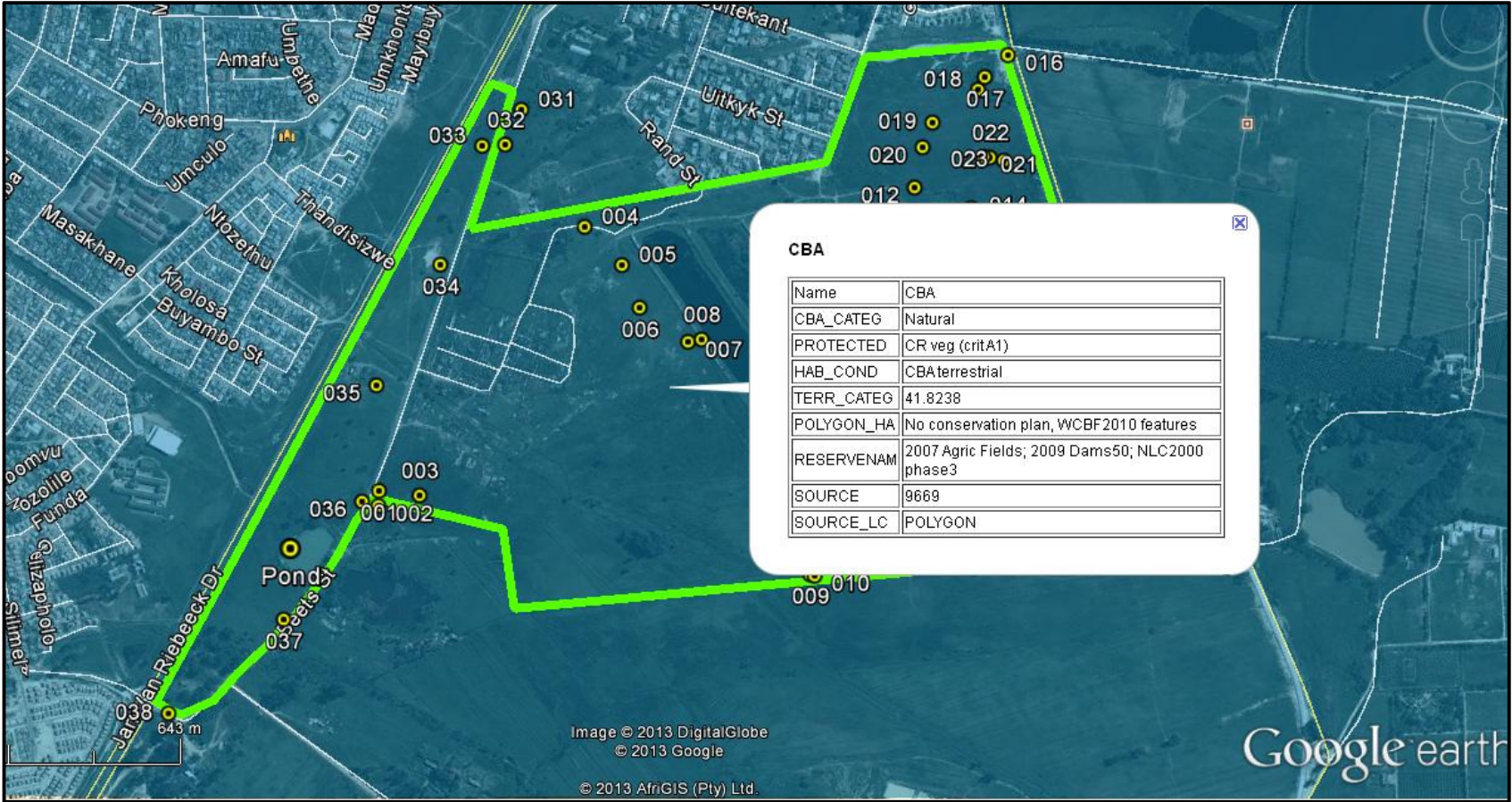


Figure 7. Critical Biodiversity Areas recognized in the Western Cape Biodiversity Framework (Kirkwood *et al.* 2010). No threatened species were found in this area during the 2010 and 2013 surveys.

