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The development of management guidelines for the conservation of heritage resources in Wakkerstroom, Mpumalanga

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MASTERS RESEARCH REPORT

The development of management guidelines for the conservation of heritage resources in Wakkerstroom, Mpumalanga

Reitumetse Sethaba

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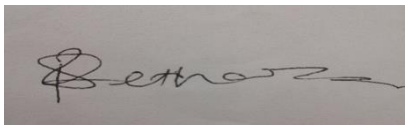
This research report is submitted in partial fulfilment of the requirements for the degree of Masters in Environmental Sciences by Coursework and Research Report

University of the Witwatersrand
School of Animal, Plant and Environmental Sciences

March, 2020

Declaration

I declare that this research report is my own research and ethical clearance was obtained from the University of the Witwatersrand, Johannesburg for the conduction of this research (Protocol number: HA1905). This report is submitted as part of the requirements of a Masters in Environmental Sciences by Coursework and Research Report Degree at the University. I declare that this research project was supervised by Professor Mary Scholes of WITS University and that this research report has not been submitted for examination at any other university.



Reitumetse Sethaba

Date: 17/08/2020

Abstract

Sustainable Development Goal 11 (SDG 11) states: “make cities and human settlements inclusive, safe, resilient and sustainable”, including the target to “strengthen efforts to protect and safeguard the world’s cultural and natural heritage”. Heritage resources are important to conserve because they allow a historical context, are included in the definition of identity and in some cases provide livelihoods for people in South Africa and the world. Management is fundamental for conservation to be successful, and stakeholder engagement plays an important role. This study aimed to use stakeholder perceptions to contribute to the development of management guidelines for conservation of heritage resources in the town of Wakkerstroom, Mpumalanga. To achieve this, heritage resources in the town were identified. A stakeholder map was constructed to illustrate stakeholder groups and linkages relating to conservation in the town. Interviews were conducted for information including heritage value definitions, perceived threats to heritage, valued resources and key conservation issues. Stakeholders in the Esizameleni Township area (27 respondents), the Town area (15 respondents) and managers of key conservation organisations in Wakkerstroom were interviewed. Resources identified included the Wakkerstroom wetland, the Paul Kruger Bridge, St Mark’s Anglican Church, the Old Courthouse Building and the Nederduitse Gereformeerde Kerk. From interviews, a disconnect was noted amongst the stakeholders of the two sites with heritage conservation efforts found to be concentrated in the Town area of Wakkerstroom. Heritage value definitions in the Town area were centered on inheritance, while Township stakeholders valued the identity aspect of heritage. A lack of communication, participation and awareness around heritage conservation were identified as key issues amongst the communities. In addition, unlike with natural heritage conservation, no organisation was found to be responsible for cultural heritage conservation in the town. The study makes suggestions for improved management by responsible organisations and the municipality. Suggestions in natural heritage management include addressing cattle grazing and fire management in the wetland. Suggestions are also made regarding addressing issues relating to a lack of communication and participation in conservation. While natural heritage is under the care of the Wakkerstroom Natural Heritage Association (WNHA), there is no organization in the town tasked with the care of cultural heritage resources. The municipality

of Dr. Pixley Ka Isaka Seme must take further responsibility on provisioning for better management of cultural heritage through the formation of a committee or organization, possibly under the same umbrella as the WNHA. All suggestions towards improved heritage conservation are made with the aim of achieving sustainable communities in the town of Wakkerstroom, contributing to SDG 11.

Key words:

Heritage; Conservation; Resource management; Stakeholder engagement; Sustainable communities

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Chapter 1: Introduction, Rationale, Aim and Objectives

The term "heritage" is used loosely to describe everything that is inherited or handed down to future generations from the past (Lowenthal, 2005). Natural heritage resources usually refer to resources such as land, water, animals and plants. Cultural heritage resources include entities such as buildings, art, traditions and practices of cultural significance and historical value (Lowenthal, 2005). Heritage definitions can also be divided into tangible and intangible forms. Tangible heritage has been defined as "a monument, group of buildings or site of historical, aesthetic, archaeological, scientific, ethnological or anthropological value" (Kirshenblatt-Gimblett, 2004). Intangible heritage on the other hand has been said to refer to "all forms of traditional and popular culture, i.e. collective works originating in a given community and based on tradition" (United Nations Educational, Scientific and Cultural Organization (UNESCO), 1989; Civallero, 2007). These include languages, dance, music, traditional medicine and other practices (Lowenthal, 2005; UNESCO, 1989; Civallero, 2007).

Heritage resources have been shown to be important in, amongst other factors, issues of history, identity, and sustenance of livelihoods for people in South Africa and the world. It is for these reasons, amongst others, that conservation of heritage resources is important, in order to safeguard these benefits for future generations. This importance of heritage conservation is echoed by the 11th Sustainable Development Goal (SDG) stating the aim to "make cities and human settlements inclusive, safe, resilient and sustainable," with a focus on "strengthening efforts to protect and safeguard the world's cultural and natural heritage" (Patel *et al*., 2017).

Resource management serves as a tool necessary for resource conservation, protecting resources through monitoring the use, preventing the damage to, and over-exploitation of, valued resources (Cleere, 2010). In addition to an improved, or maintained state of the environment, well managed resources can also lead to broader community involvement and greater social cohesion, contributing to sustainable communities (Hribar *et al*., 2015).

Stakeholder engagement is an important process in resource management, representing inclusive management strategies. In heritage conservation and resource management, stakeholders include those affected by, or interacting with, the heritage resources in question (Blundo *et al*., 2018). The perceptions of stakeholders are a tool used in stakeholder engagement to understand how people value their resources (Carter and Bramley, 2002). Understanding perceptions gives an indication of the actions that should be taken towards

resource conservation and management (Bakri *et al*., 2015). Incorporating perceptions of people into management facilitates effective management and subsequently supports the move towards the goal of sustainable development through resource maintenance and conservation (Jaafar *et al*., 2015).

This project sets out to contribute to the development of management guidelines for the historically relevant town of Wakkerstroom, Mpumalanga. Wakkerstroom is located on the border of KwaZulu Natal and Mpumalanga, and falls under the jurisdiction of the Dr. Pixley Ka Isaka Seme municipality. The town is one of the oldest towns of the old Transvaal, with historical events in the town's past resulting in the presence of a rich cultural heritage (more detail will be provided in Chapter 2). The presence of inhabitants of Ndebele, Zulu and Afrikaner language groups also suggests diverse heritage in the area. Wakkerstroom is made up of a Township (Esizameleni Township), and more developed Town area, with maize farming as the main activity, along with some livestock farming taking place. Ecologically, Wakkerstroom consists of river and water systems including the informally protected Wakkerstroom wetland where rare birds have been sighted, fuelling birding as an important tourism activity in the town (Khan, 2010). These areas of ecological importance demonstrate the rich natural heritage of Wakkerstroom.

The study will not only highlight the rich heritage of Wakkerstroom as one of the towns in Mpumalanga, but also set the scene for exploration of other heritage rich towns in the province and beyond, creating a case for the improvement and establishment of heritage resource protection by the government, and other stakeholders. This will contribute to the attainment of the 11th SDG in the Wakkerstroom community and beyond. Identifying resources, their uses, conservation issues, stakeholders, as well as stakeholder issues and interests' aids in the development of future management actions aimed at resource conservation, resource sustainability, and sustainable communities under SDG 11.

Project aim and objectives

Aim

To use stakeholder perceptions in an assessment of the natural and cultural heritages in Wakkerstroom, Mpumalanga in order to make suggestions towards the development of management guidelines for their conservation.

Objectives

The objectives of this study were:

1) to identify the natural and cultural heritage resources in the Wakkerstroom area;

2) to create a stakeholder map of the various stakeholders associated with natural and cultural heritage resources in the Wakkerstroom area;

3) to assess perceptions of stakeholders in the area towards natural and cultural heritage resources and

4) to use the perceptions of stakeholders, and stakeholder interactions to make suggestions for the development of management plans for heritage resources in Wakkerstroom.

Chapter 2: Literature review

This literature review begins by looking at the history of the town of Wakkerstroom, responsible for part of the heritage observed in the area. This is followed by literature on the various types of value, value definitions and how "value" is attributed to various resources by people. The importance of stakeholder engagement in management and management decisions is then discussed, followed by the best practices in stakeholder engagement towards overall improved management. Legislation associated with the protection of heritage resources is also included, coupled to information on the grading of resources provisioned for by legislation in South Africa. Sections on municipalities and management, the components of management plans and challenges to the management of heritage resources are also included in this review.

The History of Wakkerstroom

Wakkerstroom is situated at the border of the Mpumalanga and KwaZulu Natal Provinces and is one of the oldest towns (6th oldest town) of the old Transvaal dating back to 1859. Major historical events, including various wars, have linkages to the town of Wakkerstroom. These wars were, to a greater or lesser extent, fought in the town, leaving behind remnants of rich heritage.

The Anglo-Boer War (1899-1902), also known as the First Transvaal War of Independence is one of these wars, referring to the war that arose between the British and the Boers during the time (South African History Online (SAHO), 2011). The war began because of, amongst other factors, Boer resistance to the intention and desire of the British to seize the Transvaal of the time and extend British rule. In 1877, the third President of the South African Republic at the time, Paul Kruger- after whom one of the monuments in the town of Wakkerstroom is named- as well as another former President of the South African republic T.F Burgers were involved in travelling to England to present a case of releasing the Transvaal from British possession (Allen, 2003).

Another war linked to Wakkerstroom is the Anglo-Zulu War (1879-1896). This war took place as a result of the resistance of the Zulu people to rule by the colonialists (Lieven, 1998). The British High Commissioner of the time, Sir Bartle Frere, saw the Zulu nation as a threat to the policy to be implemented, which sought to have British colonies, Boer republics and African groups under a single, common controlling body (SAHO, 2011). The Zulu Nation

was also feared for its military power which was perceived as a threat to peace. Parts of this war were also fought in the town of Wakkerstroom (Jones, 2005; SAHO, 2011).

Wakkerstroom is separated into two parts, made up of Town and Township areas. The Township, as with other townships in South Africa was established during the apartheid regime (Jürgens *et al*., 2013). Township areas were established by the regime with the aim of creating and maintaining racial segregation. Townships were reserved for non-white South Africans including Africans, Indians and Coloured people (Pernegger and Godehart, 2007). This separation was conducted under the Group Areas Act 41 of 1950. Township areas were, and still are characterised by high levels of unemployment, and poverty. High disease prevalence, gangstarism, drug abuse and violence are amongst the issues manifesting in townships in South Africa directly or indirectly as a consequence of this unemployment and poverty (Jürgens *et al*., 2013; Kalichman and Simbayi, 2003; Wood *et al*., 2010; Salo, 2003).

Although a further sequence of events detailing the development of the town and occurrences which took place in the town following the Boer War leading to Apartheid are unavailable, the information pertaining to major historical events, including those mentioned above provides sufficient background in terms of the history of the town. The presence of diverse inhabitants of different backgrounds made the town of Wakkerstroom an appropriate site for the exploration of different perceptions towards heritage resources, as understood by a range of different stakeholders. The presence of different backgrounds also adds to the wealth of heritage of the town.

Heritage and defining the "value" of heritage resources

In considering heritage resource management, it is important to establish and understand the significance of various resources to a town and its inhabitants. Significance is attributed according to the value placed by people on the heritage resource (The Burra Charter, 1999). Heritage value is defined by Díaz-Andreu (2017) as "the meanings and values that individuals or groups of people bestow on heritage." The value attributed to a heritage resource underlies the importance attributed to its conservation, and is therefore an important consideration in identifying aspects of heritage to protect, and provision for in heritage resource management. Understanding the value allocated to resources by the people interacting with the resources, and the reasons for this value ascription, can serve as a determinant of how resources should be conserved and, where complete heritage

conservation cannot be achieved, which heritage resources are considered more important to conserve than others (de la Torre, 2013; Avrami, 2000). Amongst reasons for the appreciation of a resource, the value of the resource can be perceived to be due to the derivation of various benefits from the resource in an area. These include economic benefits such as those offered by tourism, and social benefits (Hall and McArthur, 1996; Carter and Grimwade 1997).

