



Witsand Report – A pilot wildlife enterprise baseline assessment of Moodie’s Farm

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Working Draft 21 June 2023

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0 Executive summary

This pilot rapid area assessment report for Witsand Moodie's farm was conducted from the 8th to 10th of March 2023. The assessment was conducted by a joint team from AWEI, the leaseholder and the Department of Animal Sciences at the University of Stellenbosch. The main of purpose of the assessment was to identify operational environment, ecology, farm set up, community services, socio-economic situation of Moodie's farm and the two other jointly managed farms. While all the three farms were investigated, the main focal area was Moodie's farm with the other two farms studied to establish their relationship. The assessment also acts as a starting point for assessing economic opportunities and their viability.

The team adopted varied approaches to data collection which included field observation, interviews, meetings, group discussion, brainstorming sessions and actual collection of soil samples and plant species for analysis.

The analysis revealed that Moodie's is a 1,000-hectare farm with a rich biodiversity and nature conservation is its main land use activity. The conserved species include fynbos, reptiles, birds, and selected mammals. Over 50 plant species were identified during the visit while a variety of land animals like reptiles, bucks and birds were also spotted in the farm. While fewer animals were seen during the field exploration, literature review, and past records from field observations showed that there are more animal species than it meets the eye and seasonality plays a significant role. For instance, over 120 birds were observed in 2019.

The main economic activity observed in Moodie's farm was bee keeping. Furthermore, the neighbouring community to the farm is composed of farmers (including workers), tourists, youth, women, retirees, and school children. There are also small businesses like restaurants, and grocery shops. There are no direct economic benefits recorded to be linked to any stakeholder involved or associated with Moodie's farm.

This assessment ascertains that Moodie's farm is a conservation area with rich biodiversity. However, there is limited wildlife enterprise potential associated with the farm while the other two jointly managed farms focus on sheep farming and agriculture.

1 Introduction, objectives, and methods

1.1 Introduction

Moodie's and two farms located at Witsand are part of the farm that was donated to the Stellenbosch University in the 1970s. Since, then the farm has been used for various agriculture purposes such as cattle farming, sheep, and wildlife conservation and it has had a single lease holder. In 2022, the university tendered the lease for the farm to be occupied in 2024. As such, AWEI conducted this area baseline assessment on Moodie's farm as an experimental exercise to assess the potential for establishing thriving wildlife

economies. Hence, this rapid area assessment was conducted as a steppingstone into understanding the nature, landscapes, ecological status, and socio-economic activities of Moodie’s farm. The objectives of this assessment are laid below.

1.2 Objectives

The following objectives were the focus of the assessment:

- To identify and describe the land uses and socio-economic activities at Moodie’s Farm;
- To profile ecological status of Moodie’s farm; and
- To analyse community stakeholders adjacent to Moodie’s farm and their potential relevance to Moodie’s farm activities.

1.2 Assessment scope

Table 1: Assessment criteria

Assessment criteria	Relevance to wildlife economies & project sustainability
Land use	Land tenure, and current land use practices like agriculture, and urbanization will determine the success/failure of Moodie’s farm project.
Social issues	Social and cultural dynamics of the community helps to identify the “rules of engagement” for symbiotic and mutual beneficial relations between Moodie’s farm project and the key stakeholders.
Climate	Climate change is a global phenomenon with varying significant impacts on local ecosystems and communities. Knowledge of climate patterns and effects to soils, land use, animals as well as vegetation, are crucial in determining the prospects of wildlife economies in the area.
Water management	Water quality, availability and use is useful in estimating water related vegetation and animal aqua carrying capacity to support wildlife
Soil health	Soil quality and its management is central to the survival of present/potential vegetation for wildlife economies in tripartite ecosystem of soil-vegetation-animals.
Biodiversity	The flora and fauna present the real potential for wildlife economies such as ecotourism, gaming, among others. Some of wild species are endangered.

Assessment criteria	Relevance to wildlife economies & project sustainability
Energy usage	The energy usage in supporting wildlife economies should be knowing. Finding sustainable and cost-effective energy source is important.
Community engagement	Sustainable wildlife economies depend on the community relations and interaction systems. Building a strong mutual beneficial symbiotic relation with vast community stakeholders adds to social capital, a pillar for successful economies.

1.3 Research methods

A combination of different methodologies was used in collecting data on the status of three farms. Firstly, secondary data on land use, stakeholder analysis as well as plant and animal species were scoped to have an overview of the area and prepare for empirical data collection. Thereafter, the rapid area assessment data collection tool was developed to understand and describe land use, social issues, climate, soil, biodiversity, development indicators, and community stakeholders at the three farms. Empirical data was then collected through field exploration. Soil samples and plant species were identified using field observations and random sampling. Field exploration helped to identify different vegetation and soil type (colour and coarseness) and random sampling technique was used to pick sampling areas or plant species. In addition, plant species were carefully observed and sampled based on their uniqueness. More so, field tour and observation were the techniques used in identifying various animal and plant species. Data on socio-economic issues, and stakeholders was obtained through group discussions, brainstorming session, interviews, and meetings. Key informants and recorded information enhanced the information gathering.

