

Figure 1. Protected areas in the Eastern Cape

In October 2018, Indalo (as a non-profit organisation representing its members), signed an agreement with the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) to declare the 70 000ha of land owned by Indalo members as a “Protected Environment”.

As explained in the NPAES (2016), such formal, contractual agreements between landowners and protected area agencies are a much more cost effective way to improve biodiversity stewardship and expanding protected areas than land acquisition. Incentives used to support landowners entering to such arrangements can include: “Fiscal incentives, technical and professional advice and support, management assistance and support, partnerships in

“The mission of Indalo is to foster a pattern of land use that is ethically accepted and that is conducive to social responsibility, biodiversity preservation and ecologically sound wild area management on privately owned land” (Indalo Constitution, 2019).

nature-based commercial ventures, and access to marketing resources” (NEPAES, 2016:55). In exchange, the landowners agree to certain biodiversity management practices, and restrictions on land use for other

purposes.

With Indalo now designated as a 'Protected Area' its designation could be used to argue against mining operations, for example, Shell exploration on its boundaries relating to fracking and windfarms. It is also hoped that it would provide some protection from land appropriation.

The establishment of the 'Protected Area' status (facilitated by ECPTA, in an agreement with DEDEAT) required that each individual reserve appointed Indalo as the management authority to enable Indalo to sign the agreement with DEDEAT MEC. The properties are no longer seen as farmland, but as conservation land. Also planned is to have tax/VAT benefits, but these have not yet been implemented. The formal designation as 'protected environment' has advantages, but it is uncertain as to how effective it will be as it still has to be tested in practice. While conservation of animals is seen as important by DEDEAT, its focus is mostly related to vegetation types being protected, rather than animal species.

For members, the 'Protected Area' designation has no additional costs (as members should have been involved in conservation management practices already). Members are audited, but it is a self-regulated audit (paid for by Indalo). It is not anticipated that the new designation would change environmental management practices or conservation practices going forward.

4. THE CONTRIBUTION OF TOURISM TO SOUTH AFRICA

In 2018, Statistics South Africa released the Tourism Satellite Account (TSA) for South Africa (StatsSA, 2018). Satellite accounts are based on the National System of Accounts that each country has, and by which the size and growth of national Gross Domestic Product (GDP) is calculated. "Satellite" accounts are used to track the contribution of sectors, like tourism, that are not analysed specifically in the National System of Accounts. Tourism activities (supply

"The Tourism Satellite Account provides stakeholders (governments, entrepreneurs and citizens) with reliable data to assist them in the design of public policies and business strategies for tourism and for the evaluation of their efficiency" (Statistics South Africa, 2018:4).

and demand of tourism goods and services) are included in GDP, but are embedded in other sectors, and are thus not directly observable.

The TSA (StatsSA, 2018) showed that tourism direct GDP grew from

R124 963 million in 2016, to R130 250 million in 2017. This represents an annual growth rate of 4.2%, which is much faster than the national GDP growth rate in this period. The tourism

sector directly employed 722 000 people in 2017, which represent 4.5% of all jobs in South Africa. Employment in the sector is also growing quickly, with a growth rate of 4.6% between 2016 and 2017. In 2017, there were nearly 15 million non-resident (foreign) visitors to South Africa, 68.7% of whom were tourists. Spending by foreign (inbound) tourists totaled nearly R121 million, and domestic tourism expenditure added an additional R156.4 million. As shown in Table 3 (StatsSA, 2018:2), the provisional figures for 2017 show a slight decline in inbound tourism expenditure, although domestic tourism expenditure continued to grow. As a percentage of GDP, tourism contributed 2.8% in 2017, which compares favourably with the contribution of Agriculture, Forestry and Fishing, which had a 2.4% contribution in 2017 (StatsSA, 2017).

Table 3. Finding of the Tourism Satellite Account for South Africa for 2013 to 2017

		2013	2014	2015	2016	2017
<i>Inbound tourism expenditure</i>	Rm	94 183	106 728	108 760	121 400	120 979
<i>Annual growth in inbound tourism expenditure</i>	%	10.3	13.3	1.9	11.6	-0.3
<i>Domestic tourism expenditure</i>	Rm	124 137	133 990	122 835	143 562	156 437
<i>Annual growth in domestic tourism expenditure</i>	%	8.4	7.9	-8.3	16.9	9.0
<i>Tourism direct gross domestic product</i>	Rm	103 349	112 571	109 503	124 963	130 250
<i>Tourism direct gross domestic product as</i>	% GDP	2.9	3.0	2.7	2.9	2.8
<i>Jobs in producing goods and services purchased by visitors</i>	No.	657 766	681 915	669 653	690 261	722 013
<i>Jobs in producing goods and services purchased by visitors</i>	% growth	4.4	4.5	4.3	4.4	4.5

The tourist goods and services provided by Indalo members to both foreign and domestic tourists are captured in a number of categories in the TSAs including: Tourist guide services, Nature reserve services including wildlife preservation services, Hotel and motel lodging services (amongst other accommodation services), and food and beverage services.

In 2016, the Department of Tourism released its Tourism Strategy (2016/16 – 2019/20), in which it acknowledged the growing role of the sector in economic growth and job creation as

South Africa transitions from a resource-based to a services economy. The mission of the Department of Tourism is “To grow an inclusive and sustainable tourism economy through good corporate and cooperative governance; strategic partnerships and collaboration; innovation and knowledge management; and effective stakeholder communication” (Department of Tourism, 2016:7).

In addition to contributing the National Protected Area Expansion Strategy, Indalo members are thus also contributing to the development of a sustainable South African tourist industry through their marketing activities, job creation and skills development, and value added to GDP.

5. DESCRIPTION OF INDALO PRIVATE GAME RESERVES

All ten reserves responded to the questionnaire. Of these eight were members in 2008. Nine reserves are situated between 75 and 160km from Port Elizabeth in the Eastern Cape with one in the Nieu Bethesda/Graaff-Reinet region of the Great Karoo, 350km away.

Member reserves can be considered as ‘mature’ – significant experience in the game industry - having been established between 1990 and 2007. Of these half were established by 1999 and nine out of ten by 2004. While there has been a change in ownership over the period since establishment, in some instances the Reserve Managers have been in place for a considerable period and in at least one case, for more than a quarter of a century. The 10 Reserves collectively can claim more than 200 years of experience.

As in the 2008 sample, Indalo PGRs are mostly private registered companies with several shareholders, but includes the owners of the land previously commercially farmed that created a partnership to form the PGRs with up to 10 lodges run as independent businesses (employing their own staff), but having a single Reserve Manager and undertaking various operations as a unit.

The Indalo member reserves were established typically by incorporating between three and ten (on average eight) surrounding properties and converting the land from mainly extensive

livestock farming to game reserves. As reported in 2008 the reasons for establishment were chiefly as a result of declining profitability of livestock farming following severe drought conditions experienced in the late 1990s, an interest in wildlife conservancy and top-end tourism. Each reserve followed a different path from first established. These paths include a reserve established partly with foreign funding primarily to uplift local communities through the eco-tourism by establishing a luxury safari destination as the means through which increased employment and economic benefits could be realized for rural Eastern Cape communities. In the case of two reserves the original aim was to create a game farm with upmarket accommodation as a holiday property, but later changed focus. Another reserve was initially proposed as a development to build 30 houses but also later the focus was changed to tourism. Another initially had education as the primary motivation for establishment.

The reserves vary considerably in size, ranging from 672ha to 28 000ha, the median being 7 700ha. The total area covered is 94 438ha. Where comparisons are made in this report, the same classification was used as for the 2008 report, the reserves were divided by size: small being less than 4 000ha; medium between 4 000 and 14 000 and large classified as more than 14 000ha. Divided into the three groups, the 'small' averages 1 933ha, the medium-sized 8 156ha, whilst the 'large' (23 900) are twelve-fold the size of the 'small' reserves. The average of all the reserves is 9 438ha compared to the 2008 sample average of 10 106ha.