According to de la Torre (2013) heritage has come to include places of varied importance, resulting in various definitions of 'significance' of the heritage resources concerned (de la Torre, 2013). Heritage value definitions differ according to the communities to which people belong, race, gender and other background information (Deacon and Smeets, 2013). De la Torre (2013) describes the values of heritage resources according to various categories including: attributed, multiple, mutable and incommensurable forms of value.

"Attributed" values describe values that are not intrinsically a part of the resource, but are rather allocated to a particular resource by its stakeholders (Jones, 2017). These values are given according to a perceived benefit obtained from the resource in question. In this description, value perception may be due to the historical, psychological, cultural and educational backgrounds of stakeholders (Lipe, 1984). Economic and social status of stakeholders concerned have also been implicated in factors contributing to defining the attributed values of resources (Spennemann, 2006). "Attributed values" link to the category of "multiple values" where various perceived significances and benefits of heritage resources amongst stakeholders are presented. These "multiple values" are due to the presence of numerous stakeholders that interact differently with a resource, resulting in implications for how the resource is viewed and valued, and subsequently on the approach to the necessary heritage resource conservation and management (Low, 2002).

Where "mutable values" are concerned, values are categorised according to their tendency to change. Mutable values are based on dynamic factors such as the beliefs and emotions of stakeholders (Zimmerman, 2010). The changes characterising mutable values can be attributed to changes in the demographics of a society, resulting in changes in the views held towards heritage resources (de la Torre, 2013). "Incommensurable" or incomparable cultural heritage values describe values which cannot be measured according to the same standards, where no common measure can be used to place the importance of some values over others (de la Torre, 2013).

De la Torre (2013) states that, defining the value of a resource is important in conservation and heritage resource management as heritage resources afforded a valued status, and protected according to that value, have been seen to increase in value over time, whereas those not afforded value tend to conversely degrade and disintegrate in the long run (de la Torre, 2013). This reiterates the findings by Nijkamp (1989) of the importance of establishing and understanding value ascription and significance amongst communities for effective heritage conservation.

The conflict aspect involved in the description of value arises where the value must be measured to allocate resources (such as capital) to the protection of heritage resources. The inability to develop and implement a single measure of value to the resources concerned can create conflict amongst stakeholder interests and definitions of value (de la Torre, 2013).

Other value based challenges to heritage resource management are seen in developing countries such as South Africa where, because of the importance of generating revenue, monetary and aesthetic forms of value that promote tourism are ranked often over other cultural or historical values (Wright and Eppink, 2016). Although the conflict described above has been said to be unavoidable (de la Torre, 2013), in seeking to effectively manage cultural and natural heritage resources, it is important to understand, define and attempt to incorporate the different values placed on heritage resources by various stakeholders in an attempt to minimise this conflict (de la Torre, 2013).

An understanding of value definitions enables resource managers to suggest and improve the management of heritage resources in a way that thoroughly considers a holistic view of the significance of heritage sites and resources (Carter and Bramley, 2002).

Value has also been described in terms of economics, to attach a monetary type value system to heritage resources (Carman, 2014). The economic value of heritage has been described as "the sorts of values that individuals recognise and are willing to pay for in one way or another." Further distinction is made, with the description of "use value" where value is through direct consumption of a service or ownership of a heritage object. "Non-use value" has been described as a passive value where resources are valued because they exist, to keep open the prospect of future use of the heritage resource including passing the resource on to future generations through inheritance (Carman, 2014).Private and public value definitions have also been provided. Private value refers to ownership and economic benefits obtained from a resource, that benefit the private owner of the resource (Carman, 2014).

The understanding communities and individuals have of value, and valued heritage is often based on oral transfer of information through sources such as narratives and folktales, which confer meaning to places and resources of historical value (Bender and Aitken, 1998; Riley *et al*., 2005). It has also been shown that meanings associated with resources at a local level trump those allocated by countries at a national level, with the former often valued more by communities (Waterton, 2005).

The importance of stakeholder engagement in management

Stakeholder engagement in the environmental sector has been on an increasing trajectory since the 1980s (Young *et al.*, 2013). The United Nations Conference on Environment and Development (UNCED) identified stakeholder engagement in management and decision-making as one of the steps instrumental in the move towards sustainable development (UNCED, 1992). The argument for this has been mainly around that of bringing different perspectives in the form of knowledge and values into the processes of decision-making, in order to make better decisions where people and development are concerned (Renn, 2006; Chirikure and Gibert, 2008).

An increase in trust between the community and management has been recognized where stakeholder engagement takes place, and consultation regarding decision-making is carried out (Munton, 2003). In line with this, a study by Sultana and Abeyasekera (2008) looking at fishery management found communities were quicker to adopt and take part in management actions when stakeholder consultation took place, versus when consultation was omitted. In a case study looking at the The Great Lakes region, located on the Canada and USA border, Beierle and Konisky (2001) found an improvement in the standard of decisions made with regards to resource management when various parties and stakeholders were consulted and involved in decision making processes.

Local stakeholders in communities have been recognized as key components of development and resource conservation (Azman *et al.*, 2010). An understanding of stakeholder attitudes was linked to greater potential for sustainability and conservation. In terms of stakeholder perceptions and appreciation for resources, Azman *et al.* (2009) found stakeholders that were more educated about resources and their uses made better decisions, and took better actions in terms of resource protection and conservation. Successful awareness programmes leading to improved awareness were said to bridge the gap between scientific information and people

living in communities, contributing to the success of conservation initiatives implemented (Azman *et al*., 2010).

Best practice in stakeholder engagement towards improved management

In terms of best practice, participation that empowers stakeholders through, not just enabling participation in decision making, but also ensuring that stakeholders are able to impact decisions and actions taken in and around management issues is suggested (Weber and Christophersen, 2002). In addition, stakeholder understanding of topics must be facilitated in order to ensure meaningful engagement with issues and subjects at hand (Reed, 2008). Stakeholder engagement must also compensate for differences in backgrounds (e.g. education levels, ages etc.) amongst stakeholders when communicating to and drawing information from, stakeholders, in order to ensure meaningful engagement (Reed, 2008; Prell *et al*., 2007).

It is also suggested that stakeholder engagement be conducted as early as possible in the processes of projects, or potential management strategies to ensure effectiveness of the process (Chess and Purcell, 1999; Stringer *et al*., 2006). Continued participation of stakeholders in management through participation in monitoring and evaluation processes has also been recommended (Estrella *et al.*, 2000).

Stakeholder identification and analysis have also been linked to stakeholder engagement best practice, contributing to the effectiveness of the engagement. This process outlined by Reed (2008) involves identification of the resources in a system to be affected by management, identification of relevant stakeholders linked to the resources identified, and the involvement of these individuals in decision making. Stakeholder analysis in this way also involves stakeholder categorisation and investigating relationships between stakeholders. Categorisation of stakeholders can take place through a top-down approach whereby researchers create categories based on their understanding of the system to which the stakeholders belong. A bottom-up approach involves categorisation by the stakeholders themselves through a participatory process (Hare and Pahl-Wostl, 2002; Dryzek and Berejikian, 1993).

To ensure that effective stakeholder engagement takes place for the purpose of improving management, stating clear objectives for the stakeholder engagement undertaken is

fundamental (Chess and Purcell, 1999; Reed, 2008). This, as well as the integration of knowledge and perceptions from all stakeholders is said to be imperative to the success of the process (Dryzek, 2002; Renn 2004).

Regulations and policy governing heritage resource management in South Africa

The importance of heritage resources in South Africa is seen to be recognised through provision by legislation in the country for the protection of such resources (Kotze and Van Rensburg, 2003). Legislation is vital to the identification of heritage sites of cultural and natural heritage significance. South Africa's legislation moved from the Bushman Relics Protection Act of 1911 which sort to protect the buildings of colonialists, to the National Monuments Act of 1969 which had a greater focus on protecting heritage associated with Afrikaaner Nationalism (Delmont, 2004). The National Heritage Resources Act 25 of 1999 (NHRA), the current Act in place for heritage protection, represented a more inclusive form of heritage legislation, considering indigenous heritage, as well as intangible and tangible forms of heritage (Delmont, 2004). In addition, the Act creates a focus on sustainable use of resources through creating a balance between conservation and tourism, and economic benefit from resources. The Act also highlights the importance of public education and the understanding of the significance attributed to resources supporting their protection (Delmont, 2004). The NHRA builds on the strengths of earlier legislation including provision of protection of both built heritage and the natural environment.

The NHRA provisions for the protection of heritage resources at national, provincial and local scales (Kotze and Van Rensburg, 2003). Under section 3 (3), and section 7(1) the NHRA also provides criteria for the grading of resources determine the level at which conservation should be managed. Resources are graded according to the importance attributed to the resource on a national (Grade I), provincial (Grade II) or local level (Grade III). Grade I heritage resources are defined under this section as those with "qualities so exceptional that they are of special national significance," and are managed at a national level. Grade II heritage resources are those "which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region," and are managed at a provincial level, while Grade III heritage resources defined as "other heritage resources worthy of conservation" are managed by local municipalities (NHRA, 1999). Grading is performed in order to provision for formalised protection of heritage resources through the allocation of management responsibility to the relevant organisations at various levels (South African Heritage

Resources Agency, 2017). When grading a resource, information is thoroughly reviewed regarding the history of the location, the importance of the site and the importance of declaring the identified location as a site of heritage significance (South African Heritage Resources Agency, 2017).

The South African Heritage Resources Agency (SAHRA) is a corporate body established within section 11 of the NHRA. This organization is tasked with: management and record keeping of nationally significant heritage, the promotion of public knowledge of resources, establishment of principles and standards for these resources, provision of support to local and provincial levels of resource management, and the monitoring of compliance with legislation, amongst other duties stipulated by section 13 of the NHRA.

Where Grade I resources are identified, SAHRA carries out public participation processes in order to inform interested and affected parties of intentions to declare resources protected, and to provide an opportunity for comment (SAHRA, 2017). Public participation is mandated by the NHRA under which SAHRA operates. Once resources are approved, and declaration takes place, a conservation management plan is developed according to the SAHRA management plan guidelines (SAHRA, 2017). The NHRA also provisions for the protection of resources through inclusion of stipulations such as that of Environmental Impact Assessments (EIAs) where a heritage resource may be affected by a proposed development in an area (Section 38). In the cases of heritage resources recognized and protected by the Act, removal, or damage of the resource is often prevented through the requirement by this legislation to develop without damage to the resource.

The EIA process is conducted according to national guidelines and standards stipulated by SAHRA (SAHRA, 2006). In relation to heritage resources, and Heritage Impact Assessments, the impacts proposed activities will have on the heritage resources located in the area that activities are set to take place are determined and assessed.

The impacts are assessed according to their interactions with, and effects on, biological, physical, cultural and human elements (Wells *et al*., 2013). The impacts are also assessed according to the value and significance attributed to the resources in question. The value and significance attributed is usually assessed according to the NHRA. The importance of the resource is determined to fall under the main criteria of aesthetic, historic, scientific and social dimensions. These are assessed against attributes such as those mentioned in the NHRA, International Council On Monuments and Sites (ICOMOS) Guidance on Heritage

Impact and the Burra Charter (Table 1), from which the importance of the resource is then scaled (Table 2). The Burra Charter is an international document that sets out guidelines for the conservation and management of places of cultural significance (Wells *et al*., 2013). The integrity of the resource is also assessed in order to assess the condition of the resource, and assess whether impacts by proposed activities would impact on the state of the resources in question (Table 3).