Data on plant species was analysed through the use of expert knowledge of Beverly van der Walt, past records and plant identifying software (PlantSnap, 2012). Also, a field guide by Odette Curtis-Scott was used to know plant names, native land, and their uses (Curtis-Scott, 2020). Similarly, names of animal species were identified based on expert knowledge, and past observations by the current lease holder of the farm. Thematical analysis was the method of analysis for stakeholders, describing the social issues, development indicator and current economic activities in three farms and surrounding communities. The results of this exercise are presented in the preceding sections.

2 Moodie’s rapid area assessment

2.1 Farm governance

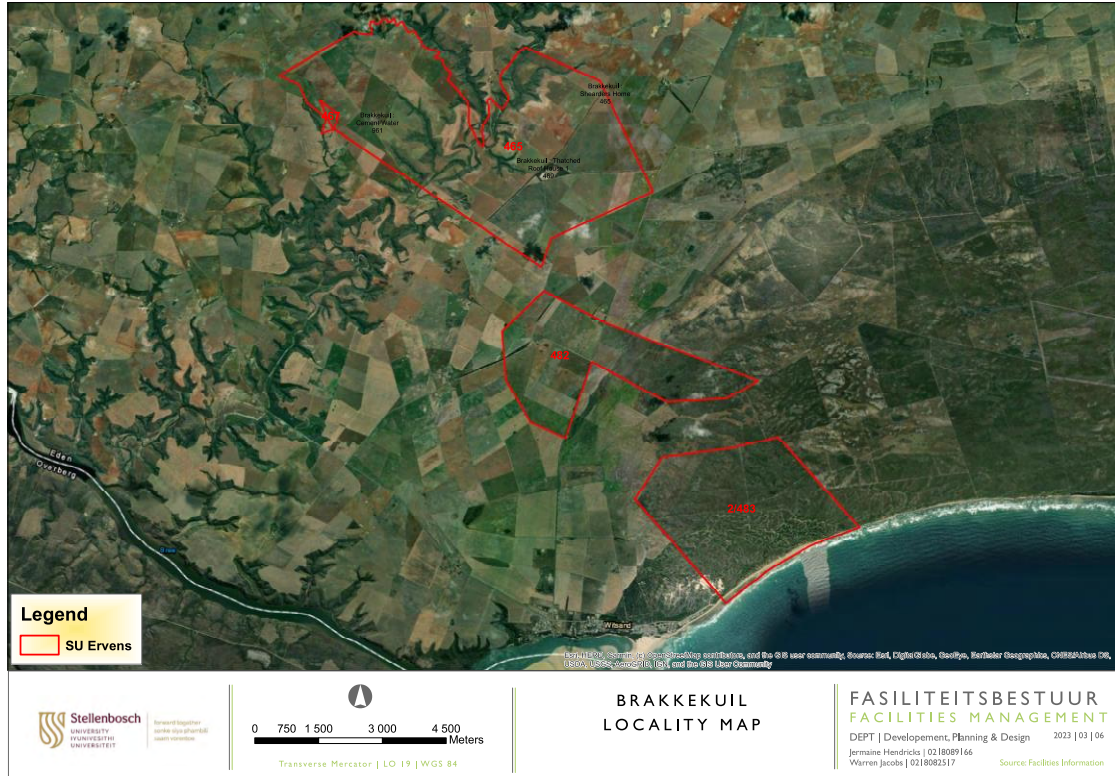


Figure 1: Area map

Table 2: Farm details

1. Farm Name	Moodie’s Witsand farm
2. Farm location & coordinates	The farm is located in Witsand, Western Cape at Brakkekuil Farm 2/483 – (Figure 1)
3. Farm size	1000 hectares
4. Current Farm owner/tenure holder	Mr Lood van Deventer
5. Lease agreements (holders currently)	Mr Lood van Deventer (Tendered for 2024)
6. Current farm management team/stakeholders/strategies	Mr Lood van Deventer and his employees manages Moodie’s farm together with other two farms. Moodie’s is used as a conservation area, while the other farms are used for sheep farming and agriculture.

2.2 Climate

The farm is located in the eastern section of the Mediterranean climate's temperate winter rainfall area. The average annual rainfall is roughly 572 mm (according to local data), while the average rainfall each year from inside the farm's immediate region is approximately 300mm. The highest mean monthly rainfall occurs in August and the lowest between December and January. Summer rains are frequently caused by cloudbursts. However, rainfall is mostly cyclonic, caused by the eastward migration of low-pressure systems over the South-western and Southern Cape. The warm Agulhas stream causes mild winters and hot summers. The annual temperature is 19.7°C, with a mean summer maximum of 26.5°C and a mean winter low of 13.0°C. (CapeNature, 2016, p. 25)

2.3 Conservation activities

Moodie's farm is totally a conserved area with wide variety of biodiversity. The farm has not been farmed or used for commercial activities in the last 8 to 10 years. Landscapes, plant, and animal species of the farm are detailed in section 2.6, 2.7 and 2.8. The present lease holder is the responsible for all conservation activities in the farm which include monitoring, fence repairs, and species observation.

2.4 Economic activities

Bee keeping is main notable economic activity at Moodie's farm presently. No other economic activities were observed. In the past the farm has been used for cattle farming.