Ninety per cent of the surface area of the reserves is classified as 'veld' (natural grazing) with less than 8% devoted to cropland, planted pastures and plantations, while the remainder of the area consists of buildings and internal roads. In terms of veld types, thicket vegetation occupied 41%, savanna 19%, grass 18%, forest 7%, Nama Karoo 6%, Fynbos 4%, 'other' 11%.

6. THE MAIN FOCUS OF INDALO PGRs: WILD-LIFE TOURISM

With two exceptions, game viewing – especially the 'big five' – was the most important revenue source for the reserves, with accommodation next most important, although the two are complementary as game viewing without accommodation is the exception rather than the norm. Several PGRs reported 'game viewing and accommodation' as the income source,

averaging 90% of Gross Income. Where 'game viewing' and 'accommodation' was separately reported, the former was typically estimated as producing 60% of Gross Income, while accommodation contributed 30%. In one case the game is complementary to accommodation and in a second, game is integral to education and training, which is the main income source. Other lesser sources of income of the eight PGRs focus on game, included hiking, conferences and sales of game and memorabilia and education and training.

One Indalo member stands apart in two major respects. It is a non-commercial nature reserve that for two decades of its existence relied on funding from abroad; and its focus on education, training and skills development with wildlife being the context and environment in which the training is conducted. The training, which is recognized by the Field Guides Association of Southern Africa, includes the placement of South African tertiary education students for a year's internship as well as accommodating MBA students from Erasmus University. The aim now is to shift to a more business-oriented focus.

Each reserve claimed specific features that differentiates it. For example, the proximity to a 13km stretch of pristine beach; forest and a riverine estuary of 10km in the reserve; spectacular natural scenery; its topography; a diversity/density of wildlife; frequent sighting of big cats; easy proximity to Port Elizabeth's airport; good roads; luxury lodges; a diversity of lodges; being malaria free; the quietness of the wilderness; and the clear night sky uninterrupted by light pollution. A member of the Amakhala PGR successfully had a lodge "Fair Trade certified" in 2008, which was a first for PGRs in the Eastern Cape. The advantage is that has given the lodge owners "peace of mind that their business is operating in a good and responsible way." It offers a unique selling point and delivers guests making it financially beneficial. Others have subsequently attained or are in the process of obtaining Fairtrade certification.

Tourism at PGRs is invariably seasonal. High season is typically from November to March, with the 'in-season' period stretching from September/October to April/May. Some PGRs offer 'low season' rates from after the Easter public and school holidays (April) to the end of August.

Game, plants and birds

For security reasons PGRs did not report on their rhino holdings, if any. In one case, all rhino had been disposed of, in order to obviate the risk of poaching. Game species within the reserves include: lion, rhino, elephant, buffalo, giraffe, zebra, wildebeest, leopard, cheetah, hippo, kudu, impala, springbok, bontebok, blesbuck, eland, sable and oribi. Many bird species are present, including Blue Crane in the reserve in the Karoo.

Eight reserves supplied species lists. Mammals headed the list, followed by birds, invertebrates, reptiles and trees and other plants. In some cases the actual numbers were not available, but they were known to be present. Clearly, the reserves are a haven for much else besides mammals, which is mostly what tourists wish to see, but serve to enrich the experience.

Accommodation

Visitors on average spent 2.4 nights and 2.7 days at the Reserves. The type of accommodation offered was typically in the form of Lodges that were able to cater for 622 visitors in total, Guest Houses for 32 and 64 in Tented Camps. Lodge accommodation, which includes game viewing, at the top of the range were priced at between R5 000pp/n and R12 500pp/n, while a few Reserves offered lower range lodge accommodation at between R3 500 and R8 000. Tented camping ranged from R4 000 to R5 000pp/n.

Table 4: Average Lodge rates, by reserve size

Reserve size	Rand pp/n
Small	6 100
Medium	7 690
Large	10 750
All (average)	7 840

Some reserves offer different levels of services at lodges and tented accommodation, with rates set accordingly, but there was too limited information to provide average data.

The total number of beds at 718 constitutes an increase of 46% on the 491 beds available in nine reserves that returned data in 2008 in which year the unadjusted average person per night charge was R3 606.

Visitors: Tourist Origins

The majority of visitors – 83% - are from abroad, with 78% from Europe, 13% from the United States of America and ‘other’ foreign countries (9%). Of local South Africans, 53% hailed from the Eastern Cape, with the remainder from further afield. The total number of tourists rose from an estimated 55 000 in 2014 to 72 000 in 2018.

Table 5. Total number of Tourists 2014 to 2018

Year	TOTAL
2014	55 440*
2015	59 010*
2016	65 038
2017	71 929
2018	72 119
% Change	30

*estimate calculated on less than a full sample

It is interesting to note that while small and medium-sized reserves on average had increased numbers of visitors over the five-year period, three of the ten reserves had fewer tourists in 2018 than the previous year, and ‘large’ reserves suffered a 8% decline between 2014 and 2015, which is most likely to be an indicator of prevailing economic conditions rather than a decreased interest in wildlife tourism.

Table 6. Average Tourist numbers by PGR size, 2014 to 2018

Year	Small	Medium	Large
2014	1 486	7 203*	7 483
2015	1 835	7 896*	7 013
2016	2 174	8 377	8 316
2017	2 489	9 635	8 144
2018	2 523	10 144	6 916
% Change	70	40	(8)

*estimate calculated on less than a full sample

While there was an 8% decline in tourists to the large reserves, no concomitant decrease in the Gross Revenue was experienced during those years, as seen in table 6.

7. INCOME GENERATING ACTIVITIES

Over the five years, 2014 to 2018, Gross Revenue rose from R282m to R570m per annum thanks to a growing number of visitors per year (61 400 on average over the period) of whom 89% were foreign. Table 7 shows the average Gross Revenue by reserve size with medium-sized reserves competing well with larger reserves, although not too much should be read into the figures given the relatively small sample.

Table 7: Average Gross Revenue per PGR (Rm)

Year	Small	Medium	Large	Median	TOTAL
2014	7	38*	48	18	282*
2015	8	50*	56	24	347*
2016	8	50	73	24	422
2017	10	65	98	29	550
2018	12	66	101	38	570

*estimate calculated on less than full sample

Based on a very conservative assumption that all visitors, local and foreign, contributed equal revenue per person, of the Total Gross Revenue of R2.2bn over the five year period, at least R1.9bn would have been brought into the country. What this does not account for is the additional spending in South Africa by foreign tourists. While an inadequate indicator, 6 of

the 10 Reserves were aware of visits to the National Addo Elephant Park by 17% of their visitors. South Africans would have numbered among these, but even if every single local had visited Addo, there would have been at the very least 11% of the foreign visitors – about 7 000 in 2018 - that would have spent elsewhere in the country.

8. EMPLOYMENT AND AGE PROFILE

Indalo members employed 1 531 people in 2018 compared to 1 133 in the Indalo sample ten years earlier. The increase in employees was most notable in small and large reserves, which doubled and increased by nearly half as much respectively, as seen in Table 7.

Table 8. Average Number of employees 2008 and 2018

Year	Small Ave	Medium Ave	Large Ave	All Average
2008	23	147	210	129
2018	50	154	307	153
Ratio 2018/2008	2.17	1.05	1.46	1.19

In 2018, 80% of the employees were black and 20% white. This is compared to 75% and 25% respectively in 2008.

Of the total labour force, 17% had a tertiary or other qualification; 35% had completed Grade 12 Secondary education, while the remaining 48% had been educated at a level below Grade 12. A comparison with the 2008 sample shows increased levels of employee education with a larger proportion completing secondary and tertiary education.