Table 1: The dimensions and attributes considered in assessing project impacts on heritage resources in EIAs. Source: (Wells *et al.*, 2013).

Dimension	Attributes considered		NHRA Ref.
Aesthetic and technical Historical importance and associations	1	Importance in aesthetic characteristics	S.3(3)(e)
	2	Degree of technical / creative skill at a particular period	S.3(3)(f)
	3	Importance to community or pattern in country's history	S.3(3)(a)
	4	Site of significance relating to history of slavery	S.3(3)(i)
	5	Association with life or work of a person, group or organisation of importance in the history of the country	S.3(3)(h)
Information potential	6	Possession of uncommon, rare or endangered natural or cultural heritage aspects	S.3(3)(b)
	7	Information potential	S.3(3)(c)
	8	Importance in demonstrating principle characteristics	S.3(3)(d)
Social	9	Association to community or cultural group for social, cultural or spiritual reasons	S.3(3)(g)

Table 2: The importance attributed to resources from the attributes allocated in the EIA process. Source: (Wells *et al.*, 2013).

Importance	Definition
0	None
1	Attributes considered commonplace, well or over represented; Importance generally not considered by any community
2	Attributes considered uncommon, underrepresented; Importance generally considered by some communities.
3	Attributes considered singular, unique, irreplaceable; Importance always considered by most communities.

Table 3: Scale used in the assessment of the integrity of a resource according to its condition. Source: (Wells *et al.*, 2013).

Integrity	Definition
0	Resource degraded to extent where no information potential exists; resource cannot be restored; single, isolated find, without any site context.
1	Poor condition, active decay visible; excessive restoration required; little information potential.
2	Fair to good condition; well preserved; some decay present; can be easily restored/conserved/preserved; good information potential.
3	Excellent/pristine; extremely well preserved; little to no decay present; little restoration required/restoration will greatly enhance resource; excellent information potential.

The impact of a proposed activity is then characterised according to the duration over which resource change will take place due to the impact, the scale of the change to occur on the heritage resource in question, the intensity (how the impact could change the importance of the resource) and the probability of the change to the resource taking place due to the impact (Wells *et al*., 2013). The above criteria are assessed according to scales (Table 3) and the outcomes are then used to describe the magnitude of the impacts associated with activities of a proposed project. Magnitude essentially describes the degree of change that the impact is likely to impart upon the heritage resource. The magnitude is described according to the table below (Table 4).

Table 4: Categorising the magnitude attributed to an impact on heritage resources. Source: (Wells *et al.*, 2013).

Threshold	Magnitude	Archaeology, Palaeontology	Built Environment/Structures	Historic Landscape
0	No change	No change	No change to fabric or setting	No changes to landscape elements, parcels or components; no visual or audible changes; no changes in amenity or community factors.
1-49	Low	Very minor changes to key archaeological materials, or setting.	Slight changes to historic building elements or setting that hardly affect it.	Very minor changes to key historic landscape elements, parcels or components; virtually unchanged visual effects; very slight changes in noise or sound quality; very slight changes to use or access; resulting in very small change to historic landscape character.
50-98	Medium	Changes to key archaeological materials, such that the resource is slightly altered; slight changes to the setting.	Change to key historic building elements, such that the resource is slightly different; change to setting of an historic building, such that it is noticeably changed.	Change to few key historic landscape elements, parcels or components; slight visual changes to few key aspects of the historic landscape; limited changes in noise or sound quality; slight changes to use or access; resulting in limited changes to historic landscape character.
99-147	High	Changes to many key archaeological materials, such that the resource is clearly modified; changes to the setting that affect the character of the asset	Change to many key historic building elements, such that the resource is significantly modified; change to setting of an historic building, such that it is significantly modified.	Change to many key historic landscape elements, parcels or components; visual change to many key aspects of the historic landscape; noticeable differences in noise or sound quality; considerable changes to use or access; resulting in moderate changes to historic landscape character.
		Changes to attributes that convey outstanding national value of national estate; Most or all key archaeological materials, including those that contribute to ONV such that the resource is totally altered; comprehensive changes to setting	Change to key historic buildings that contribute to outstanding national value of national estate such that the resource is totally altered; Comprehensive changes to setting.	Change to most or all key historic landscape elements, parcels or components; extreme visual effects; gross change of noise or change to sound quality; fundamental changes to use or access; resulting in total change to historic landscape character unit and loss on outstanding national value.

Once the magnitude of impacts is assessed, the mitigation of impacts is then considered, where options are explored to avoid, reduce the impact or mitigate potential effects, to protect the heritage resource(s) in question. Once these are considered, the residual impacts are considered involving a reassessment of impacts following suggested mitigation measures. Cumulative impacts are also considered where actions from the project interact with other activities to produce other, cumulative impacts on the heritage resources and the area in which they are found (Wells *et al.*, 2013). Depending on the size of the project, and time taken to review projects, EIAs have been recorded to take from six months, to over a year to complete (Sandham *et al.*, 2005; Western Cape Government, n.d.).

In addition to the NHRA, the World Heritage Convention Act 49 of 1999 (WHCA) considers the protection of sites on an international scale and provisions for the protection and sustainable use of heritage sites with World Heritage recognition in South Africa (Kotze and

Van Rensburg, 2003). These include the Cradle of Human Kind in Gauteng and Robben Island in Cape Town.

Municipalities and management

In South Africa, municipalities are the structures under which local government operates. Municipalities fulfil the role of executing governmental authority through legislative, executive and judicial power at more localized levels, interacting more closely with communities (South African Local Government Association Governance Framework, n.d.). Municipalities are categorised into Metropolitan municipalities (Category A), Local municipalities (Category B) and District Municipalities (Category C) (South African Local Government Association Governance Framework, n.d.). Municipalities are the main bodies responsible for the conservation of resources in towns and cities, and subsequently have the task of coordinating activities associated with such conservation.

Integrated Development Plans (IDPs) are made with the intention of coordinating plans and processes in local municipalities and are a requirement under the Local Government Transition Act of 1993 (Harrison, 2001). IDPs are also legislated under the Municipal Systems Act (Act 32 of 2000). As planning documents, IDPs are important in ensuring that resources such as capital, which are often limited, are used effectively. IDPs also ensure that plans are implemented according to stipulated timeframes, often taking into account potential delivery backlogs. In terms of heritage resource conservation, IDPs may include plans for conservation of important heritage sites and resources in municipalities in which they exist, under categories such as those of tourism (German Technical Institute, 1998).

The mayoral component of the municipality has the responsibility to review and revise IDPs (Municipal Systems Act of 2000). The executive mayor has the responsibility under the statutory functions to identify the needs of the municipality and provision for these through strategies and review of national and provincial plans (South African Local Government Association Governance Framework, n.d).

Challenges with implementing the IDP process include issues with execution of actions in the IDP. The blame has often been placed on the municipal manager for not using the planning document to implement and monitor development (Madzivhandila and Asha, 2012). Poor integration of IDPs with plans at district level has also been mentioned as a challenge. Achieving public participation in the process of IDP development is also a recognized

challenge (Madzivhandila and Asha, 2012). In the EIA process, IDPs are consulted, but the IDP and EIA largely remain separated (Gerber, 2009).

Components of a management plan

Heritage management and conservation plans are important in identifying important resources, understanding their value and significance, as well as provisioning for their protection, use and maintenance in the future.

Heritage resource plans are composed of various sections (Cleere, 2010; Aplin, 2002). One of which is that of describing why a plan is needed. This outlines the purpose of the conservation plan to be developed. Maintenance, new site conservation and new management strategies are examples of purposes of management plans (Cleere, 2010). This is followed by stakeholder identification (Cleere, 2010). These are individuals or groups who participate in resource use, protection, or those who would be affected by any plans to be implemented. Understanding the site and its importance is also a part of a management plan. This includes understanding the site value and significance, as well as the current state of the site or resource to address current gaps (Cleere, 2010; Aplin, 2002).

From all the information gathered above, aims and objectives are then set, and actions taken for the implementation of the plan. As a final step, monitoring and evaluation takes place to allow for a review of original plans (Buckley *et al*., 2008).Under the SAHRA management plan guidelines, a similar statement of significance is required identifying the value associated with the resources in question. This is coupled to a description of the site, the site history, stakeholders identified. Any legal framework applicable must also be included. Uses of the site must also be identified and the condition of the resource mentioned. Components such as the “objectives”, “education and research” components and “site conservation” for the heritage site or resources are then considered (South African Heritage Resources Agency, n.d.). This is followed by delegations of responsibilities to relevant committees and management bodies. Monitoring and evaluation is another important component required under the SAHRA guidelines. The documentation of the monitoring process is also essential.

Tourism is an important consideration in heritage resource management plans. Heritage resources play an important role in the tourism activities in different areas (Timothy and Boyd, 2006). Tourism has to be managed effectively to ensure sustainable tourism in the town in which heritage resources exist (Landorf, 2009). Management of heritage for tourism

has been found to support the commercialization of heritage resources for capital (Kirshenblatt-Gimblett, 2004). Management plans are important to monitoring this process.

Various conflicts that have been found to exist in the links between heritage and tourism, including those arguing that values associated with heritage resources are jeopardized by the prioritisation of profits associated with tourism (Nocca, 2017). The converse is also argued, where the link between heritage conservation and heritage tourism is positively perceived to present various benefits beyond monetary value, including the improvement of social aspects such as social cohesion in communities (McKercher *et al*., 2005; (Dümcke and Gnedovsky, 2013). In a study by Hribar *et al*. (2015), sustainable management of heritage resources was found to lead to "conservation and community development." This was linked to the direct participation of locals in the care for heritage resources, allowing for the continued derivation of benefits offered by these resources.

Achieving sustainable development through heritage resource management requires consideration of the pillars of sustainability: economic- in the way of generating economic value from activities such as tourism, the social pillar- through preservation of heritage resources important for community identity and livelihoods, and the environmental pillar- where conservation of natural heritage landscapes and sites is required to conserve ecological and biological processes (Nocca, 2017). Sustainability in heritage management allows for continued conservation of heritage resources and preservation of the value of resources (Girard and Nijkamp, 2009). This sustainability is facilitated by the development of heritage resource conservation and management plans.

Wall (2009) recognises that compromises are often necessary in the consideration of the pillars, with some often more highly prioritised over others. An example of this is seen in a study by Darlow *et al*. (2012) titled "sustainable heritage management practices at visited heritage sites in Devon and Cornwall," where sociocultural values of resources were prioritised by respondents over any other values in replies to a questionnaires issued. This perception of some pillars as more important than others has implications for management actions implemented (Hughes & Carlsen, 2010).

Challenges to the management of heritage resources

Heritage management in Africa has been criticised for the lack of recognition of the actual need to conserve heritage resources, and rather a prioritization of resources mainly for

tourism and other revenue driven economic activities such as mining (Chirikure, 2013). This has been linked to third world issues prevalent in Africa such as hunger, disease and unemployment which often consume strained financial resources, rendering heritage protection at a lower level of priority in many countries (Chirikure, 2013). Criticism of heritage legislation and management organisations has also taken place, including criticism of the South African Heritage Resource Agency, implicated in providing more for the protection of national rather than local heritage resources (Chirikure, 2013). Protected national resources include those listed under national protection standards by virtue of listing under the UNESCO World Heritage Sites (Chirikure, 2013).