2.5 Development indicators

The farm has unpaved roads adequate to drive around typical in a truck (bakkie) and observe the farm. Only detours to the farm are unpaved. The farm is well connected to the neighbouring towns and main roads with tared road network. R322 is the main road that links Witsand and the farm. There is no dedicated commuter transport into the area. Hiking, private, and organized transport are the main modes of travelling around the area. In general, there is mobile network coverage for MTN, Vodacom and Telkom, however with a weaker signal in some areas. Common employment opportunity providers in the surrounding community include agriculture (crop and livestock farming), tourism, fisheries, food possessing, and small businesses. Other amenities include schools, and local clinics. Majority of the government, health and professional services are in a nearby town of Heidelberg.

2.6 Landscape

Moodie's farm is located in Witsand area and is surrounded by communities such as Infanta, Arniston, Swellendam, Bredasdorp, Malgas, and Ouplaas under the Cape Floristic Region (CFR). This region is internationally renowned for its diverse flora with an

estimated 9,000 species of vascular plants (CapeNature, 2016, p. 17). Out of these plants, over 69% of which are endemic (restricted to the region). Thus, it is one of the most botanically diverse locations on the planet. The CFR comprises a variety of flora types, including Fynbos and Renosterveld. Fynbos is a mosaic of fire-adapted plants that includes Proteoid, Ericaceous, Restiod, and Asteraceous growth types. It grows on leached, oligotrophic soils originating from Table Mountain Group sandstones. Also, Asteraceous varieties may be found on Malmesbury and Bokkeveld Group granites and shales. The Fynbos Biome is made up entirely of Fynbos, Renosterveld, and Strandveld. Renosterveld grows on the Bokkeveld and Witteberg Groups' rich shale-based soils (CapeNature, 2016, pp. 26-28).

Moodie's farm shares its landscapes with the Agulhas Plain Centre, one of the Cape Floristic Region's six phytogeographic centres neighbouring the farm. This centre has a 14.9% endemism rate, and it covers just about 30 000 km². The Agulhas Plain Centre has varied range of plant types, the majority of which are Least Endangered De Hoop Limestone Fynbos. Potberg Sandstone Fynbos (Least Endangered), Overberg Dune Strandveld (Least Threatened) Eastern Rûens Shale Renosterveld (Critically Endangered), and Central Rûens Shale Renosterveld (Critically Endangered), Albertinia Sand Fynbos (Vulnerable), Elim Ferricrete Fynbos (Endangered). De Hoop Nature reserve also borders the farm connected by the Breede River to the West at the river's mouth at Witsand. To the East, is the same general area of the farm. This area shares the same landscape outlook as with the above (CapeNature, 2016, pp. 34-38).

2.7 Biodiversity

2.7.1 Plants

The farm has a variety of plant types (Appendix 1), the majority of which are Limestone Fynbos, with a conservation classification of Least Endangered. Other types include Potberg Sandstone Fynbos (Least Threatened), Overberg Dune Strandveld (Least Threatened), Eastern Rûens Shale Renosterveld (Critically Endangered), Central Rûens Shale Renosterveld (Endangered), Potberg Ferricrete Fynbos (Endangered), Western Coastal Shale Band Vegetation (Least Threatened), Cape Seashore Vegetation (Least Threat (Critically Endangered)). ("De Hoop Nature Reserve Complex - DocsLib")

Some plants observed in the farm have medicinal benefits. For instance, the Candelabra lily apart from its value in ornamental horticulture, the dry bulb tunics are used as a wound dressing. It is known that young Xhosa men use the tunics as plasters after circumcision (SANBI, 2004). Bitterbossie/ Christmas berry is traditional known to purify the blood for the internal treatment of piles or haemorrhoids by an infusion of the aerial parts of this specie. 'Aambeie' is an Afrikaans term for piles or haemorrhoids. A Tortoise berry is another present plant species taken as tea (infusion by brewing stems and leaves) to assist with abdominal pain and tuberculosis. This tea is general tonic or a bitter digestive. It can also be brewed/mixed with Libeccio multiflora to remedy colds, flu, and bronchitis (SANBI, 2004).

Although fewer Sour fig plant species were identified, they are general found all over the Western Cape and have a variety of medicinal properties. A Strawflower/ Honey everlasting is present in the farm and is used to treat ailments such as asthma, bladder infections, gynaecological disorders, backache, fatigue, stress hypertension, cardiac problems, and influenza (SANBI, 2004). Moreover, its strong aromatic leaves are used to keep insects and parasites away.

There are also invasive plant species observed and known in the farm. In general, this region's indigenous fynbos has mostly been replaced by alien vegetation types. Observed in the farm, Western coastal wattle is an Australia plant species introduced into Africa to help stabilise coastal sands (SANBI, 2004). While this plant has achieved its purposes, it is invasive to local fynbos as it spreads rapidly. Another greatest threat is Rooikrans (*Acacia cyclops*) (number 4. Appendix 1) that has the potential to overtake all Limestone Fynbos and Dune Fynbos in the area. Seen is also Port Jackson (*Acacia saligna*) that is a severe invader in the valley between the Potberg mountain and the limestone hills. Other major invasive species are Black Wattle (*Acacia mearnsii*), Cluster Pine (*Pinus pinaster*), Golden Wattle (*Acacia pycnantha*), Long-leafed Wattle (*Acacia longifolia*), and Eucalypts (*Eucalyptus* spp).