Table 9. Employee levels of education, 2008 and 2018

Year	Less than Gde 12 %	Grade 12 completed %	Tertiary & Other %
2008	55	31	14
2018	48	35	17

In 2008 nearly two-thirds of employees were in the 'less than 35 year old' category compared to 40% in 2018 indicating the stability of employment in the reserves. In 2018 33% were between the ages of 36 and 55 (36% in 2008); while 6% were 56 years or older (3% in 2008). Seventy percent of employees were primary wage earners, with an estimated number of dependants that ranged from two to eight, with an average of 5.3. A survey conducted by the Amakhala Foundation determined the dependency to be 3.6 persons in 2018.

Typically, employees were housed by the PGRs either on the Reserve itself or on surrounding properties; five provided food as part of the remuneration package; pension and medical aid contributions were made by four and three reserves respectively. These benefits were reckoned at R12,6m, excluding statutory Workmen's Compensation and Unemployment Insurance contributions .

Some tasks are outsourced, in particular, the purchase of fuel, WiFi, game capture, installation of water and solar systems. Veld assessments had been conducted for three reserves. Eighty eight per cent of outsourcing was to Eastern Cape suppliers; 11% from the Rest of South Africa and 1% from suppliers abroad.

Experience in Sourcing staff

Staff are generally sourced from local communities, although reserves report that it is not easy to find appropriately experienced staff across all roles/tasks required. Semi-skilled staff are not as easily recruited locally, while skilled staff, in particular posts as Chief Chef, Game Guides, rangers and managers need to be advertised nationally. At the same time reserves are working on in-house training and internal promotion of present staff and recruiting local community members to fill more skilled positions, which is regarded not only as an ethical responsibility, but to ensure long-term sustainability.

Staff health

An issue faced by some reserves is the prevalence of HIV/AIDs. Reserves varied in their experience with 'poor' health status as being fairly limited to a handful of individuals, [but that] it was very difficult to pinpoint as only one or two individuals had disclosed their status." On the other end of the scale it was stated that "there are numerous working staff with HIV, and many have died of AIDS. Overall the infection rate is lower than what would be found in a larger town. Staff are offered support and a mobile clinic comes to the reserve to dispense retro-virals." A clinic had recently been established in a nearby village, which enabled staff to receive medication, while others were transported to Grahamstown quarterly. The major impact to date was the extent of sick leave taken. One of the larger reserves found it necessary to employ a full-time social worker to provide prophylactics and ongoing education and awareness campaigns.

9. COMMUNITY ENGAGEMENT

Indalo members are actively engaged in a variety of community projects. Community engagement at a local level has been achieved by Indalo members, for example, by training their own staff that live in surrounding villages and towns, in health care of domestic animals, particularly dogs; skills training in finances, hospitality, parenting and leadership; the deployment of students-in-training, for example, to assist with providing computer skills at local primary schools.

Managing expectations of communities has proved to be difficult, for example, reserve outreach programmes for local livestock health care and meetings between local communities and reserve staff have been taken over – hijacked - by political functionaries who have claimed the programmes to have been provided by 'the party.' A recent request has been made to a reserve to provide land, livestock pens and water supply systems.

All members have programmes. In several cases Foundations have been established, for example, the Born Free sanctuary operated by Shamwari, the Amakhala Foundation, Kwandwe's Ubunye Foundation, the Kariega Foundation, Pumba's Conservation & Social

Responsibility Foundation and the Bergplaas van Lippe-Biesterfeld Foundation. By way of example only, a few cases are explored in more detail.

The Born Free Sanctuary, accommodates up to 20 animals that have been rescued from a range of plights in captivity. The focus is on education and awareness – usually including a reserve tour - through an outreach programme for local schools and communities on 4 to 5 days a week under the leadership of a Senior Education Officer. The educational focus is mostly on animal rights rather than on rehabilitation as, typically, it is not possible for abused animals to be released successfully. The operational budget of R1.5m annually is covered on a 50/50 basis by the reserve and international sponsors. The reserve is in the process of establishing a Rehabilitation Centre as a separate exercise to treat injured animals for release into the wild. It is the intention of the reserve that visits to the Centre will be offered as an optional extra for tourists. Clearly, both initiatives would make a positive contribution to marketing.

The Amakhala Foundation, run by Dr Jennifer Gush, established in 2009 is funded in part by 50% of a Conservation Levy of R125 a night paid by guests in the accommodation at the PGR. Its programmes, conducted from the Amakhala Conservation Centre, which reach more than 2 000 young people a year, include:

- Environmental education for local primary school children
- Secondary school pupils that learn about habitats and ecosystems, and rhino
- University students from Rhodes and Nelson Mandela University involved in specialized research in the reserve
- Crafting for unemployed members of the local community, the products of which are sold
- Assistance in financing the purchase of property and developing the independent Isipho Charity Trust, operating in Paterson, that supports 300 pre-school children
- A volunteer programme that assists in conducting an after-care programme, computer classes and general maintenance of the Isipho property;
- Reserve staff member in-house training and up-skilling; and
- A bursary programme to cover fees for primary school children of staff at a local school.

Bergplaas Nature Reserve is particular in that it stands alone in its structure and purpose in its membership of Indalo in that education and training, rather than Wildlife Tourism is its focus. In 2006 the owner, Princess Irene von Lippe-Biesterfeld of the Netherlands, started

The *Spirit of the Wild* certificate programme that aims to develop “a deep and personal experience of the wild.” The aim to “connect people to the wild” is achieved through one- to three-week programmes with up to 20 participants at a time. The not-for-profit programme can be viewed as community outreach as it is supported solely by donations and grants, which has enabled wide participation, ranging from conservation students who grew up in squatter camps to senior executives.

Kwandwe established a rural development trust, the Ubunye Foundation, in 2002 that operates in approximately 40 communities in and surrounding the reserve. It contributes to the work of the foundation through levies raised from visitors (over R1m in 2019) and more than R2.5m over the last three years through initiatives in the agricultural sector. It is involved in Early Childhood Development services, improving rural health care systems, supporting rural micro enterprises and improving the financial resilience of rural households through community based savings schemes and financial education. The Ubunye Foundation is said to benefit over 4000 people living in the rural communities in its area of the Eastern Cape.

10. Future Plans

In response to a statement that “there are too many private game reserves in the Eastern Cape for the number of tourists who come here” five of the ten Reserves indicated that they ‘strongly disagreed’ with the statement, four ‘mildly disagreed’, while one ‘mildly agree.’ None reported ‘strong disagreement.’

In terms of plans for the coming five years (2019/20 to 2024/25) there was no obvious differentiation by reserve size. Five reserves intended increasing the number of beds, nine intended increasing the size of the reserve, eight proposed to expand both their community engagement and environmental education. Five reserves would seek to expand the range of species and five would explore further their BEE status.

Conservation plans currently in operation and matters of concern to reserves are reported in Table 10. The most prominent are dealing with alien vegetation, water availability, soil erosion and problem animals. Whereas the chief concerns and motivation for the establishment of Indalo a decade ago were the need to make a case for the use of farm land

for reserves, to show that jobs had been created, and had contributed to community development, the concerns had shifted to the potential visual impact of wind farms and to a lesser extent the possibility of mining/fracking on the experience of guests.

Table 10. Conservation plans in place and issues experience by reserves, 2018

Plan Items	Reserves with current plans	Issues experienced	Reserves with issues
Key species	10	Rare plants	5
Stocking rate	10	Problem animals	7
Carrying capacity	10	Carrying capacity	5
Alien plant removal	9	Invasive plants	10
Water management	9	Water availability	8
Soil conservation	9	Soil erosion	8
Ecological assessments	8	Biodiversity	5
Monitoring programmes	8	Poaching	6
Other programmes	4	Other	1

Conservation plans that reserves are implementing and intend to continue include reserve management issues in its broadest sense, that is, managing vegetation and wildlife in conformance of carrying capacity, collection of data for action based on evidence, mapping and removal of aliens, such as *Lantana camara*, *Cestrum laevigatum*, *Acacia measii*, *Melia azedarach*, *Acacia saligna*, *Sesbania punicea*, *Agave Americana*, *Opuntia spp.*, *Eucalyptus spp.*, *Pinus spp.* The introduction of cheetah and leopard, the addition of a lion pride and expansion of black rhino, and the introduction a breeding programme for white rhino.