In addition, challenges with human capital have been noted in heritage resource management and conservation (Transboundary Africa, 2012). Understaffing and a lack of knowledge and qualifications have been implicated as problems, hindering the effectiveness of heritage resource management in Africa (Transboundary Africa, 2012).

The role of human capital in heritage resource management has also been assessed (Darlow *et al*. 2012), revealing that although volunteers were present and active in heritage management projects, time allocated was often limited, due to other work responsibilities of volunteers. This points to the lack of financial capital in obtaining and sustaining human capital generally associated with heritage management activities at heritage sites. Other low cost sustainable practices associated with heritage management are often favourable but not always viable (Darlow *et al*., 2012).

A lack of knowledge and expertise within heritage conservation organisations and amongst organization staff members has also been identified as a problem, with studies showing volunteers usually do not have heritage related qualifications (Rhoden *et al*., 2009; Darlow *et al*., 2012).

Another issue mentioned by literature is that of the adoption of the Environmental Impact Assessment process (Chirikure, 2013). Although a positive requirement by legislation to conduct impact assessments exists, South Africa is one of only three countries (alongside Namibia and Botswana) in sub-Saharan Africa requiring these impact assessments. This is of great concern considering the protection of heritage resources facilitated by these processes, through preventing potential damage by proposed project developments (Arazi, 2009; Ndlovu 2011). Spennemann and Graham (2007) also recognise the need for the provision of plans for protection and rehabilitation of heritage resources should natural disasters occur in areas

where sites of importance can be found. These include flood, fires and windstorms, phenomena set to become more common in the future of South Africa and the world, with changing climate (Spennemann and Graham, 2007; Hall *et al*., 2016).

In a publication titled "Some of the challenges of heritage management in South Africa", restrictions on heritage management to urban areas, with a lesser focus on management of resources in townships and rural localities are mentioned (Ndlovu, 2013). Under-enforcement of legislation in the latter areas is pinpointed, and undoubtedly requires more attention. Another challenge mentioned is that of management approaches geared more towards support of physical aspects of heritage over "living heritage" that is often more intangible and associated with practice (e.g. spiritual practice) (Ndlovu, 2013).

Chapter 3: Methodology

Study site

The study took place in the town of Wakkerstroom, a small town in the Mpumalanga Province bordering the province of KwaZulu Natal, South Africa (Figure 1).

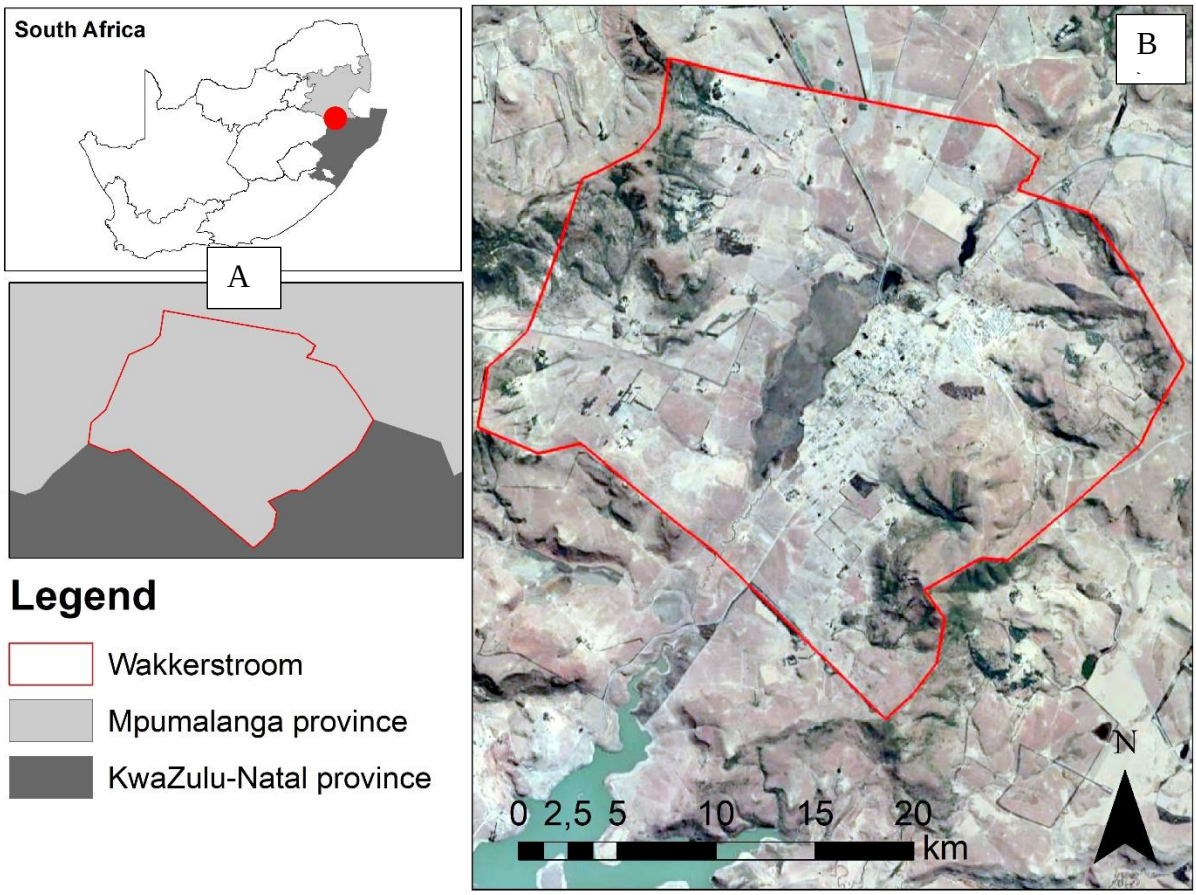


Figure 1: The location of the town of Wakkerstroom in the Province of Mpumalanga, South Africa. A) Shows the location of Wakkerstroom (red) at the border of Mpumalanga and KwaZulu Natal Provinces in South Africa. B) is an aerial photograph of the town (Image source: Google Earth).

Wakkerstroom was established in 1859 (Theal, 2010), has an area of 87.68km^2 and a population of 6852 people, an increase from 5653 in 2001 (Dr. Pixley Ka Isaka Seme IDP, 2011). The 2017-2022 IDP reports a decrease in the number of households from 1593 in 2011 to 1569 in 2017. The size of Wakkerstroom can be attributed to, amongst other factors, the original township, movement of people from the city to the Wakkerstroom town for retirement purposes and those attracted through birding and leisure tourism to the town. Maize farming is the main activity in the area, with some livestock farming also taking place. The town is one of the oldest towns in the region of the former Transvaal, and is subsequently rich in heritage, both natural and cultural, with a diverse representation of both heritage types.

Wakkerstroom consists of features such as river and water systems, birding sites and grassland landscapes which form part of the natural heritage in the area. The Wakkerstroom wetland is an important natural heritage resource, classified as an informally protected area, and an important birding area by BirdLife International (Khan, 2010). Rare bird species have been sighted in this area which plays an important role in attracting and maintaining the bird diversity in the area, and through organisations such as Birdlife and the WNHA, subsequently tourism activity in the town. The wetland measures about 1000ha (Begg, 1989) and is fed by the Uthaka (Wakkerstroom) river. In addition to birding, tourism and other ecosystem services, the wetland is important because of its function in water purification and as grazing land for cattle.

Various historical buildings are also located in the town, including the old courthouse and various churches. Wakkerstroom is the founding place of the Zionism faith with other churches such as the Nederduitse Gereformeerde (NG) church, the Anglican, and Catholic churches playing an important role in the community, and contributing to defining the heritage of the town.

Wakkerstroom is inhabited by people of diverse heritages, including the Ndebele, Zulu and Afrikaner people, making it an apt site for heritage perception exploration. The town consists of "Township" and "Town" area. The Township area, known as Esizameleni, consists of 1642 households (Dr. Pixley Ka Isaka Seme IDP, 2011) and is characterised by underdevelopment and racial segregation as a consequence of the apartheid regime. This is coupled to social demographics associated with townships including unemployment, low education levels and low access to adequate sanitation (Jürgens *et al*., 2013; Kalichman and Simbayi, 2003; Wood *et al*., 2010; Salo, 2003). The Town area conversely displays a higher level of development, with a large number of white inhabitants. Although data on the economic status and age structure of inhabitants of the town of Wakkerstroom alone was not found, data of the Dr. Pixley Ka Isaka Seme Municipality, to which Wakkerstroom belongs, reported a 33.7% unemployment rate in 2015. In 2016, 62% of the Municipality's population was under the age of 30 years, 22% between the ages 30 to 49 years and 16% ages 50 years and older.

The town of Wakkerstroom falls under the Dr. Pixley Ka Isaka Seme local Municipality, along with the towns of Perdedorp, Volksrust and the city of Amersfoort. This Municipality falls under the Gert Sibande District Municipality.

Methods and analyses

Objective 1: To identify natural and cultural heritage resources in the Wakkerstroom area

In order to identify heritage resources in the town of Wakkerstroom, a desktop study was initially conducted. Sources such as the Wakkerstroom official website (http://www.wakkerstroom.co.za/) and South African History Online (https://www.sahistory.org.za/) were used to obtain baseline information about cultural and natural heritage resources in the town. The SAHRA resources register (https://sahris.sahra.org.za/declaredsites) was also consulted for a list of declared sites. Websites provided an easily accessible initial source of information for resource identification. Publications from the town including "Wakkerstroom: Jewel of Mpumalanga" (Hofmeyr *et al*., 2009) as well as the "Wakkerstroom bird and nature guide" (Tarboton, 2004) were subsequently used to identify sites of heritage importance. Wakkerstroom: Jewel of Mpumalanga" (Hofmeyr *et al*., 2009) was used as a main source as literature searches revealed limited or no information in some instances, which was found to be available in Hofmeyer *et al.* (2009). Information relating to the location, history and the known uses of the resources was gathered in order to understand the relevance of the heritage resources and aspects identified. A publication titled "Wakkerstroom: a conservation study" was also consulted for information on the architecture in the town (Peters, 1995). Interviews with respondents in Objective 3 were also considered as resource identification sources.

Objective 2: To create a stakeholder map of the stakeholders associated with natural and cultural heritage resources in the Wakkerstroom area

In order to construct a stakeholder map, baseline identification of stakeholders took place. This was done through identifying users of the resources in communities who would be affected by, or be involved in, changes to the condition of the resources, as well as any management practices implemented. Managers responsible for protection and monitoring of heritage resources were also identified through identifying the various organisations tasked with the management of resources in the town of Wakkerstroom, and subsequently selecting the managers of these organisations. The identified stakeholders were then grouped according to categories that would represent the structure of the community of Wakkerstroom, and ensure that stakeholder groups are adequately represented where resource conservation is concerned according to best practice of stakeholder engagement suggested by Hare and Pahl-Wostl (2002). A stakeholder map was chosen as a tool to identify and illustrate stakeholders and the strength of stakeholder linkages in relation to the main management body, being the

Dr. Pixley Ka Isaka Seme Municipality. This was also done to enable assessment of their role in resource protection, influence in resource conservation and resource conservation plan execution (Varvasovszky and Brugha, 2000).

The stakeholder groups identified from this objective influenced the respondents chosen for the assessment of heritage resource perspectives in Objective 3 below.

Objective 3: To assess perceptions of stakeholders in the area towards natural and cultural heritage resources

To assess perceptions of stakeholders towards natural and cultural heritage resources, semi-structured interviews were conducted. From the results of Objective 2, Town and Township stakeholder groups were established, and interviews conducted according to these groupings, with residents of the Town and Township areas making up the respondents chosen. Semi-structured interviews were used for the benefit of open and closed ended questions to access a wide array of data from interviewees.