2.7.2 Animals

Moodie's farm has a considerable number of animals. Notably, reptiles, birds, and mammals (Appendices 2 and 3). A fallow deer and steenbok were seen at Moodies farm. Fallow deer is a non-indigenous animal species introduced from Europe and is invasive to other bucks. Reportedly, there are 20 mammals known in the farm as compiled by Dr Elsje Pieterse. While no reptiles were observed during the visit, a number of them are known to exist in the area. 46 indigenous species of reptiles could possibly be found of which 2 may be threatened. There are also known 10 indigenous species of amphibians in the area and none of which are threatened. In terms of fish, 84 indigenous species of marine fish are likely to be found at Moodie's farm as it borders the Indian Ocean.

Although fewer birds were observed during the field exploration, over 120 species of birds have been observed at Moodie's (Lood, 2019; Appendix 2). Birds that rely on native renosterveld patches and fynbos biomes that seldom use converted habitats are seen as endemic. The Black Harrier is the most endangered raptor, with a population of less than 2000 individuals. According to research, Black Harriers only breed in the largest and most linked patches of renosterveld, where they make ground nests and rear their young ones. In the recent decade, the number of Southern Black Korhaan has declined in the Overberg. Foraging and mating, these cautious birds are solely reliant on renosterveld remains inside the wheat-belt. (Trust, 2012)

Grey-winged & Cape Spurfowl Francolins are game birds whose populations have undoubtedly declined due to habitat degradation. These, like the Black Harrier, rely on renosterveld shrublands for breeding. They also take use of the cover afforded by

renosterveld flora to evade predators. Although they graze in croplands, renosterveld bulbs provide them with a good food supply. (Trust, 2012).

The Malachite and Southern Double-collared Sunbirds eat on blooms found in remains of renosterveld, such as the Mauve Honey-bell Bush (*Freylinia undulata*). This and other sunbirds pollinate flowers such as the Microlomas (also known as Wax-Creepers or Bokorinkies) in an unusual way: the pollen sacs adhere to the birds' tongues and are subsequently transmitted to other plants by the feeding birds. (Trust, 2012).

Birds such as the Karoo Scrub-Robin (one of the most abundant birds in the renosterveld), Cape Grassbird, Yellow Canary, White-throated Canary, Karoo Prinia, Grey-backed Cisticola, Cape Bunting, and others make little, if any, use of agricultural areas and rely entirely on natural flora. (Trust, 2012).

Meanwhile, some bird species have naturally moved into new places, and/or populations have grown as a result of the changing environment, such as South Africa's national bird, which has experienced habitat loss in its native grasslands and Karoo habitats. Therefore, more than half of the Blue Crane population may now be found in the Overberg, where they breed and graze on croplands and artificial pastures.

At times, the Denham's Bustard uses croplands, particularly pastures and cultivated fields. It is thought that their number has risen in these altered settings in the Western Cape. During the mating season, Denham's Bustards prefer natural fynbos and renosterveld settings. (Trust, 2012)

The Secretary bird is potentially endangered, yet, they have adapted to modified settings like the Overberg. These birds have been observed foraging in croplands and even breeding on top of foreign trees. "Unlike the Southern Black Korhaan, the Karoo Korhaan has adapted to agricultural habitats." (Birding - Overberg Renosterveld Conservation Trust) As a result, it can now be seen in the Overberg and even into the Agulhas Plain – especially in the eastern parts of the wheat-belt. (Trust, 2012)

Several raptors, including Steppe and Jackal Buzzards, Spotted Eagle-Owls, and Yellow-billed Kites, make effective use of croplands. Lanners and Peregrine Falcons take advantage of the large numbers of Speckled (Rock) Pigeons on open cropped plains. Helmeted Guineafowl, Spurwing Geese, Egyptian Geese, and Hadedda Ibis have been drawn to the landscape by habitat modification or access to agricultural ponds. Capped Wheatear, Common Stonechat, African Pipit, Cape Longclaw, Cloud Cisticola, Zitting Cisticola, Common Quail, Large-billed Lark, and Red-capped Lark have all prospered in these 'new' settings. (Birding - Overberg Renosterveld Conservation Trust)

2.8 Water and energy use status

The farm falls into the Breede Water Management Area (WMA), which includes the Breede and Overberg catchment areas. This WMA is managed together with the Gouritz

WMA through the Breede-Gouritz Catchment Management Agency. The average annual rainfall is roughly 572 mm, with August having the highest mean monthly rainfall and December and January having the lowest. Rainfall fluctuates by 15%-17% from year to year. Summer rains are frequently caused by cloudbursts; however, rainfall is mostly cyclonic, caused by the eastward migration of low-pressure systems over the South-western and Southern Cape. (CapeNature, 2016, pp. 30-32).

Moodie’s farm area is currently a conserved area with no installed energy infrastructure. However, nearby farms are connected to the national energy grid of Eskom. Also, there are available options for sources of energy such as wind, solar and gas. Witsand where the farm is located experiences summer South-Easterly winds that are suitable for wind energy. However, wind turbines are known to interfere with the soil structure.