The current drought had resulted in the degradation in veld condition and a corresponding decline in population performance (breeding rates and general condition). Most reserves reported that there had been no major losses due to malnutrition as of April 2019, although one reserve had tallied 300 animals that had perished. Some reserves were forced to buy in supplementary fodder, the first time in 17 years in one case. There had been a decline in availability of surface water from rivers in the area and a number of boreholes had dried up. Several reserves had expended considerable amounts on water reticulation systems.

Reserves were investigating the viability of less water and better maintained water points with reduced evaporation. A high quality road system was being investigated for improved run-off. A further consequence of the drought was an increase in veld damage due to fire.

Challenges faced by Reserves

The main concerns expressed by reserves regarding their medium and long term sustainability was a “radical increase in security and anti-poaching at enormous expense, [which] now occupied 50% of the reserve operational budget.”

There had been a rapid increase in warthog population growth. A reserve had experienced problems with an elephant bull charging game vehicles and rhino bulls fighting and causing injuries.

Clearing invasive vegetation was proving to be a major source of expenditure which had exceeded R5m over a 3-year period.

The way in which rhino poaching has impacted operations is that Indalo has upped the security for its members. Rhino poaching in the Eastern Cape became a major issue from about 2008 and has continued sporadically since. For example, a member reserve had two rhino poached in 2011, which was followed by an armed attack on the Reserve Office with the attackers demanding rhino horn. It is estimated that Indalo members spend in excess the region of R20m annually on anti-poaching. The employment of an expert on human and drug trafficking, has led to important prevention measures – uncovering poaching gangs - and have been instrumental in arrests of poachers with the assistance of the SA Police Services. Individual high profile cases in the Eastern Cape have involved game reserve staff, for example, in the case of a non-Indalo member, the poachers arrested in possession of rhino horn, equipment and rifles, had actually reconnoitred several reserves before striking. Poaching has necessitated stepping up the very careful screening of staff and gate guards to obviate the possibility of bribery. A reserve reported an expenditure of R15m since 2010 in its rhino security measures. Another put its annual expenditure at R2m to R3m/annum on rhino security. A reserve manager expressed the opinion that “the problem will never be

tackled effectively without government support in policing and policy making, especially legalizing trade in rhino horn to ensure proceeds are ploughed back into conservation.” It was noted that Indalo’s Rhino Poaching Unit’s efforts in gathering intelligence and its work with the Authorities had served as a good deterrent.

Another concern of reserves is international perception of safety for tourists visiting SA and the government’s approach to understanding the need to create an attractive and sound tourism marketing plan that can be confidently and effectively executed.

The increase in the number of wind farms and visual impairment, the threat of expropriation without compensation, the unreliability of energy supply and its affordability, the decay of national infrastructure, and political instability were all listed as concerns for the future.

Code of Ethics

Reserve managers were requested to list up to five practices that should be encouraged/discouraged in a ‘code of ethics’ that would guide the behaviour of game reserve owners. These ranged across a wide spectrum and clearly members of Indalo would require a good degree of debating to reach a consensus. Among those that found traction were statements regarding:

- Ethical management of wildlife on scientifically based data
- Non-consumptive reserves
- Mandatory ‘green’ practices
- Staff recognition and skills development
- Strategic community engagement/ social responsibility /stewardship
- Greater respect for animal privacy
- Grading of the game drive experience
- Support for Fair Trade Tourism

11. POLICY ISSUES

Challenges in the Establishment of Reserves

The most difficult aspects of establishing a reserve were suitable land acquisition, the rehabilitation of agricultural ground and removing of farming infrastructure, the costs involved in fencing, lodge development, forging a name in the competitive eco-tourism environment, disabling legislation and cumbersome EIA processes and long delays in decision-making in obtaining permission and approvals, for example, a three year wait for the approval of the opening of a lodge.

On the other hand, the easiest, least troublesome aspects were that wildlife is hardier and more resilient than domestic livestock, even in drought conditions and therefore less management intensive. The rapid way in which nature returns to a good condition once give the opportunity; continuity once a (good) reputation has been established, the introduction of wildlife. A manager who had been in the profession for a long time observed that given the length of time that reserves have been in operation, there were now plenty of people to ask for advice.

Current Sustainability Challenges

Important obstacles faced in the foreseeable future include the ability to maintain tourism levels in the light of local and global uncertainties, the government's attitude and perceived lack of support towards tourism, land expropriation, crime levels, political insecurity, rhino poaching, and the spill-over of 'unsuitable' projects, such as wind farms.

Received and Desirable External Support

The support received that has been received by national and local government, tourism agencies, local authorities and other institutions ranged from 'nil' to 'good' by reserve managers. Positive support from ECPTA was noted in the process of the Protected

Environment declaration and other Indalo members, despite being competing businesses, were prepared to offer advice and support.

Government Actions for Sustainability

The ways in which agencies could support PGRs was 'greater policy clarity and engagement in policy formulation,' greater engagement in the issuing of permits and issues facing game reserves that would reduce the frustrations in efforts to follow the letter of the law. Game reserves are of the opinion that they are overlooked when it comes to financial incentives and support, such as drought relief. That game reserves employ more people per hectare or do more for communities than other businesses is overlooked as PGRs are still looked at as 'a rich man's playground.' More promotion and effective marketing of both national and private game reserves, the upgrade of the Port Elizabeth airport and promotion of the Eastern Cape as a tourist destination for foreign visitors, the upgrade and maintenance of roads, safety and security.

Finally, the three most important actions that the government could take to assist in the establishment and medium term sustainability are: stable political and financial stability, industry specific laws and incentives for game reserves, an overhaul of the legal aspects of permits and procedures, land security, crime prevention and safety.

12. CONCLUSIONS

This report has reviewed the social, economic and environmental contributions of the Indalo association of private game reserves (PGRs). Results show that Indalo members play an increasingly important role in biodiversity stewardship, which has been formalized through the declaration of a “Protected Area Environment” through DEDEAT in 2019. Together, Indalo members protect more than 90 000 ha, much of which is part of currently only “Moderately” or “Poorly” protected bio-zones.

Through their anti-poaching activities, Indalo members also play a role in protecting endangered wildlife, especially rhinos. The rise in poaching activities in recent years has necessitated considerable spending by PGRs on the protection of their animals. Poaching also causes guest security concerns, and Indalo members spend a considerable portion of their budget working against such illegal activities. In some cases, they have been highly successful in working with local police to prosecute offenders.

Indalo members can now be regarded as part of a well-established or mature sector. Most of their revenue (90%) comes from game viewing and accommodation provision (tourist services). Other sources of income include the provision of education and training, hiking, conferences and game sales.

Indalo members also contribute significantly to the tourism sector, which is growing more quickly than the rest of the economy. This can be seen in a 46% increase in capacity (beds) amongst Indalo members since the last study in 2008, and a rise in the total number of tourists from 55 000 in 2008 to 72 000 in 2018. Indalo members also contribute to job creation and transformation: they employ 1531 people, 80% of whom are black South Africans, and 40% of whom are youth (under 35 years old). It is estimated that Indalo guests brought in R1.9 billion in foreign exchange in the last 5 years. PGRs, like Indalo, also play a role in diversifying rural livelihoods, which is an important consideration given the declining profitability of livestock farming, and the drought.