Two visits to the town of Wakkerstroom took place in May and August 2019. In the Town area, and relating to interviews with managers, available respondents were contacted for an appointment during which interviews took place. This was because contact details were available to allow this kind of communication. In the case of Township respondents, respondents were approached in households or in close proximity to the Township. In both areas, the snowball sampling technique was used where initial respondents were identified, and these respondents then suggested other respondents that could be interviewed for the study (Sadler, *et* al., 2010). In the Town area, a total of 15 people were interviewed, while 27 people were interviewed from the Township area of Wakkerstroom. The sample sizes used were used because, although small, perspectives recorded had reached saturation, where adding more participants would and did not greatly alter the perspectives reported on heritage in both areas. The Municipality were also contacted for interviews as it was important that they be interviewed, but did not respond.

Two sets of interview questions were used. The first being for interviews with community members including business owners, residents from the Town and Esizameleni areas of Wakkerstroom (Appendix 1). These questions related to demographic information, the understanding of heritage and heritage value definition of the respondent, identification of resources valued by the respondent, and the reason for the perceived importance. Use of the resources and participation in heritage activities were also investigated, as well as the

contribution to the protection of these resources. Sources of information regarding resources of aspects of heritage, and threats perceived to resources were also addressed by the interview questions.

The second set of interview questions were addressed to caretakers and managers of organisations tasked with the preservation of heritage resources in the town. These included Birdlife South Africa, members of the Working for Fire organisation, members of the Wakkerstroom Natural Heritage Association (WNHA) and the municipality (Appendix 2). Similar to the first set of interview questions (Appendix 1), questions related to interactions with heritage resources, the definition of value, the identification of key areas of concerns, and issues encountered by management in heritage resource conservation in the town of Wakkerstroom, and future plans for heritage resource management.

Questions in the second set of interview questions were aimed towards assessing the current state of management in these organisations, in order to make better informed suggestions for future management plans. Responses to both interview sets were hand written and recorded using an audio recorder with the permission of respondents. Ethical clearance was first obtained for the study and the conditions stipulated herein adhered to (Appendix 3). Consent forms were also provided for manager (Appendix 4) and general stakeholder (Appendix 5) respondents.

In order to analyse the interview data, responses from the Town and Township groups of stakeholders were transcribed into two separate Microsoft Excel spreadsheets. Responses were entered according to corresponding question numbers of the interview instrument (Appendix 1). Where applicable, (i.e. outside of age and time in Wakkerstroom), categories were developed according to the responses given, with similar responses (i.e. responses with similar themes or answers) falling under the same category. Responses were then coded. Responses falling under each category received the same code. Where demographic data were concerned (age, level of education and time that respondent has lived in Wakkerstroom), graphs of average age of respondents, percentage of responses corresponding to categories of education levels and average time respondents have lived in Wakkerstroom were produced. Occupation was not analysed as it was not relevant to the objectives of the study considering the high unemployment levels in the area, with very few working in the formal sector and many more in the informal sector.

In the remaining questions, the proportions of responses corresponding to the categories developed were calculated in the form of percentages. These absolute values were then used to produce bar graphs. Percentages were used to show the categories of responses receiving the highest responses, and subsequently the most held view or most agreeable category of perceptions.

Bar graphs were produced for each question, in each area (Town or Township) and presented side by side for comparison. No statistical tests were performed on these data as sample sizes were too small and did not fit statistical test conditions.

Objective 4: To use the perceptions of stakeholders, and stakeholder interactions to make suggestions for the development of management plans for heritage resources in Wakkerstroom.

The information gathered regarding the heritage resources found in Wakkerstroom (Objective 1), their state and protection, the stakeholders and stakeholder relations identified (Objective 2), and the perceptions towards heritage (Objective 3) were then used together with literature sources to develop suggestions towards management plans for cultural and natural heritage resources in the town of Wakkerstroom. The information from interviews with managers was also used in this section to establish the present state of management, and make suggestions for future management in organisations. Suggestions were targeted towards the municipality of Dr. Pixley Ka Isaka Seme, the WNHA and other community based resource management organisations falling under this organisation. Suggestions for combined efforts for resource protection were also made.

Chapter 4: Results

The data and information collected have been linked to the various objectives of this study. The results of each objective are presented and discussed below.

Objective 1: To identify the natural and cultural heritage resources in the Wakkerstroom area

Conservation of heritage resources in Wakkerstroom

Conservation of heritage resources in Wakkerstroom is carried out mainly under the WNHA, an Non-Governmental Organisation (NGO) in Town. The organisation began with the intention to protect and manage natural heritage resources such as the wetland (vlei), to prevent the resource from further degradation. Degradation in the vlei was initially attributed to overstocking of cattle for grazing. Activities to prevent cattle grazing included the installation of fences to prevent cattle entry into parts of the vlei. The WHNA also intended to control purposeful burning of the vlei. A wetland management committee was then set up, made up of the WNHA, the Mpumalanga Tourism and Parks Agency, Birdlife SA, The Wakkerstroom Tourism Association, the Endangered Wildlife trust, the Enkangala Grasslands project and various government departments including the then Department of Environmental Affairs and Tourism (Hofmeyer *et al*., 2009).

Although natural heritage was the focus of the organisation when it was founded, a desire to increase the consideration and protection of cultural heritage resources in the town has been expressed. There is currently no authority taking care of cultural heritage.

Natural heritage in Wakkerstroom

The Wakkerstroom wetland

The Wakkerstroom wetland (Figure 2) is one of the most notable natural heritage resources mentioned in the literature on Wakkerstroom. This area has been declared a protected wetland reserve and is located at the upper end of the Tugela catchment. Water from the Wakkerstroom River, also known as the Uthaka River feeds into the wetland (Joubert and Ellery, 2013). The vlei measures about 1000ha in size (Begg, 1989). Vegetation in the wetland is made up of marshes and grasslands with plants such as *Typha capensis,* and

grassland consisting predominantly of *Phragmites australis (Cav.) Trin. Ex Steud.* (Joubert and Ellery, 2013).

Wetlands are an important part of landscapes, especially where ecosystem services are concerned (De Groot, *et al*., 2012; McInnes, 2013). The Wakkerstroom wetland plays an important role in regulation through water purification. This is achieved through processes of denitrification whereby plants, aerobic and anaerobic soils in the wetland remove nutrients from the water passing through the feature, resulting in water of an improved quality leaving the wetland (Maltby and Acreman, 2011).

Wetlands also feed ground water reserves through the recharge of underlying ground layers in the wetland. The benefit of wetlands in flood control has also been recognized. Through storage of flood water, the wetland aids in reducing downstream flow of water, subsequently reducing flood risk (Maltby and Acreman, 2011). Carbon sequestration by wetlands is also a valued ecosystem service (Villa and Mitsch, 2015). Wetlands can also be considered a part of the cultural heritage of areas (Reid *et al*., 2005). Cultural services cited to be derived from wetlands include the benefit of landscape aesthetics and use in ecological education (Reid *et al*., 2005).

In addition to the ecosystem services mentioned, wetlands also create a habitat for animals such as birds - a function particularly valued and relevant in Wakkerstroom (Reid *et al*., 2005; Khan, 2010; Oellermann *et al*, 1994). It is the diverse habitat created by the presence of a mosaic of diverse vegetation types in the wetland that results in the presence of various fauna and flora communities including invertebrates and birds in the area (Zhang *et al*., 2011). The wetland attracts multiple bird species from around the world, including migratory birds from countries such as Europe (Joubert and Ellery, 2013). Rare birds such as the White-winged Flufftail have been sighted in this area of Wakkerstroom (Tarboton, 2004). This birding feature contributes largely to the tourism component of the town (Joubert and Ellery, 2013).The Wakkerstroom vlei is also used as a grazing site by local farmers (Kotze, 2013). Harvesting of plants for medicinal purposes (unidentified bulbs) as well as water provision are also valued services provided by the vlei.

The wetland, like all water sources is sensitive to pollution. Pollution has been mentioned as a source of concern where rivers and parts of the vlei are becoming polluted due to dumping into the water source. Sewage leakages and malfunctioning sewage systems in the

Esizameleni Township have been mentioned by the WNHA as causes for pollution of the wetland. This poses a threat to the health of the wetland system.

Burning is common and beneficial in wetlands, resulting in the growth of new grazing vegetation for cattle and often assisting in the control of alien plants in the area. In addition, burning in useful for the reinvigoration of native vegetation in wetlands (Kotze, 2010). The burning activities in the Wakkerstroom wetland is monitored by the Working on Fire organization in the town.



Figure 2: Images of the Wakkerstroom vlei (wetland) in Wakkerstroom, Mpumalanga. Source: https://www.tripadvisor.co.za/Attraction_Review-g1549643-d12936908-Reviews-Wakkerstroom_Wetland_Reserve-Wakkerstroom_Mpumalanga.html

Cultural heritage in Wakkerstroom

The Voortrekker hill (Ossewakop)

Ossewakop is located to the south of Wakkerstroom and reaches altitudes of 2069 meters. On this structure, old British forts are located, previously erected during the Anglo-Boer war. Ossewakop is recognised through the ox wagon illustrated on the hill, accompanied by the dates "1838-1938", during which the Great Trek took place (Figure 3). The "Great Trek" describes the event in South African history where Dutch colonists moved to the inner regions of the country from towns such as Graaf-Reinet and Grahamstown in the Eastern Cape. This was in order to gain independence from the British (South African History Online, 2019; Reader's Digest, 1988). The travellers, named the "Voortrekkers," were made up mainly of nomadic farmers (Sahistory.org.za, 2019). Located further down from the illustration is the Staffordshire Knot, a symbol of the Scottish regiment (Peters, 1995). The

marking of the hill was made using white stones, placed by members of the town to commemorate the centenary of the historical event of the Great Trek. The signage is maintained by the community, with community members responsible for repainting the white stones used.



Figure 3: Ossewakop (left) before placement of the Stafforshire Knot beneath the ox wagon, and the plaque accompanying illustrations located on the mountains (right). Image source (left): *http://www.wakkerstroom.co.za/painting-of-the-wagon/ossewakop/*. Image source (right): *http://www.wakkerstroom.co.za/ossewakop-scotch-hill/*.

Hiking trails

Hiking trails are present in the mountains of Wakkerstroom such as Ossewakop. Hikes are organized by the Wakkerstroom Tourism Association and the Wakkerstroom Walks and Trails organisations in the town. These regions are utilized by residents and visitors for recreational purposes. Much like the Wakkerstroom wetland, hiking trails serve as a tourism attraction for the town. In addition, mountain areas of Wakkerstroom including Ossewakop were previously used for paragliding activities. The hiking trails established served as a means for access for users of the area (Hofmeyer *et al*., 2009).

The Paul Kruger Bridge

The Paul Kruger Bridge is said to be one of the last bridges built before the introduction of concrete bridges in South Africa, and is considered a place of great historical significance (Hofmeyer *et al*., 2009) (Figure 4). The bridge, located on the road to Amersfoort over the Wakkerstroom River, was established in 1902, with construction beginning in 1892. Initial construction was with the intention of providing an alternative road to Volksrust when

Amersfoort and Piet Retief roads were often flooded. The bridge is a steel structure spanning 12.2 meters in length with material imported from Europe (Peters, 2001). This bridge was named after the then president Paul Kruger who also used the bridge for travel to Pretoria. The Paul Kruger Bridge is a national monument, referred to as "The Old Road Bridge" Marthinus Wesselstroom, under the SAHRA monuments register.