2.9 Social and community aspects

2.9.1 Stakeholder analysis

Table 3: Stakeholder outlook for the Hessequa Municipality

(Source: Municipality of Witsand)

Stakeholder	Demographics (pop size, age, diversity, description) taken from latest data 2018-2020	Relevance to Moodie’s farm ecosystem
School	<ul style="list-style-type: none"> • 19 schools in the municipality • From 2017 to 2019, learner enrolment in Hessequa fell by 0.5% per year. A variety of factors, including demography and socioeconomic environment, might explain this. The learner-teacher ratio grew modestly between 2017 and 2019, despite a decline in learner enrolment over the same time period. Learner retention increased from 64.4 percent in 2017 to 69% in 2018 but fell to 62% in 2019. • In 2019, Hessequa has 19 public elementary schools. The lack of schools in the Hessequa area highlights the need for more schools. 	Potential conservation education, school tours, social entrepreneurship through conservation or hospitality education.

	<ul style="list-style-type: none"> • From 2017 to 2019, Hessequa's matric results were consistently over 80%. 	
Farmers	Population in the Agriculture, forestry & fishing Sector - 4898	Interdependent activities. For instance, bee keeping is key for conventional farmers pollination purposes. Also, mammals such as a fallow deer jump fences to other farms and are invasive to other species.
Farm workers		Tourism
Shops/business owners		Tourists as clients for local businesses, local businesses as information distributors, joint partnerships in community responsibility programmes.
Farmers Union	Only one farmer union was identified	Farm management, farmer needs, stakeholder engagement
Farmer Cooperative	Also, farmers in the area have a cooperative for	Joint inputs and supply bargaining.
Municipality	<ul style="list-style-type: none"> • Hessequa has a population of 52 087 persons in 2020, making it the Garden Route District's second-smallest town after Kannaland. This figure is anticipated to fall by 614 individuals by 2024, representing a -0.3% yearly growth rate. • The overall sex ratio (SR) represents the number of men in the population per 100 females. According to the data, there are more females than men in the Hessequa municipal area, with a ratio of 53% (females) to 47% (males) (males). • As compared to other municipalities in the GRD and the Western Cape, Hessequa 	Approval, permissions, and support for various farm activities

	had the lowest levels of income inequality in 2018, with a Gini value of 0.56.	
Restaurants	-	Tourists as clients for the restaurants; partnerships for distributing Moodie's farm information
Youth & Working Age	Population of 32632	Jobs, tourism, partnerships
Retirees	Population of 7264	Tourism
Community	-	Tourism, jobs,

3 Jointly Managed Farms and Surrounding Communities

In this section, we briefly describe the characteristics for each area and indicate links to Moodie's farm.

Topic	The three farms	Surrounding area
Location	Farm 1 & 3, code 0000 and respectively, adjacent to each other and are located South to Moodie's.	The local area is called Witsand, and it is governed by the Heidelberg Municipality.
Ownership	The current lease holder for the farms is Mr Lood	Private and public ownership of properties
Uses	Moodie's is used as a conservation area, while the other farms are used for sheep farming and agriculture.	Businesses, farming, roads,
Biodiversity	The two farms have predominantly similar vegetation to Moodie's and Surrounding communities, there are two main vegetation types – namely ape Fynbos and Renosterveld. Also, a variety of animals native to Southern Africa can be found (as seen in APPENDIX 1,2 & 3). During the field research, mammals such as red fox,	Natural surrounding land also comprises of Cape Fynbos and Renosterveld. Surrounding area comprises mainly of agricultural and livestock farming.

Topic	The three farms	Surrounding area
	steenbok, and blesbok were observed in the farm.	
Activities	Moodie’s is used as a conservation area, while the other farms are used for sheep farming and agriculture.	The main land use for neighbouring communities is farming. There are other economic activities such as retail, hospitality, fishing, and bird viewing. Witsand has the largest bull sharks caught in the Breede River. (“Witsand - Wikipedia”) There is also a popular kitesurfing and windsurfing due to the summer Southeaster. (“Witsand - Wikipedia”) A solar-powered desalination plant is under development in Witsand.
Population	The current lease holder and the farm workers are the people working in the three farms. They are predominantly male.	The community at Witsand has approximately 400 people and is comprised of youth, farmers, farm workers, women, school children and tourists.

4 Wildlife enterprise opportunities

This rapid area assessment for Moodie’s unpacked the governance, ecology, and socio-economic status of Moodie’s farm and the surrounding farms and communities. The ultimate aim of the assessment was to identify potential for the development of wildlife enterprises on the property.

Currently, beekeeping takes place on the property. In exchange for the right to keep bees, the beekeeper assists with bush management. The main track through the property along the coast is used by the neighbouring property for visitors to their individual upmarket (glamping) camping sites. In exchange, the neighbour assists in maintenance of the track.

Our field trip did not identify any significant opportunities for wildlife enterprise. There is not an abundance of wild planets with commercially valuable properties to merit a wild plant harvesting programme. Bontebok could be introduced as a free-range wild species

with the potential for harvesting for meat and hide. However, the costs of protection, notably fencing, is unlikely to justify managing a small population of the species.

The setting on the coast of the Indian Ocean is magnificent and low-impact ecotourism is a possibility. Possibilities could include birdwatching in the summer and private camping for families. Discussions with the neighbouring glamping business could indicate the potential for putting in 4 or so glamping sites on the property. The net returns to the landowner, i.e., the University would most likely be modest.