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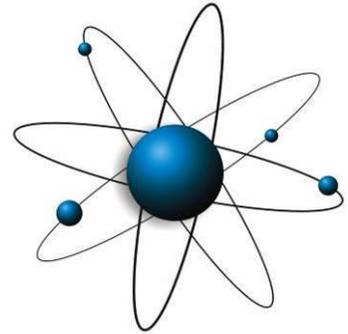
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VISUAL IMPACT ASSESSMENT REPORT

**VIEW SIMULATION AND MOTIVATION
FOR**

**Of
Grahamstown, Eastern Cape**

On Behalf of Indalo



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ABBREVIATIONS

Table 1-1: List of Abbreviations	
CES	Coastal and Environmental Services
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EScience	EScience Associates (Pty) Ltd
GIS	Geographic Information Systems
Ha	Hectare
MP	Mainplaces
REDZ	Renewable Energy Development Zone
SP	Subplace
VIA	Visual Impact Assessment
WEF	Wind Energy Facility

1 INTRODUCTION

An exploration of possible impacts on additional sensitive receptors, and associated findings, was requested by Indalo Private Game Reserve Association (which manages the Indalo Protected Environment comprised of 9 private game reserves) in order to provide additional insight and/or commentary to the Albany Visual Impact Assessment (hereinafter referred to as 'The VIA Report', prepared by Coastal and Environmental Services(CES) in (March 2020), as part of their Draft Environmental Impact Report(EIR).

EScience associates hereby submits a summary of findings, based on the execution of Visual Impact Assessment for the construction of the proposed Albany Wind Energy Facility north of Grahamstown, Eastern Cape, South Africa.

1.1 OBJECTIVES

The objective is (1) to recreate high quality view simulations from the same viewpoints identified by CES in The VIA Report in order to assess the accuracy of their findings, and (2) to execute additional high quality view simulations from additional sensitive receptors, accompanied by a visual impact assessment/appraisal motivating the view simulation results.

While taking heed of the aspects covered in the VIA, the following aspects form the primary focus of this study:

- Accuracy of current view simulations of The VIA Report;
- Addition of night-time view simulations of all viewpoints of The VIA Report in order to assess lighting impacts;
- Adequacy of the scenic quality of the environment pre development;

1.2 AUTHORS AND RELEVANT EXPERIENCE

This report has been compiled on behalf of EScience Associates and Mr JK Geldenhuys (visual specialist and Associate of EScience), with relevant associations and experience listed below:

Authors	Experience
Theo Fischer- Environmental Specialist	20 Years
Kotie Geldenhuys- Visual Impact Assessor	10 Years
James Pugin-Geographic Information Systems	5 Years

2 SCOPE OF STUDY

2.1 TASKS

The following tasks have been performed:

- Familiarisation with project background;
- Preliminary desktop study, incorporating the generation of GIS data (locality, land use, vegetation, morphology, biomes, general sensitivity);
- Preparation of GIS data, pertaining to the topography, vegetation and land use of the area, as well as viewshed analyses and cross sections indicating the visibility of the development;
- Daytime and night-time recordings of VIA selected views and the securing of additional, representative scenic resources as deemed appropriate;
- An extensive audit of the receiving environment's Sense of Place;
- The execution of daytime and night-time view simulations as viewed from current and additional vantage points, providing decision makers with a realistic, representative visual reference of what may be expected.

3 APPROACH

3.1 NATURE OF THE DEVELOPMENT

Guideline for involving visual & aesthetic specialists in EIA processes: Edition 1, by Bernard Oberholzer (2005), classifies this type of development as a Category 5 Development.

The proposed development covers a large area, measuring approximately 19.6 km east-west, by 9 km north-south. It comprises 66 turbines with a hub height of 130m and combined height (tower plus blade radius) of 215 m each, situated on elevated ground, rendering it visible across great distances.

3.2 NATURE OF THE AREA PRE-DEVELOPMENT

- Because of the development's footprint, height, elevation, and subsequent visibility across great distances, the receiving environment is very large, and cannot be characterised easily;
- An area to the south of Grahamstown area is already characterised by the similar, albeit smaller, Waainek WEF (comprising 9 turbines at 84 m hub height), and about

20% of the proposed development area is situated within the Cookhouse REDZ (although stipulated as an area with 'very high visual sensitivity'), thus similar adjacent developments are present or provisionally accommodated for;

- The town of Grahamstown, with all of its functions, including residential, business, waste disposal and limited light industrial facilities is situated in the area;
- The receiving environment is characterised by agriculture;
- Importantly, a large, almost uninterrupted portion of the receiving area, especially towards the northwest to northeast, measuring approximately 55 km east-west by 40 km north-south is characterised almost entirely by nature tourism, in the form of private game reserves, ecotourist facilities, hunting farms and The Great Fish River Nature Reserve. The southern border of Kwandwe Private Game Reserve, an area of approximately 22 500 Ha, is situated directly adjacent to the north-western part of the proposed development.
- While stating that "Overall, the visual impact of the Albany WEF is considered to be HIGH, mostly due to the potential impact on sensitive visual receptors such as nearby game farm and nature reserve operators", and acknowledging that the potential losses of scenic resources are high, the VIA Report seems to not take into account the high visual exposure of the development to The Great Fish River Nature Reserve, a Regional Park.
- In an attempt to categorise the anticipated level of intensity of the development, The VIA Report erroneously attempts to summarise a very large receiving environment (comprising a mix of protected areas of regional significance, high cultural and historical significance, medium scenic, low scenic and degraded land) into a categorisation of medium scenic, cultural or historical significance. Again, The VIA Report seems to not take into account the high visual exposure of the development to The Great Fish River Nature Reserve, an area of regional significance.



Figure 3-1: Views from Adams Krans Great Fish Provincial Nature Reserve



Figure 3-2: Highland grassland plateau Lalibela Private Game Reserve

3.3 NATURE OF VIEWER TYPES EXPOSED TO THE DEVELOPMENT

- The types of viewers potentially exposed to the development are expected to be commuters and residents, as well as tourists, whose attitudes may range between being positively inclined to very adverse to visual change in the area;
- Because of the abundance of eco-tourism facilities, recreational facilities and a Regional Park enjoying significant exposure, public interest or possibility for controversy of the proposed development is anticipated to be very high.

3.4 POTENTIAL VISUAL EXPOSURE

- The proposed development is directly adjacent to an elevated part of the N2 national road, and adjacent to the R67, thus viewer frequency and visibility is anticipated to be very high;
- Structures are expected to be excessively high, thus facilities over great distances will suffer significant exposure to the development.

3.5 LANDSCAPE SENSITIVITY

Landscape sensitivity was determined as part of this study through the identification of natural, scenic and cultural resources which have aesthetic and economic value to the local community, the region, and society as a whole.

- The resources considered include features of topographic, geological or cultural interest, together with landscape grain or complexity.
- Protected landscapes, such as national parks, nature reserves, game parks or game farms, as well as heritage sites, add to the cultural value of an area and were thus considered as essential criteria in the determination of landscape sensitivities.

Much about the fact that the development is in part located within the Cookhouse REDZ, it should be noted that the REDZ visual sensitivity mapping at the regional scale indicate that the Albany WEF receiving environment is categorised as 'very high visual sensitivity', as shown in Figure 3-3. This means that it is not ideally suitable for wind farm development where the wilderness character forms the basis for wildlife and nature tourism (and more so if this is the basis for Protected Area establishment and upkeep by biodiversity stewardship).