The bridge also holds historical value for the Zionist church, located in close proximity to the baptismal pools of the first black Zionists. Wakkerstroom became home to the second black assemblage of the Dutch Reformed Church in the Old Transvaal under the leadership of Pieter L le Roux, (Sundkler 1976; Nel, 2005). It was Pieter L le Roux who learned the Zulu language in order to promote the teachings and formation of the Zionist church amongst predominantly Zulu and Swati black people of the Wakkerstroom area at the time (Nel, 2005). Daniel Bryant, a missionary from an apocalyptic church in the United States (The Christian Catholic Apostolic Church in Zion), together with Pieter L le Roux carried out this baptism in the Wakkerstroom River for which the bridge is now valued (Nel, 2005). In May of 1904, Bryant and Le Roux directed masses of black Zionists in their hundreds through the streets of Wakkerstroom to the river where 141 people were baptised. This was named "the first Zion baptism for Africans in South Africa" (Sundkler, 1976).

The bridge is archived under national monument status (Site reference: 9/2/279/0006) and declared as a Provincial heritage Site under SAHRA, listed under Grade II heritage protection (Resources significant within the context of a province – administered by the relevant Provincial Heritage Authority (PHRA)) (https://sahris.sahra.org.za/declaredsites).



Figure 4: The Paul Kruger Bridge in Wakkerstroom, Mpumalanga. This was the site of the first baptism of black Zionists in the town of Wakkestroom. Image source (left): *http://www.wakkerstroom.co.za/paul-kruger-bridge/*. Image source (right): *https://celebratesouthernafrica.com/a-walk-through-history-in-wakkerstroom/* .

The Old Court House (Old Magistrates Office, Engelbrecht Street, Wakkerstroom)

The Court House dates back to 1897 (Figure 5). This building is another one of Wakkerstroom's important buildings, archived much like the Paul Kruger Bridge under national monument status. The building is also declared under Grade II provincial heritage protection, as a Provincial heritage site (site reference 9/2/279/0002) (https://sahris.sahra.org.za/declaredsites).

The sandstone building still contains various pieces of original furniture including the magistrate's bench and witness stands, as well as an original corrugated iron roof (Hofmeyer *et al*., 2009). The docks and witness stand have been preserved to maintain originality (Hofmeyer *et al*., 2009). The court house is still utilized for court proceedings today, with a magistrate's office in which a magistrate sits when trails are held in Wakkerstroom. The building has largely been preserved, in a way that allows retention of the National monument status.



Figure 5: The magistrate court house, a national monument in Wakkerstroom. Much of the original appearance of the courthouse remains intact, as well as features inside the courthouse. Image source: *http://www.wakkerstroom.co.za/historical-monuments/wakkerstroom-court-house/*.

St Mark's Anglican Church

St Mark's Anglican Church, also known as the Old Apostolic Church of Africa, dates back to the 1870s (Figure 6). The building, gazetted in 1982 is the third building in Wakkerstroom archived under national monument status and currently declared as a Grade II, Provincial

Heritage Site (Site reference: 9/2/279/0006-001). The building was erected following the Anglo-Boer war, serving as a residence for an officer who led the British army (South African Heritage Resources Information Systems, n.d). The church is located on Erf 82 Kerk Street where local Anglicans still hold church services.

Unique to this building and a few others in Wakkerstroom is the use of laterite and sandstone building materials in the construction of the church (Hofmeyer *et al*., 2009). St Mark's church was fitted with a stained window in 1959, and is well maintained by the owners of the Erf and the Parishioners, preserving the building's originality.



Figure 6: St. Mark's church, Wakkerstroom. A National Monument and Provincial Heritage Site. A stained glass window (left) and the appearance of the church from the outside (right) are shown. Source of images: *http://www.wakkerstroom.co.za/anglican-st-marks/* .

Nederduitse Gereformeerde Kerk (NG Kerk)

The NG Kerk is one of the most noticeable buildings in town (Figure 7). This church was formally known as the Dutch reformed church, and had its cornerstone laid in 1890 by General Piet Joubert. This church is located on Church Square in Wakkerstroom, with services still held in the building today (Hofmeyer *et al*., 2009).

The church congregation was originally known as the Nederduits Herformte Kerk, which later became the Nederduitse Gereformeerde Kerk in 1866. The area on which the church is located was initially used as a British Fort during the First Boer War (1880/1881).

Inside the church grounds are monuments of those who served in the Wakkerstroom Commando and died in the Anglo Boer War (http://www.wakkerstroom.co.za/n-g-kerk/). The grave of a former minister of the church Ds Ackerman and his wife are also located in close proximity to the church.

The church organ has been mentioned as a historical object of interest. The organ operates on pneumatic action (by air pressure). This distinguishes the organ from later models which require electricity to operate (http://www.wakkerstroom.co.za/n-g-kerk/).

Although a valued addition to the aesthetic of the town, the church has, since 1944 undergone significant alteration to components such as the spire and the bell tower, changing the architecture and original form of the building (Hofmeyer *et al.*, 2009). Much of the unique wood finishing associated with the church has also been lost through alterations, with only the original baptismal font in the front of the church remaining today (Hofmeyer *et al.*, 2009). The Church is still used for weekly services and it is maintained by mostly the local farmers in the district and congregants.





Figure 7: The NG Kerk in Wakkerstroom dating back to 1890, located on Church Street in the town. Image source (left): *http://www.theheritageportal.co.za/notice/wakkerstroom-turns-160-2019* . Image source (right): *https://www.gemeentegeskiedenis.co.za/ng-gemeente-wakkerstroom/* .

The Roman Catholic Church (St Joseph's Church)

The Roman Catholic Church is another important building in the religious history and heritage of Wakkerstroom (Hofmeyer *et al.*, 2009) (Figure 8). The cornerstone of the church was laid by Dirk Cornelius Uys in 1904. Before the church became a Hervormde Church in 1942, it was an Apostolic Church. The church has been owned by the Catholic Diocese of Dundee since 1989. St Joseph's church is characterized by white-washed plaster walls, windows that have a shape described as "gothic arch" and a corrugated iron roof. A full immersion baptismal pool can be found in the church, located under a floor of Oregon pine (Scholes, 2017). A stained glass window depicting the landscape and biodiversity of Wakkerstroom can be found in the front of the church, painted by Elna Kotze before a local glass artist, Clare Honey converted the window to leaded glass. The building is well maintained by the Catholic Diocese of Dundee.



Figure 8: The Catholic Church of Wakkerstroom located on Badenhorst Street, Wakkerstroom. The appearance of the church from the outside (left) and the stained glass window found inside the church (right). Image source (left): *http://www.wakkerstroom.co.za/catholic-st-josephs/* . Image source (right): *http://www.mathiam.co.za/stainedglass.htm* .

The Old Bank building

The Old Bank Building was erected as the first building of the First National Bank for the National Bank of South Africa in 1920 (Figure 9). This bank acted as the only bank in the area and operated until its closure in 2010 (Hofmeyer *et al*., 2009). It has now been converted into a museum-like environment by one of the Wakkerstroom residents, and is known as the Bank Gallery. The Bank Gallery houses historically valued objects including old books and memorabilia from English-British times, including cutlery and dinner sets.



Figure 9: The old bank building on Kerk Street in Wakkerstroom. This building was the first building of the First National Bank for the National Bank of South Africa in 1920 and now serves as a museum-like environment. Image Source: *http://www.wakkerstroom.co.za/grosvenor-gallery/.*

The Wakkerstroom Cemetery

A memorial and 18 crosses can be found in the cemetery representing British soldiers who died during the First Boer war over the 1880-1881 period (*https://ruralexploration.co.za/Wakkerstroom.html)* (Figure 10). A memorial has also been erected to commemorate soldiers of the Anglo Boer War. The names of British soldiers from places such as Wakkerstroom and Piet Retief can be found on the monument.



Figure 10: Special features in the Wakkerstroom cemetery commemorating soldiers. The 18 crosses in remembrance of the soldiers that died in the First Boer War are shown on the left. Names of soldiers that died in the Anglo Boer War are shown on the monument on the right. Source: *https://ruralexploration.co.za/Wakkerstroom.html* .

San paintings

The San people were the first people to settle in the area of Wakkerstroom. Rock art paintings left by the San can be found in the surrounding hills. From interviews with residents, there is knowledge of these paintings. Guided tours to the area where paintings can be found are available.

The Wakkerstroom music festival

The Wakkerstroom music festival is a cultural heritage event held by the town, designed to bring musical artists of varying levels (professionals and emerging artists) together to showcase and participate in musical events (Figure 11). The classical music focused event has been run annually in the town, since 2009 (van der Merwe, 2019). Various genres are covered by the festival including Classical crossover, Opera, Orchestral and Classical Ballet music. The festival allows members of Esizameleni to showcase traditional dress, song and dance, valued cultural components amongst the people. The festival also gives opportunities to local secondary and tertiary institutions of learning to provide students with practical experience (van der Merwe, 2019). The festival resulted in the creation of a marimba band, which is made up of local youth and teachers and it performs regularly at local functions (van der Merwe, 2019).



Figure 11: Images taken at the Wakkerstroom music festival. Image source (left): *https://ridgetimes.co.za/83643/visit-wakkerstroom-where-music-comes-alive/* . Image source (right): *https://www.sa-venues.com/events/mpumalanga/wakkerstroom-music-festival/* . Images show a musical performance at the festival (left) and attendants of the Wakkerstroom festival (right).

The Wakkerstroom Arts and Crafts Ramble

This is another annual festival in the town of Wakkerstroom, taking place annually around June of each year for the past 6 years (Figure 12). Here, artists and crafts people from the town and elsewhere showcase their creations. Painting, glass art, wood work, beadwork and weaving, amongst other forms of art work, are presented. Artists also teach various techniques and offer training courses at amateur or advanced levels. This is another form of cultural heritage display, presenting itself in the form of a festival, celebrating creations linked to national symbols, traditions and other historically relevant subjects (**http://www.wakkerstroom.co.za/thde-annual-wakkerstroom-arts-craft-ramble/**). This event, much like the music festival bring in large numbers of tourists and increases the value of heritage through promotion of heritage and heritage exhibition in this way.



Figure 12: Arts and crafts from the Wakkerstroom Arts and Crafts Ramble (2017). Source of images: *http://www.wakkerstroom.co.za/thde-annual-wakkerstroom-arts-craft-ramble/* .

Cattle as a cultural symbol of people in Esizameleni

In many African cultures including the Zulu and Batswana cultures, cattle are a symbolic animal. Cattle represent wealth amongst people and the slaughtering of a cattle for ancestral purposes is also a common practice (Hovorka, 2012). In addition, cattle are also used as *lobola*, a ceremony associated with matrimony where cattle are exchanged from the groom's family to the bride's family as a way to connect family ancestors (Hofmeyer *et al.*, 2009).

Cattle are kept by many of the residents of Esizameleni for the symbolic value associated with these animals, some even for the subsistence and economic value associated with the sale of cattle in present day culture (Hofmeyer *et al.*, 2009; Hovorka, 2012). The cattle owned by residents of Esizameleni Township often graze in the vlei region of the town.

Objective 2: To create a stakeholder map of the various stakeholders associated with natural and cultural heritage resources in the Wakkerstroom area

Stakeholders

Stakeholders identified included the organisations tasked with the conservation and management of heritage resources in the town of Wakkerstroom. The WNHA together with Working on Fire and BirdLife SA are the main organisations tasked with resource conservation. These organisations focus mainly on the protection of natural heritage resources in the town, including bird and bird habitat conservation, wetland ecosystem protection and fire control in the wetland area. These organisations are subsequently part of the stakeholders of heritage resources identified (Figure 13).

Two main stakeholder groups were identified in Wakkerstroom according to the the two communities characterising and found in the town: the Esizameleni Township, and the Town areas of Wakkerstroom. Business people, residents and tourist stakeholder groups were distinguished in the Town area of Wakkerstroom due to the role they play as dominant stakeholder subgroups within the Town area. Tourists were also included because of the role tourism plays in motivating conservation of the town of Wakkerstroom. These stakeholder groups interact directly with resources, are involved in, impacted and affected by, resource management and conservation in the Town, and subsequently have resource management and conservation interests.