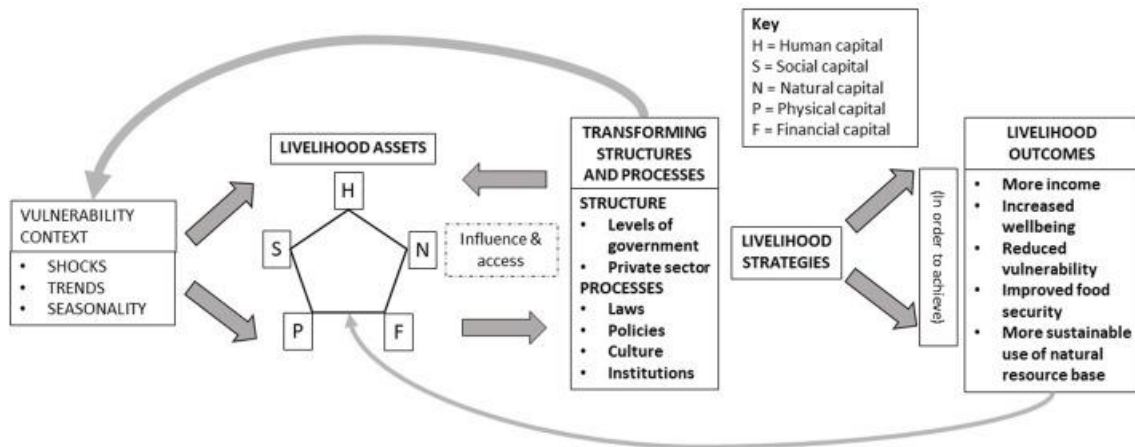
The farm, however, given its conservation status is a useful site for field-based research and training in topics such as conservation ecology and soils management. Though not strictly commercial enterprises, the farm can be a benefit to various academic departments in the University.

5 Further research

The assessment focused on one of the three Witsand farms owned by the University. For this farm, though it is managed for conservation of a coastal area, there are few apparent opportunities for developing wildlife enterprises and thus for being a study site for AWEI. However, the possibilities for wildlife enterprises on all three farms, notably wildlife ranching and possibility some wild plant harvesting, might be greater. In collaboration with others in the Faculty of AgriSciences, AWEI could contribute to further research on the three farms, particularly with respect to the potential for wildlife enterprise that will support the rewilding of the farms and enhance local livelihoods.

The assessment highlighted the need for a more systematic and integrated approach to assessing the wildlife enterprise potential of an area. Though we were a multidisciplinary team of experts, we learned on the ground that we did not as a team have the best mix of expertise or experience to undertake this assessment. We also learned that we needed a logical framework for our assessment in order to both know what to look for and how to assess it. Thus, a further research opportunity is to develop an area-based wildlife enterprise assessment framework and methodology.

This framework could build on the work that has been done over the years on sustainable livelihoods framework. Natarajan et al. explore updating the following framework developed first developed by the UK's development department (DFID) in 199:



AWEI could likewise explore adapting this framework to area-based wildlife enterprise assessments. It is most likely that such assessments address much of the same issues as summarised in the left-hand part of this graphic:

- Vulnerability Context – including shocks, trends, seasonality, and perhaps also climate resilience and disaster risk management
- Livelihood Assets – Natural capital, Human capital, Social capital, Physical capital, and Financial capital with a particular focus on wild resources and local communities
- Transforming Structures and Processes – government structures, private sector and market processes, formal and informal governance including laws and traditions, culture, and beliefs, particularly with respect to the sustainable use of wild species

Regarding the right-hand of the graphic, an area-based wildlife enterprise assessment would aim to deliver similar livelihood outcomes such as more income, improved food security, and ensuring that use of wild species is sustainable. However, the focus of the livelihood strategy would be the development of inclusive wildlife enterprises.

Development of a framework and methodology for area-based wildlife enterprise assessments could then be field tested with areas such the three Witsand farms, and wildlife ranches and reserves that could be either private or communally owned.

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[Accessed 15 March 2023].


Appendix 1: Identified plant species




Aloes or Pelargonium were viewed although we did see several aloes close to the farm along the road to the farm. Very few plants were in flower and several plant samples were taken.






Name	Scientific name	Native region	Uses	Image
1. Coopers ice plant	Delosperma cooperi	Southern Africa		









Name	Scientific name	Native region	Uses	Image
2. Proud thatchreed	Thamnochortus erectus	Southern Africa		
3. Limestone cone bush	Leucadendron meridianum	Southern Africa		
4. Western coastal wattle	Acacia cyclops	Australia – invasive	Used to help stabilise coastal sands. It was introduced into Africa for this purpose, but it has spread rapidly and is now a serious pest in Southern Africa	
5. Candelabra lily	Brunsvigia josephinae	Southern Africa	Besides its value in ornamental horticulture, the dry bulb tunics are used as a wound dressing. It is known that young Xhosa men use the tunics as plasters after circumcision.	



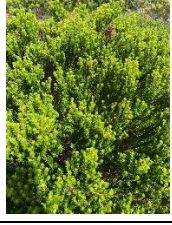




Name	Scientific name	Native region	Uses	Image
6. Langeberg indigo	<i>Indigofera priorii</i>	Southern Africa		
7. White bristle bush	<i>Metalasia muricata</i>	Southern Africa	Dried leaves are used as tea in Lesotho.	
8. Crimson heath	<i>Erica cruenta</i>	Southern Africa		
9. African peyote cactus/ Peyote – could be Mexican	<i>Lophophora williamsii</i>	Southern Africa/ Mexico?		
10. Bitterbossie/ Christmas berry	<i>Chironia baccifera</i>	Southern Africa	An infusion of the aerial parts of this species was traditionally used to purify the blood for the internal treatment of piles or haemorrhoids; 'aambeie' - Afrikaans term for piles or haemorrhoids.	