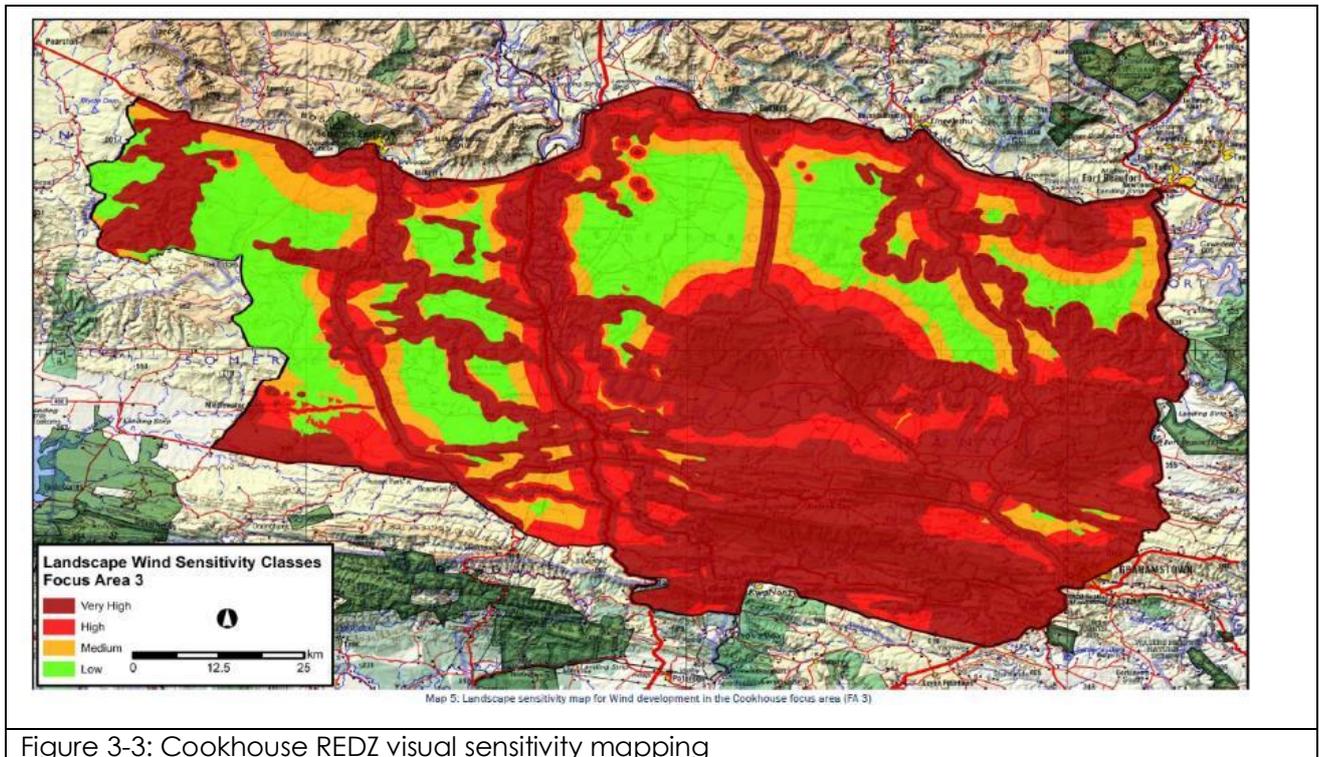


Figure 3-3: Cookhouse REDZ visual sensitivity mapping

3.6 EXPECTED LEVEL OF IMPACT/TYPE OF ASSESSMENT

The following derivative table can serve as a guideline to determine the intensity of specialist involvement appropriate for this development. Correlating the development types with the types of environment indicates that a Very High Visual Impact can be expected, and it is likely that no mitigation will be effective.

Table 3-1: Derivative table aiding the determination of the level of specialist involvement and expected impact

TYPE OF ENVIRONMENT	TYPE OF DEVELOPMENT (LOW TO HIGH INTENSITY)				
	Category 1	Category 2	Category 3	Category 4	Category 5
Protected/wild areas of international, national, or regional significance	Moderate visual impact expected	High visual impact expected	High visual impact expected	Very high visual impact expected	Very high visual impact expected
Areas or routes of high scenic, cultural, historical significance	Minimal visual impact expected	Moderate visual impact expected	High visual impact expected	High visual impact expected	Very high visual impact expected
Areas or routes of medium scenic, cultural or historical significance	Little or no visual impact expected	Minimal visual impact expected	Moderate visual impact expected	High visual impact expected	High visual impact expected
Areas or routes of low scenic, cultural, historical significance / disturbed	Little or no visual impact expected - possible benefits	Little or no visual impact expected	Minimal visual impact expected	Moderate visual impact expected	High visual impact expected
Disturbed or degraded sites / run-down urban areas / wasteland	Little or no visual impact expected - Possible benefits	Little or no visual impact expected - Possible benefits	Little or no visual impact expected	Minimal visual impact expected	Moderate visual impact expected

3.7 SENSITIVE RECEPTORS AND ZONE OF VISUAL INFLUENCE

There are many views and opinions about distances within which wind farm visual impact should be assessed some of which has been set out in guidelines and locally adopted eg REDZ SEA Landscape Assessment and there are theoretical positions which are not always well considered. There are however a number of research studies that have been published which can be used to form sound opinion and inform best practise.

A study by the University of Newcastle Study (2002)¹ commissioned by Scottish Natural Heritage (based on their assessment of the eight wind farm) recommended a height-distance relationship for Zone of Visual Influence (ZVI) as shown in the following table (with increased heights relevant to Albany WEF VIA added by extrapolation).

Height of turbines (total including rotors)(m)	Recommended ZVI distance (km)
50	15
70	20
85	25
100	30
200	60 (by extrapolation)

A study by the Argonne National Laboratory for US Department of Energy Bureau of Land Management (BLM)² in 2012 gave a report on visual impact of wind and guidance on visibility. The study was a systematic examination of the visual impact of five existing wind farms in Wyoming and Colorado, with turbines 90 – 120m in tip height and most of them close to 120m (thus just more than half of proposed Albany at 215m) and It was found that:

- “Under favorable viewing conditions, the wind facilities were judged to be major foci of visual attention at up to 19 km and likely to be noticed by casual observers at >37 km”; and
- “A conservative interpretation suggests that for such facilities, an appropriate radius for visual impact analyses would be 48 km, that the facilities would be unlikely to be missed by casual observers at up to 32 km...the facilities could be major sources of visual contrast at up to 16 km.”

The study further classified situations rated 5 or 6 as being of high impact and, on that basis, specified a *Limit of visual pre-eminence* which was 16 kms for turbines 120 m high such that:

- “At this distance, the wind facility is a major focus of visual attention, drawing and holding visual attention. . . . The facility as a whole is likely to be perceived by some viewers as having a large visual impact.”

¹ University of Newcastle. 2002. Visual Assessment of Windfarms Best Practice. Scottish Natural Heritage Commissioned Report F01AA303A

² 10 Sullivan, Robert G., et. al., 2012. Wind Turbine Visibility and Visual Impact Threshold Distances in Western Landscapes. Argonne National Laboratory and the U.S. Department of the Interior, Bureau of Land Management. USA [BLM Study].

For the scale of the Albany WEF with 66 turbines with a hub height of 130m and combined height (tower plus blade radius) of 215 m each, situated on elevated ground the above can be more or less doubled. At the hand of these considerations various visual receptors have been identified in relation to the Albany WEF, with additional receptors located further than 20km away listed below within Table 3-2.

Table 3-2:Affected Main places							
Affected Places	Main	Distance from Albany	Affected Places	Main	Distance from Albany	Affected Main Places	Distance from Albany
Grahamstown		5km	eMxaxa		30km	Ntloko	30km
Makana NU		5km	Glenmore		30km	Pikoli	30km
Ndlambe NU		5km	Gwabeni		30km	Port Alfred	30km
Rhini		5km	Kwandwane		30km	Qamnyana	30km
Bathurst		20km	KwaPikoli		30km	Themba	30km
Enxuba		20km	Lujiko		30km	Zweledinga	30km
KwaNdwanyana		20km	Ngqushwa NU		30km		
Ngqushwa NU		20km	Nkonkobe NU		30km		
Nolukhanyo		20km	Nolukhanyo		30km		

Various subplaces have also been identified and these are outlined within Table 3-3.