In the township area of Esizameleni, the low levels of tourism activity, business operations and interactions with resource conservation activities in Wakkerstroom resulted in no clear subgroups being identified. One group of stakeholders was therefore formed, labelled as "Residents". Establishing a "business people" subgroup similar to that of the Town area could not take place in the Township stakeholder group. This is because, although there are individuals that manage businesses such as spazas and shebeens in the Township, the ownership, longevity and location of these businesses changes frequently, making it difficult to identify actors as stakeholder subgroups. A "Residents" group was therefore perceived as a representative stakeholder grouping for the purpose of assessing conservation linkages, roles and influence in resource conservation and management.

The municipality of Dr. Pixley Ka Isaka Seme is included, as the main actor in management of resources in the town of Wakkerstroom, Mpumalanga. The muncipality, through its role as government, should serve as the main body to which all other stakeholders are directly or

indirectly linked. People employed by the municipality in the town of Wakkerstroom can, however, be described as relatively inactive, paying little attention to heritage resource conservation in the way of financing, and support of town conservation activities by organisations mentioned. This leaves the bulk of management to town NGO's such the WNHA and volunteer work by members of the Wakkerstroom community, despite the management responsibility of the municipality by virtue of it being elected.

Stakeholder linkages, their influence and involvement in the conservation of heritage resources

Although conservation decisions made regarding heritage resources affect all stakeholders identified, the involvement, influence and linkages of stakeholders, and subsequently their roles in resource preservation and management differ (Figure 13). The community of Town area of Wakkerstroom was shown to have a greater involvement in resource conservation and management actions taken, with the residents, those running businesses within the town and part-time residents playing the biggest role. This means that there is a greater influence by stakeholders in the Wakkerstroom Town area on resources than the community of the Esizameleni Township.

The Esizameleni Township community play a small role in conservation actions implemented by the town. This is reiterated by the low representation of this stakeholder group in the heritage conservation organisations of the town of Wakkerstroom. Stakeholders in the Esizameleni area were found to have little knowledge of resource conservation activities taking place in the town, and less so involvement in organisations and decisions made regarding resource conservation. This emphasises the weak connection to resource conservation efforts and resource management shown in Figure 13.

Connections between Esizameleni Township stakeholders and stakeholders of theTown area are also shown to be weak. With respect to conservation management, this is concluded on the basis of the lack of communication between the two stakeholder groups. Despite the close proximity of the Town area to management and associated activities, and the high influence exerted by this set of stakeholders, Township stakeholders remain poorly informed and uninvolved (Figure 13). This indicates a lack of communication and connection between Town and Township communities.

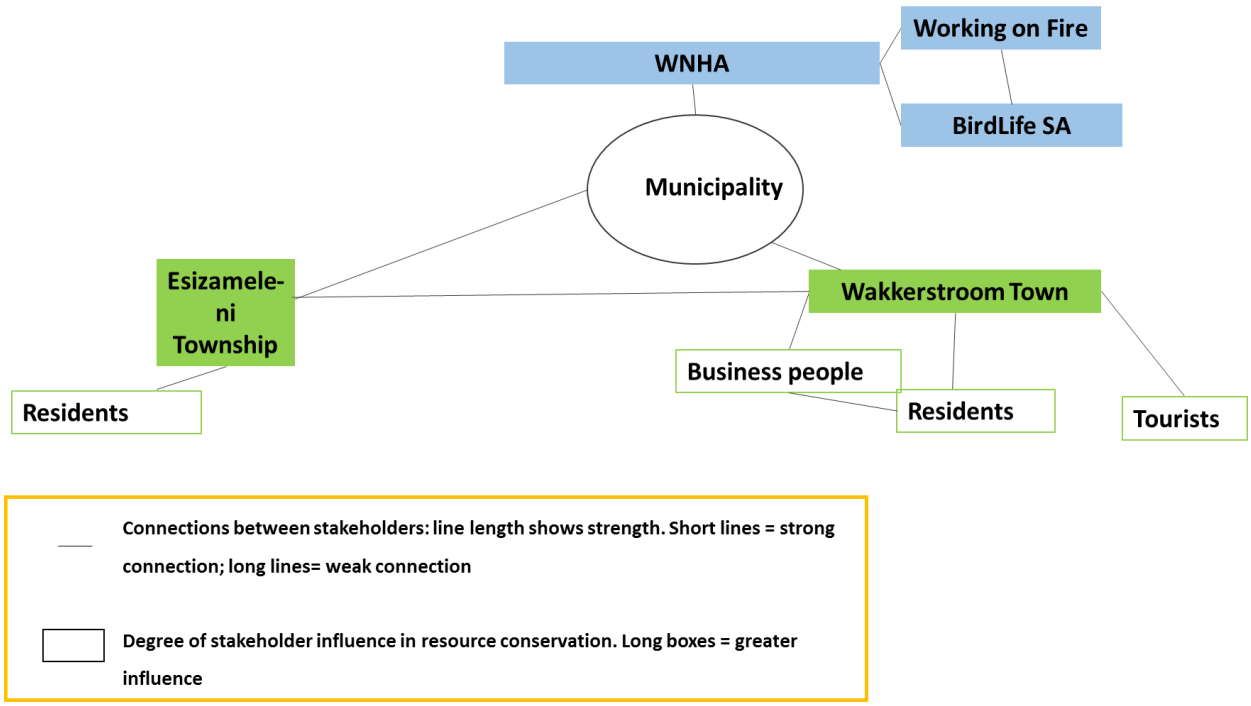


Figure 13: Stakeholder map showing stakeholders and the strength of connections between various stakeholders (line length: long lines indicate weak connection while short lines indicate strong connections). The influence in management actions associated with resource conservation is also shown through box length: long boxes indicate low influence and short boxes indicate low influence).

Objective 3: To assess perceptions of stakeholders in the area towards natural and cultural heritage resources

Demographics

Age of respondents

The age of respondents varied amongst respondents of the Town, versus the Esizameleni Township sample groups. Town respondents had a higher average age (65) amongst the respondents interviewed relative to respondents of the Esizameleni Township where the age was 42 (Figure 14). This suggests a higher proportion of elderly residents in the Town area, and a high proportion of youth in the Township area. Ages of respondents ranged from 22-72 years old in the Township, and 54-78 amongst respondents of the Town area.

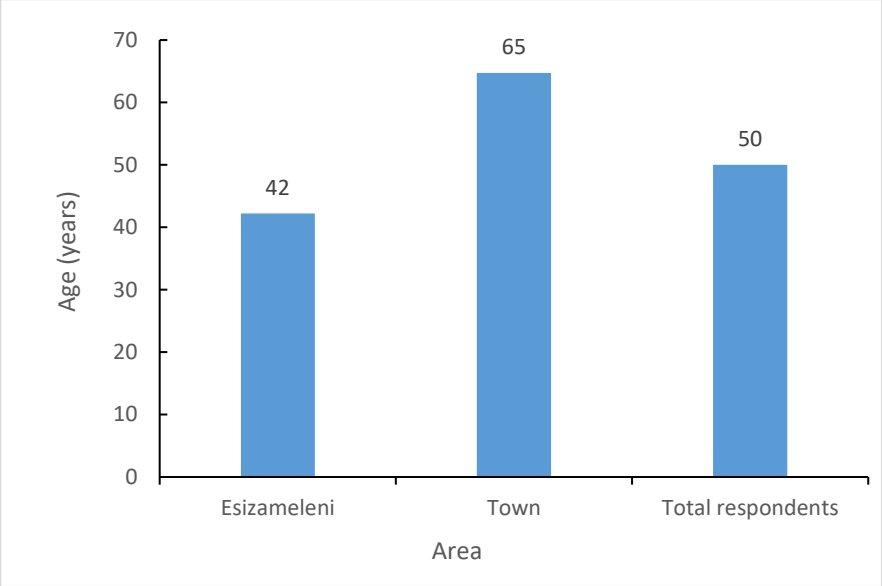


Figure 14: The average ages (years) of respondents in the Esizameleni Township (n=27) and Town (n=15) areas of Wakkerstroom, Mpumalanga to an interview on perceptions. The total ages of the respondents interviewed are also shown.

Educational levels of respondents

In terms of educational levels, the highest level of education amongst respondents of the Esizameleni Township was found to be a high school level of education (Figure 15a). A large proportion of respondents from this area (44%) had late high school education (Grade 10-12). This was followed by a proportion of 26% who reported early high school education (Grade 8-9) and an equal proportion of respondents who reported having reached late primary education (Grade 4-7), or having no education at all (15%) (Figure 15a).

This contrasts with the Town area where the highest level of education reported amongst respondents reached postgraduate degree levels (13%) (Figure 15b). A large majority of respondents had post-school, higher education qualifications such as diplomas (53%) (Figure 15b). Where the "Late high school" education category had the highest proportion of respondents in Township area, this category conversely had the lowest proportion of responses amongst Town respondents (33%).

In addition, all respondents interviewed in the Town area had some level of education (Figure 15b). This shows that the Township area has an overall lower level of education, and a low level of school completion relative to the Town area or its respondents.

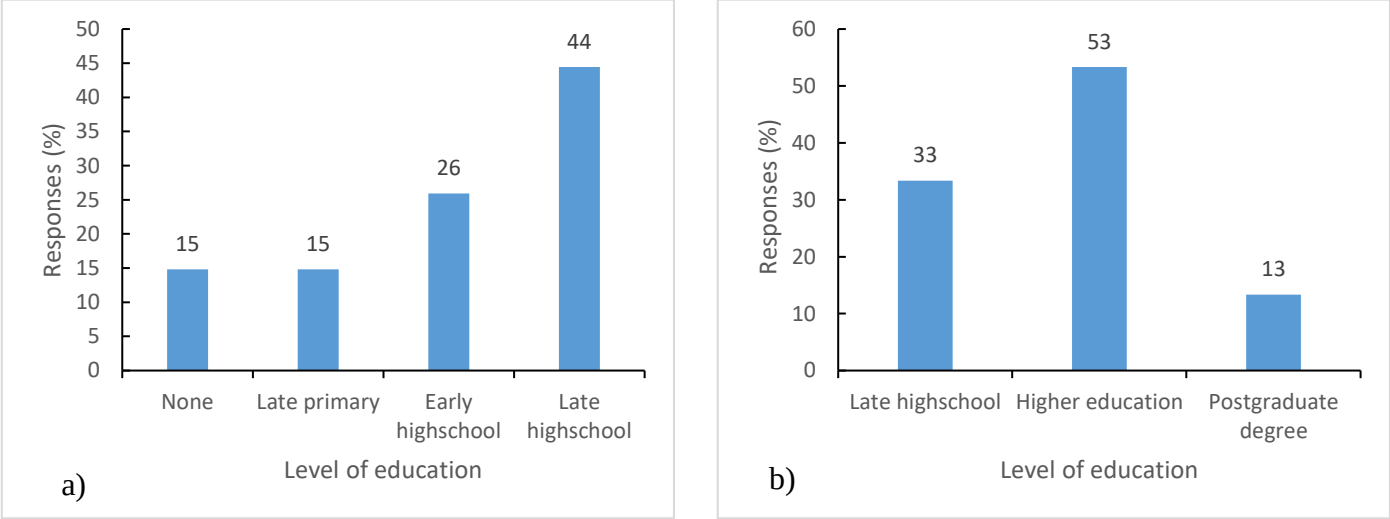


Figure 15: The highest levels of education reported by respondents in the Esizameleni (n=27) (a) and Town communities (n=15) (b) of the town of Wakkerstroom, Mpumalanga. Proportion of responses (%) (y-axis) against education level (x-axis) are illustrated in the graphs. "Late high school" (Grade 10-12), "Early high school" (Grade 8-9), "Late primary" (Grade 4-7), "Higher education" (Diplomas and post schooling courses) and "Postgraduate degrees" were educational categories used for respondents. A higher level of education is observed amongst respondents of the Town area, relative to those of the township area. Where no education was a category amongst people of the township area (a), all respondents of the Town area reported having some level of education (b).