Name	Scientific name	Native region	Uses	Image
11. Tortoise berry	Muraltia spinosa	Southern Africa	A tea (infusion) brewed from stems and leaves is used to assist with abdominal pain and tuberculosis and is taken as a general tonic or bitter digestive. It is a remedy for treating colds, flu and bronchitis when brewed with Libeccio multiflora.	
12. Sour fig - although many medicinal properties, little found on the property as well as a common species found all over the Western Cape	Carpobrotus edulis	Southern Africa	The leaf juice is astringent and mildly antiseptic. It is mixed with water and swallowed to treat diarrhoea, dysentery, and stomach cramps, and is used as a gargle to relieve laryngitis, sore throat, and mouth infections. Chewing a leaf tip and swallowing the juice is enough to ease a sore throat.	

Name	Scientific name	Native region	Uses	Image
13. Koolhout	<i>Grubbia tomentosa</i>	Southern Africa	This is a fire-resistant species with a fireproof woody base and therefore grows well in environments subject to wildfires.	
14. Wild asparagus	<i>Asparagus lignosus</i>	Southern Africa		
15. Blue cabong	<i>Codonorhiza corymbosa</i>	Southern Africa		
16. Bitterbush	<i>Selago corymbosa</i>	Southern Africa		
17. Strawflower/ Honey everlasting	<i>Helichrysum patulum</i>	Southern Africa	Used to treat many ailments such as asthma, bladder infections, gynaecological disorders, backache, fatigue, stress hypertension, cardiac problems, and influenza. The strongly aromatic leaves can be used to keep insects and parasites away.	

Name	Scientific name	Native region	Uses	Image
18. Thatch reed	<i>Chondropetalum tectorum</i>	Southern Africa		
19. Fire lily	<i>Cyrtanthus angustifolius</i>	Southern Africa		
20. Wild asparagus	<i>Asparagus aethiopicus</i>	Southern Africa		
21. Metsana-a-manyenyane	<i>Ornithogalum graminifolium</i>	Southern Africa		
22. Cape edelweiss	<i>Lanaria lanata</i>	Southern Africa		
23. Bitterwortel	<i>Chironia jasminoides</i>	Southern Africa		
24. Key flower bush	<i>Lobelia linearis</i>	Southern Africa		
25. Heath phylica	<i>Phylica ericoides</i>	Southern Africa		
26. Dune buchu	<i>Acmadenia obtusata</i>	Southern Africa		
27. TBC				
28. TBC				
29. TBC				

Name	Scientific name	Native region	Uses	Image
30.TBC				
31.TBC				
32.TBC				
33.TBC				
34.TBC				
35.TBC				
36.TBC				
37.TBC				

Name	Scientific name	Native region	Uses	Image
38.TBC				
39.TBC				
40.TBC				
41.TBC				
42.TBC				
43.TBC				
44.TBC				

Name	Scientific name	Native region	Uses	Image
45.TBC				
46.TBC				
47.TBC				
48.TBC				

Appendix 2: Identified bird species

Birds were identified by Lood van Deventer in 2019.

Swimmers

1. Reed Cormorant
2. White-breasted Cormorant
3. Little Grebe
4. Spur-winged Goose
5. Egyptian Goose
6. South African Shelduck
7. Yellow-billed Duck
8. Cape Shoveler
9. Red-billed Teal
10. Cape Teal
11. Red-knobbed Coot

Waders

12. Greater Flamingo
13. Lesser Flamingo
14. African Spoonbill
15. Hadedda Ibis
16. African Sacred Ibis
17. White Stork
18. Black-headed Heron
19. Grey Heron
20. Western Cattle Egret
21. Little Egret
22. Black-winged Stilt
23. Pied Avocet
24. Three-banded Plover
25. Common Ringed Plover
26. Kittlitz's Plover
27. White-fronted Plover
28. Curlew Sandpiper
29. Little Stint
30. Common Greenshank

Walkers

31. Common Ostrich
32. Secretarybird
33. Blue Crane
34. Denham's Bustard (Vulnerable)
35. Southern Black Korhaan (Vulnerable)
36. Karoo Korhaan
37. Helmeted Guineafowl
38. Grey-winged Francolin
39. Cape Spurfowl (Endemic)
40. Common Quail
41. Spotted Thick-knee
42. Crowned Lapwing
43. Blacksmith Lapwing

Raptors

44. Jackal Buzzard
45. Common Buzzard
46. Yellow-billed Kite
47. Rock Kestrel
48. Peregrine Falcon

Sleepers

- 49. Spotted Eagle-Owl
- 50. Fiery-necked Nightjar

Common

- 51. Speckled Pigeon
- 52. Namaqua Dove
- 53. Cape Turtle Dove
- 54. Red-eyed Dove
- 55. Laughing Dove
- 56. Diederik Cuckoo
- 57. Malachite Kingfisher
- 58. African Hoopoe
- 59. Cape Crow
- 60. White-necked Raven

Flyers

- 61. White-rumped Swift
- 62. Alpine Swift
- 63. African Black Swift
- 64. White-throated Swallow
- 65. Barn Swallow
- 66. Pearl-breasted Swallow
- 67. Brown-throated Martin
- 68. Rock Martin
- 69. Greater Striped Swallow