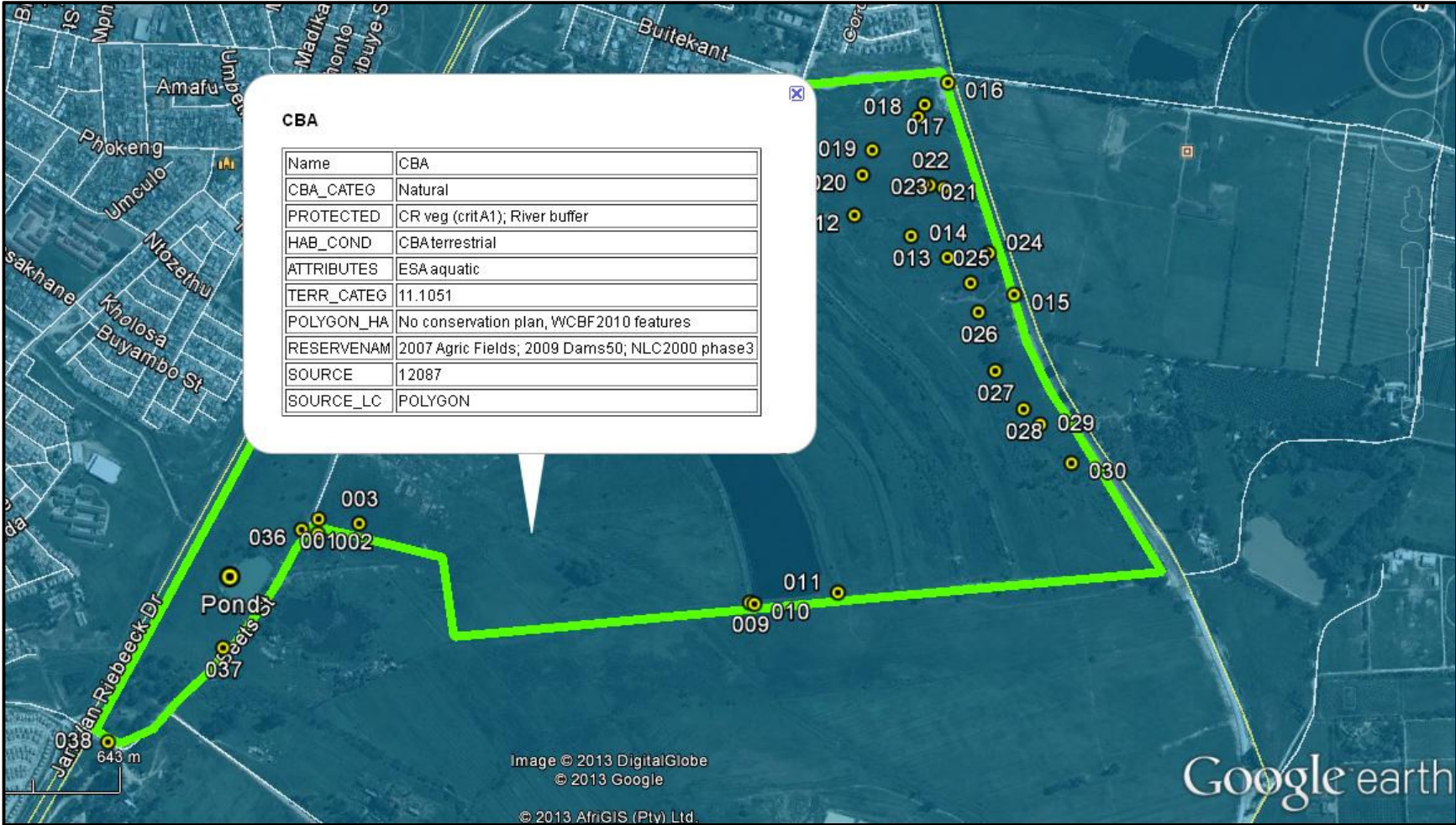


Figure 8. Critical Biodiversity Areas recognized in the Western Cape Biodiversity Framework (Kirkwood *et al.* 2010). No threatened species were found in this area during the 2010 and 2013 surveys.