Table 3-3:Affected Sub places							
Affected Places	Sub	Distance from Albany	Affected Places	Sub	Distance from Albany	Affected Sub Places	Distance from Albany
Beaconsfield Mine		5km	Belmont Valley		10km	Bathurst SP	20km
Eluxolweni		5km	Eluxolweni		10km	Enxuba SP	20km
Grahamstown SP1		5km	Fortengland		10km	Grahamstown SP2	20km
Hlalani		5km	Grahamstown Military Base		10km	KwaNdwanyana SP	20km
Hooggenoeg		5km	Grahamstown SP1		10km	Langholm Estate	20km
Joza		5km	Grahamstown SP2		10km	Makana NU	20km
King Flats		5km	Hlalani		10km	Ndlambe NU	20km
Makana NU		5km	Hooggenoeg		10km	Ngqushwa NU	20km
Ndlambe NU		5km	Kingswood		10km	Nolukhanyo SP	20km
Phaphamani		5km	Makana NU		10km		

Affected Places	Sub	Distance from Albany	Affected Places	Sub	Distance from Albany	Affected Places	Sub	Distance from Albany
Rhini SP		5km	Mary Waters		10km			
			Ndlambe NU		10km			
			Rhodes		10km			
			Vukani		10km			

Further receptors have been identified in the forms of nature and wildlife tourism /ecotourism operators, game and hunting related activities in the area and these are outlined within Figure 3-4. In terms of the actual visual impact to be expected at these locations, a viewshed was compiled to determine the impact and was used to determine the how many turbines would be visible in each location.

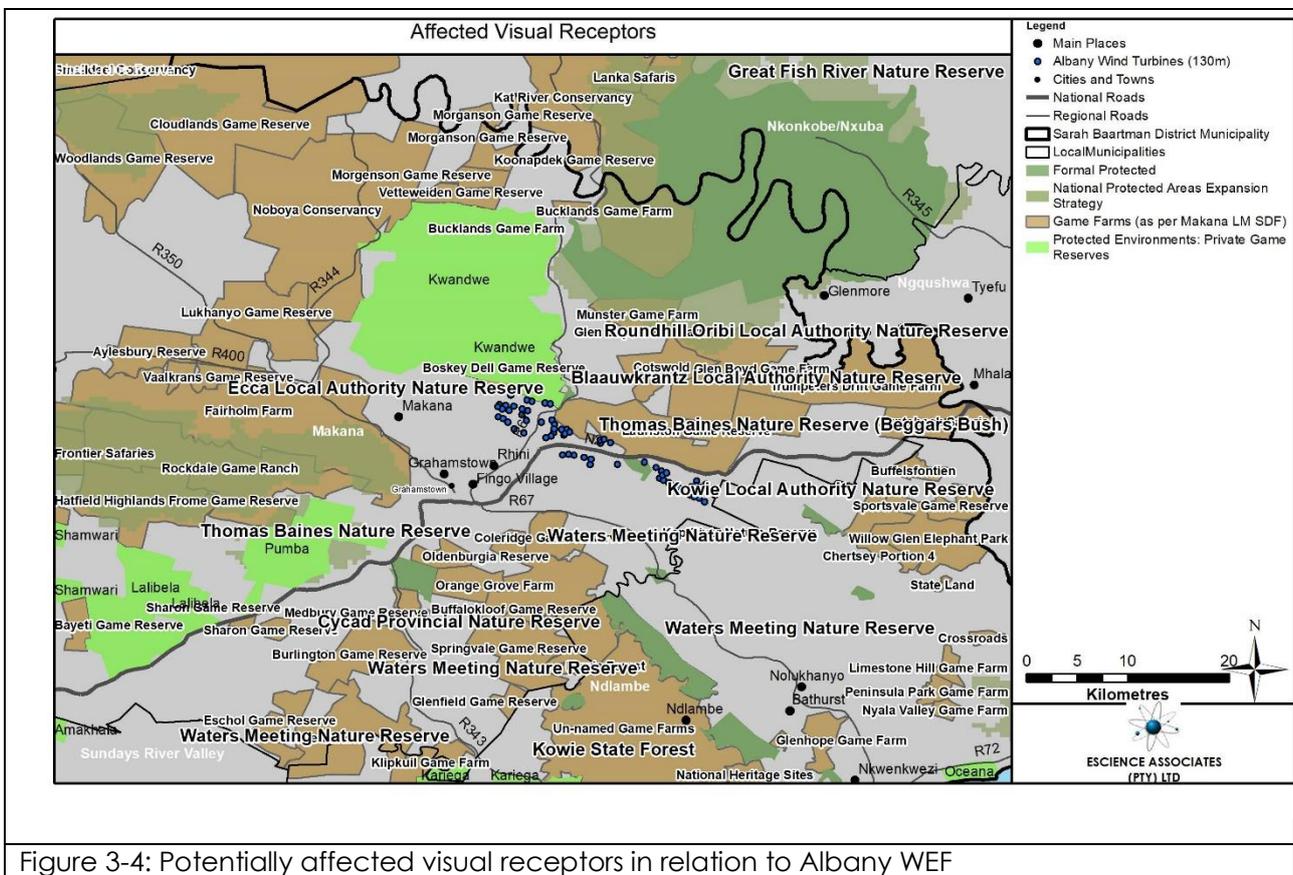


Figure 3-4: Potentially affected visual receptors in relation to Albany WEF

Assessing this impact to other receptors is key to determine the extent to which the viewshed will be impacted and as demonstrated within these areas.

Various areas are expected to be impacted and these are outlined below within Tables Table 3-4 to Table 3-6.

Table 3-4: Affected Formal Protected Areas – Nature Reserves		
Great Fish River Nature Reserve	Ghio Wetland Local Authority Nature Reserve	Waters Meeting Nature Reserve
Kowie Local Authority Nature Reserve	Waters Meeting Nature Reserve	Cycad Provincial Nature Reserve
Kowie State Forest	Roundhill Oribi Local Authority Nature Reserve	Blaauwkrantz Local Authority Nature Reserve
Thomas Baines Nature Reserve	Thomas Baines Nature Reserve (Beggars Bush)	Ecca Local Authority Nature Reserve

Table 3-5: Affected Formal Protected Areas – Protected Environments (Game Reserves)		
Oceana	Pumba	Shamwari
Sibuya	Kariega	Lalibela
Kwandwe		

Table 3-6: Affected Game Farms and Ecotourism Related Operations		
Aylesbury Reserve	Hatfield Highlands Frome Game Reserve	
Bayeti Game Reserve	Huntshoek Safaris	
Boskey Dell Game Reserve	Kap River Nature Reserve	Orange Grove Farm
Bucklands Game Farm	Kat River Conservancy	oune Safaris
Buffalokloof Game Reserve	Klipkuil Game Farm	Peninsula Park Game Farm
Buffelsfontien	Koonapdek Game Reserve	Rockdale Game Ranch
Burchells Game Reserve	Lanka Safaris	Sharon Game Reserve
Burlington Game Reserve	Lauriston Game Reserve	Smalldeel Conservancy
Chertsey Portion 4	Limestone Hill Game Farm	Sportsvale Game Reserve
Cloudlands Game Reserve	Lukhanyo Game Reserve	Springvale Game Reserve
Coleridge Game Reserve	Medbury Game Reserve	State Land

Table 3-6: Affected Game Farms and Ecotourism Related Operations		
Cotswold	Morganson Game Reserve	Terry Fitzgerald Private Nature Reserve
Crossroads	Morgenson Game Reserve	Trumpeters Drift Game Farm
Eschol Game Reserve	Munster Game Farm	Additional Un-named Game Farms
Fairholm Farm	National Heritage Sites	Vaalkrans Game Reserve
Frontier Safaries	Noboya Conservancy	Vetteweiden Game Reserve
Glen Boyd Game Farm	Nyala Valley Game Farm	Willow Glen Elephant Park
Glenfield Game Reserve	Oldenburgia Reserve	Willowfountain
Glenhope Game Farm	Olienhout Game Farm	Woodlands Game Reserve

The overlay of turbine visibility against these areas is illustrated in Figure 3-5 and in terms of the impact to the Great Fish River Nature Reserve (refer to Figure 3-6), it is illustrated the various viewpoints throughout the reserve will be impacted in a negative manner as some of these viewpoints will have as many as all Albany Turbines visible on the horizon. Furthermore, various infrastructure at Great Fish will be detrimentally impacted upon with places such as Adam's Krans viewpoint, Mbabela Lodge, Sam Knott Memorial Church, a proposed campsite and a proposed picnic site affected most.