Runners

- 70. Common Starling
- 71. Pied Starling
- 72. Red-winged Starling
- 73. Karoo Scrub Robin (Endemic)
- 74. Cape Robin-Chat
- 75. Capped Wheatear
- 76. African Stonechat
- 77. Familiar Chat
- 78. Cape Wagtail
- 79. Cape Longclaw
- 80. African Pipit
- 81. Long-billed Pipit
- 82. Red-capped Lark
- 83. Large-billed Lark
- 84. Cape Clapper Lark
- 85. Agulhas Long-billed Lark

Perchers

86. Red-faced Mousebird
87. Speckled Mousebird
88. Cardinal Woodpecker
89. Southern Fiscal
90. Bokmakierie
91. Southern Boubou
92. Southern Tchagra
93. Fork-tailed Drongo
94. Fiscal Flycatcher
95. Cape Bulbul
96. Sombre Greenbul
97. Little Rush Warbler
98. Neddicky
99. Zitting Cisticola
100. Grey-backed Cisticola (Endemic)
101. Levaillant's Cisticola
102. Bar-throated Apalis
103. Karoo Prinia (Endemic)
104. Cape White-eye

Suckers

105. Cape Sugarbird
106. Malachite Sunbird
107. Orange-breasted Sunbird
108. Southern Double-collared Sunbird (Endemic)
109. Greater Double-collared Sunbird

Seed eaters

110. House Sparrow
111. Cape Sparrow
112. Southern Grey-headed Sparrow
113. Southern Masked Weaver
114. Cape Weaver
115. Yellow Bishop
116. Southern Red Bishop
117. Pin-tailed Whydah
118. Common Waxbill
119. Cape Canary
120. Yellow Canary (Endemic)
121. Brimstone Canary
122. White-throated Canary (Endemic)
123. Streaky-headed speedeater
124. Cape Bunting (Endemic)

Appendix 3: Identified animal species

Mammals prevalent on the land as observed by Lood van Deventer, Dr Elsje Pieterse, Savanna Straus, Wiseman Ndlovu, and Reinhard Bonke Nyandire

NB: Most of the antelopes and other animals seen on the farm do travel between the surrounding farmlands, therefore the exact frequency of the animals is unknown.

Name	Scientific name	Native region
Bushbuck	<i>Tragelaphus sylvaticus</i>	Sub-Saharan Africa
Blesbok	<i>Damaliscus pygargus phillipsi</i>	South Africa (Endemic)
Steen buck	<i>Raphicerus campestris</i>	Southern / Eastern Africa
Fallow deer	<i>Dama dama</i>	Non-indigenous species imported from Europe during the early colonization of South Africa.
Blue duiker	<i>Philantomba monticola</i>	Southern / Eastern Africa
Common duiker	<i>Sylvicaapra grimmia</i>	Areas South of the Sahara
Springbuck	<i>Antidorcas marsupialis</i>	Southern / Western Africa
Bontebok	<i>Damaliscus pygargus</i>	Southern Africa
Grey Rhebok	<i>Pelea capreolus</i>	South Africa, Lesotho, and Eswatini.
Cape fox	<i>Vulpes chama</i>	Southern Africa
Leopard tortoise	<i>Stigmochelys pardalis</i>	South Africa
Dassie/ Cape hyrax	<i>Procavia capensis</i>	Africa/ Middle East
Leopard – no sightings on 2/483 but have been seen in the surrounding areas, therefore can travel locally in search for food (antelopes and small mammals)	<i>Panthera pardus</i>	Africa
Yellow mongoose	<i>Cynictis penicillata</i>	Southern Africa
Cape grey mongoose	<i>Galerella pulverulenta</i>	South Africa, Lesotho, and Southern Namibia

Water mongoose	<i>Atilax paludinosus</i>	
Caracal – with the species being predatory they will migrate to where prey is frequent	<i>Caracal caracal</i>	Africa, the Middle East, Central Asia, and arid areas of Pakistan and northwestern India.
Cape porcupine	<i>Hystrix africaeaustralis</i>	Central / Southern Africa
Bat eared fox	<i>Otocyon megalotis</i>	Southern / Eastern Africa
Black backed jackal	<i>Canis mesomelas</i>	Southern / Eastern Africa
Cape hare	<i>Lepus capensis</i>	Africa

Reptiles – Prevalent species

English Name	Scientific Name	IUCN Category (IUCN 2015)	South African Red Data Book Category (Bates et al. 2014)
southern adder	<i>Bitis armata</i>	Not Assessed	Vulnerable
Cape dwarf chameleon	<i>Bradypodion pumilum</i>	NULL	Vulnerable
loggerhead turtle	<i>Caretta caretta</i>	Endangered (A1abd)	Vulnerable
green turtle	<i>Chelonia mydas</i>	Endangered (A2bd)	Near Threatened
leatherback sea turtle	<i>Dermochelys coriacea</i>	Critically Endangered (A1abd)	Endangered

Notes:

- 46 indigenous species of reptiles could possibly be found of which 2 are threatened.
- 10 indigenous species of amphibians could possibly be found none of which are threatened
- 84 indigenous species of marine fish could possibly be found as the farm does border the Indian Ocean