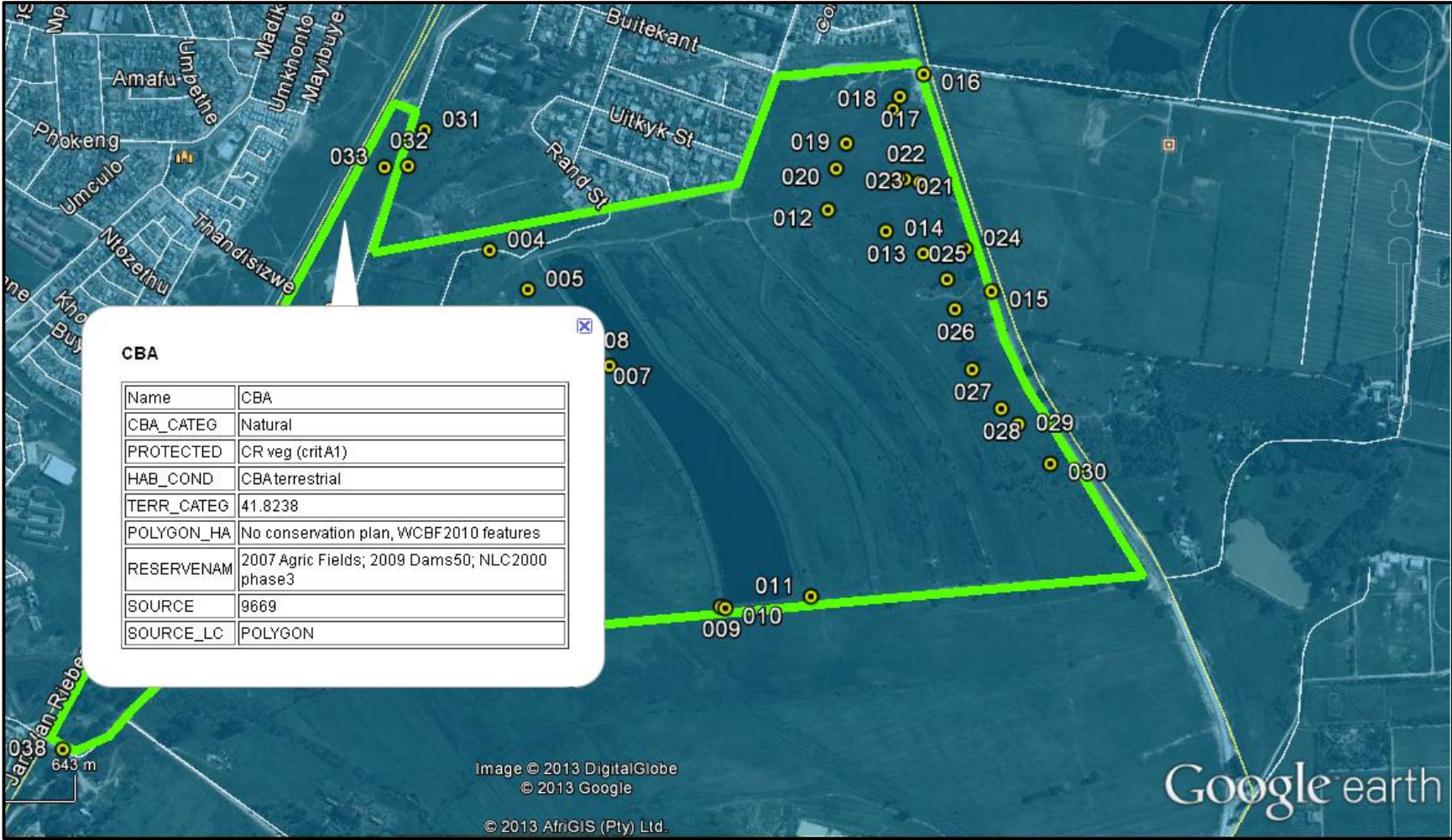


Figure 9. Critical Biodiversity Areas recognized in the Western Cape Biodiversity Framework (Kirkwood *et al.* 2010). No threatened species were found in this area during the 2013 survey.

References

McDonald DJ. 2010. Botanical Scan for the Proposed Housing Development on Erf 8378 Paarl (Vlakkeland), Drakenstein Municipality. Bergwind Botanical Surveys & Tour CC. 23 May. Latter-Report addressed to Pieter Badenhorst Professional Services, P.O. Box 1058, Wellington, 7654.

Kirkwood, D., Pence, G.Q., & von Hase, A. 2010 Western Cape Biodiversity Framework: Critical Biodiversity Areas and Ecological Support Areas of the Western Cape. A C.A.P.E. Land-use planning project. Unpublished Project Report.

Red List of South African Plants. Web reference accessed at www.redlist.sanbi.org on 2 July 2013.

Appendix 1. Summary of Red List Status of important species found at Vlakkeland (www.redlist.sanbi.org).

Spiloxene alba: **VULNERABLE B1ab (ii,iii,iv,v)**: EOO 8500 km², 26 subpopulations have been recorded of these 13 have been lost due to urban development of Cape Town and Stellenbosch, and crop cultivation around Malmesbury and Wellington. Remaining subpopulations are severely fragmented and loss to urban development, crop cultivation and encroachment from invasive alien grasses and is continuing

Gladiolus recurvus: **VULNERABLE B1ab (ii,iii,iv,v)**: EOO<4000 km², persisting at eight locations. It has lost habitat to wheat, vineyard, olive and deciduous fruit cultivation over the past 100 years. All locations are under threat from ongoing agricultural expansion and the reserves that protect two subpopulations are infested with invasive alien plants.

Monsonia speciosa: **ENDANGERED A2bc**: A population reduction of >50% is estimated based on >70% habitat loss to agriculture and urban development over the past 80 years. This is a long-lived resprouter, generation length is at least 30 years.