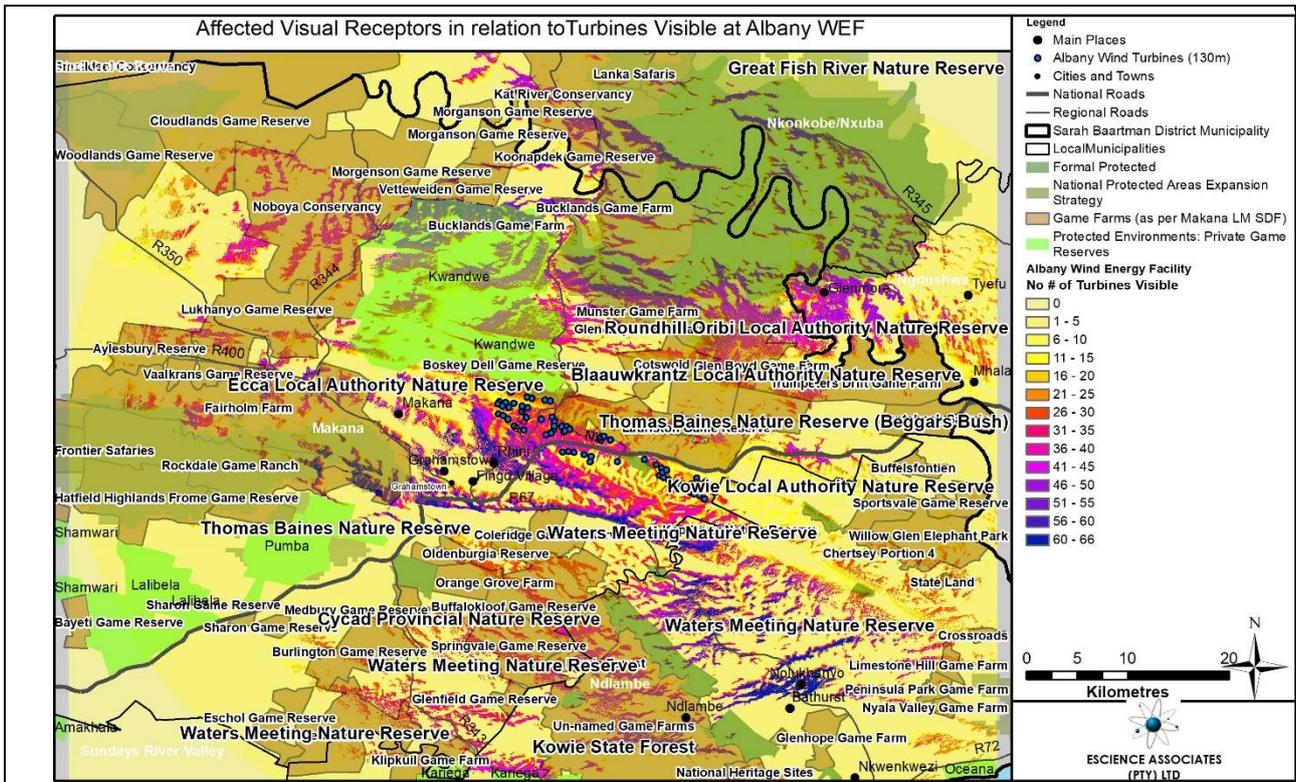


Figure 3-5: Affected visual receptors in relation to Albany WEF, displaying the amount of turbines visible at any location

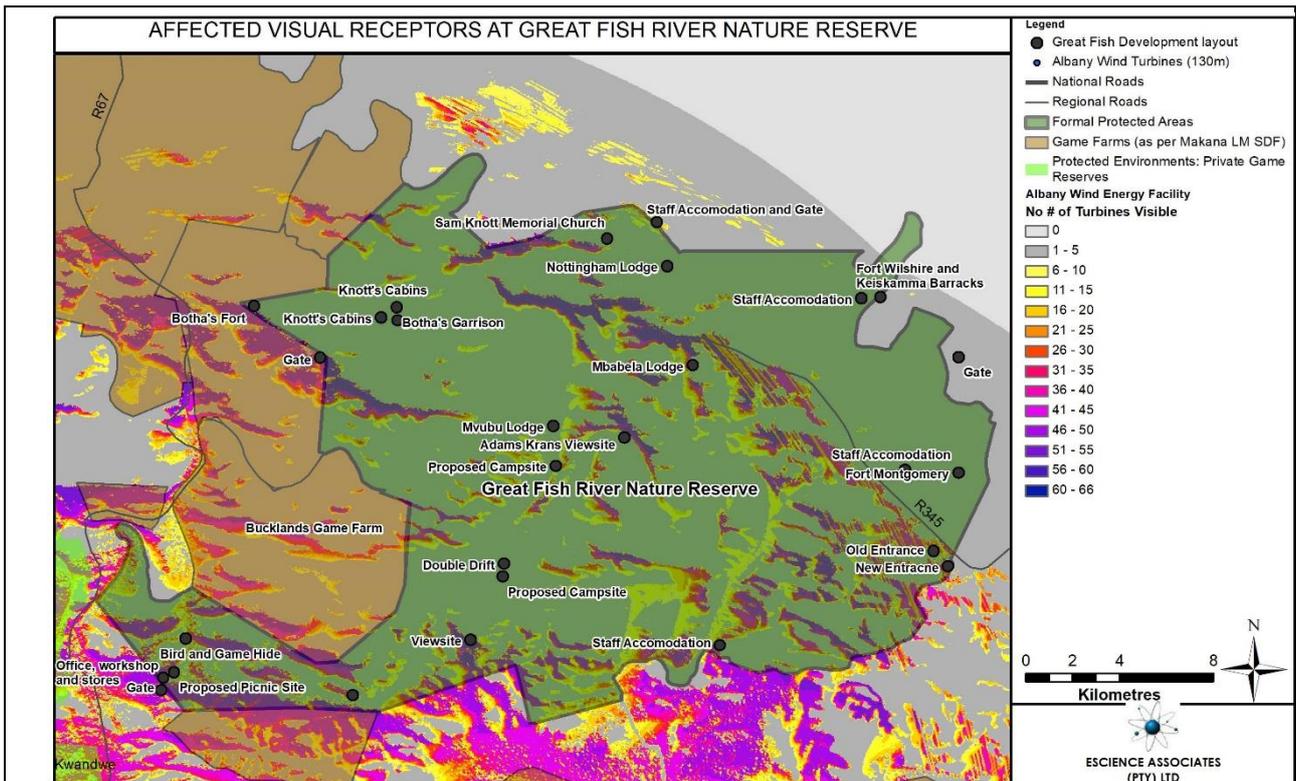


Figure 3-6: Turbine visibility within Great Fish River Nature Reserve