Time living in Wakkerstroom

Township respondents were shown to have lived in Wakkerstroom for longer periods (28 years) than Town respondents (11 years) (Figure 16). This suggests that Township respondents interviewed may have originally come from Wakkerstroom, where Town respondents may have previously relocated to the town at a later stage.

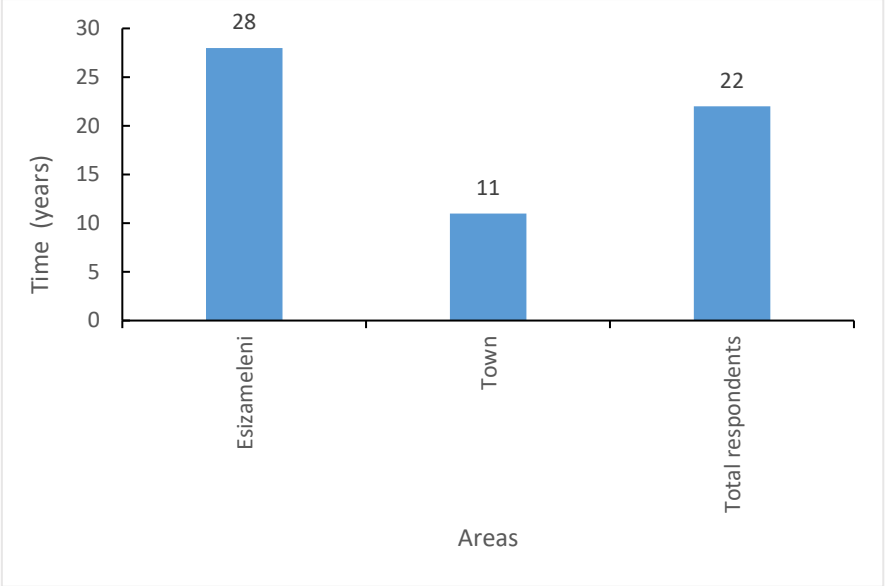


Figure 16: The average time (years) (y-axis) that respondents from Esizameleni (n=27) and the Town (n=15) areas have lived in Wakkerstroom. Respondents of the Township area are shown to have lived in Wakkerstroom for a longer time (28 years) than Town respondents (11 years).

Heritage definitions

In defining the value of heritage amongst respondents interviewed, five themes were identified amongst Esizameleni Township responses (Figure 17a). The understanding of heritage reported was linked mostly to the theme"identity" (59%) (Figure 16a). Respondents mentioned phrases such as "it is who I am" and "it defines where I come from" in addition to references to cultural and traditional identities, identifying according to specific language groups (Zulu, Swati and Ndebele). This was followed to a lesser extent by heritage definitions centered around "Inheritance" (15%) (Figure 17a). This again alluded to customs and traditional practices passed down from past to present generations, and to be passed to future generations. The category of "Values" (4%) denoted behaviors inherited from people in the past. "The environment" (11%) referred to elements such as water in the natural environment passed from the past to present generations.

Amongst Town respondents, four themes were identified (Figure 17b). The highest association of heritage was found to be with the theme of "Inheritance" (47%) and to a lesser degree, with "History" (27%) (Figure 17b). "Inheritance" denoted the passing down of tangible resources such as natural resources, farms or buildings from past generations to present ones. In terms of "History", responses alluded to historical events that may have taken place over time. This definition of history was shared by the respondents in the

Township area. In terms of "Preservation," (13%) responses were according to thoughts of conservation and protection of resources for future generations (figure 17b).

In addition to the differences in proportions of responses amongst the Town and Township groups, results also show how, even where similar themes for responses were identified amongst both respondent groups ("History", "Identity" and "Inheritance"), the definitions offered falling under these themes differed amongst the groups.

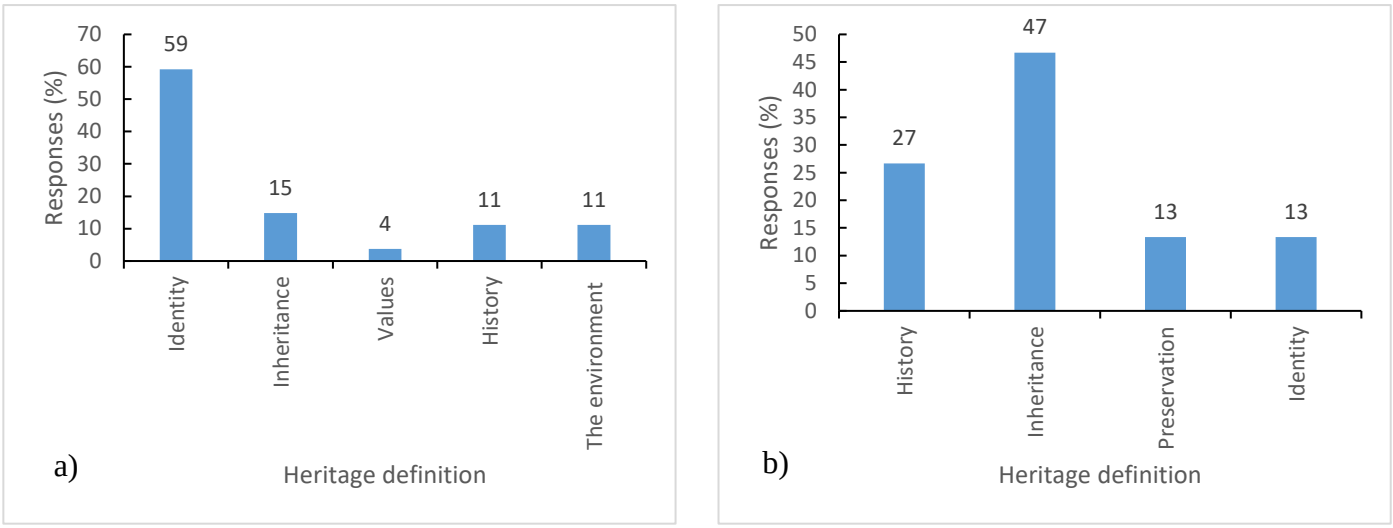


Figure 17: The heritage definitions provided for the term "heritage" by respondents in the Esizameleni Township (n=27) (a) and the Town area (n=15) (b) of Wakkerstroom. Proportions of responses (y-axis) amongst respondents are shown against the themes of heritage definitions provided (x-axis). Five themes ("Identity", "Inheritance", "Values", "History" and "the environment") were identified amongst Township responses. "History", "Inheritance", "Preservation" and "Identity" were identified as themes amongst Town respondents . Although common themes were identified amongst both groups, the definitions offered falling under these themes differed.

Heritage resource identification

In responses relating to the heritage resources appreciated most, Township respondents reported the highest appreciation, and subsequently participation in cultural heritage activities such as dressing in traditional clothing, song and dance in a personal capacity, at household level (37%) (Figure 18a). Respondents in this area also reported water as an important resource, with reports of direct water use from natural water sources such as a spring and rivers for livelihood sustenance (15%). A large proportion of respondents (22%) said they had no appreciation of, and do not interact with, any resources.

Categories of "Buildings", "Trees", "Cattle" and "Mountains" were also mentioned as resources appreciated, for benefits of livelihood amongst Township people (Figure 18a). No specific buildings were mentioned under the "Buildings" The category of "Ancestry" referred to sources of history appreciated because of their role in conferring identity through connection with ancestors.

Amongst Town respondents, the Wakkerstroom wetland was mentioned as an important resource, appreciated most by residents of this area (53%) (Figure 18b). Respondents reported visits to the wetland for birding activities and recreational walks. A relatively large proportion of respondents (13%) said that they did not appreciate any resources. Other resources were also mentioned in lower proportions. The NG Kerk (7%), The Courthouse (7%) and the Old Bank Building (7%) were mentioned to be appreciated as tangible, cultural heritage resources by respondents appreciated mainly for their tourism value.

At a more personal capacity, the cemetery was also mentioned as a valued resource appreciated mainly for its tourism benefits (7%). Personal farm property was mentioned in the same proportion (7%) as a source of family heritage.

The proportion of respondents who did not know of, appreciate or interact with any resources was higher amongst Township respondents (20%) (Figure 18a) than Town respondents (10%) (Figure 18b). This suggests a greater disconnect between heritage resource awareness and appreciation by the people of the Township.

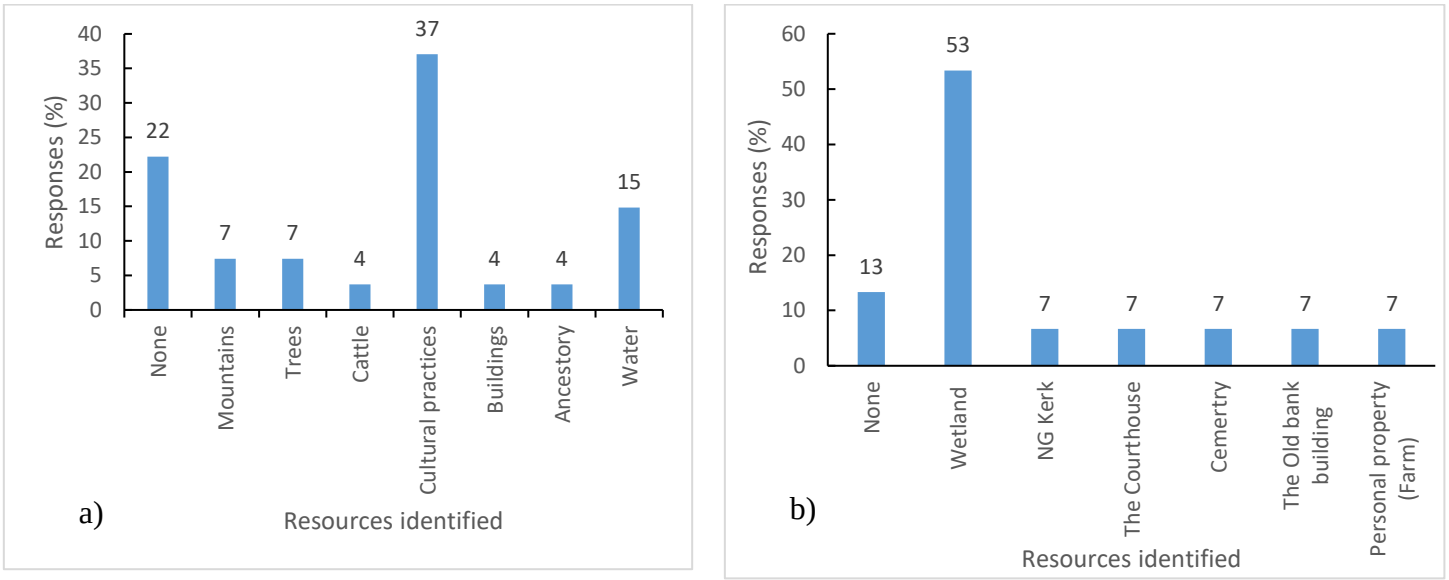


Figure 18: Proportions of responses identifying heritage resources appreciated and interacted with most by respondents in the Esizameleni (n=27) (a) and Town area (n=15) (b) of Wakkerstroom, Mpumalanga. Resources

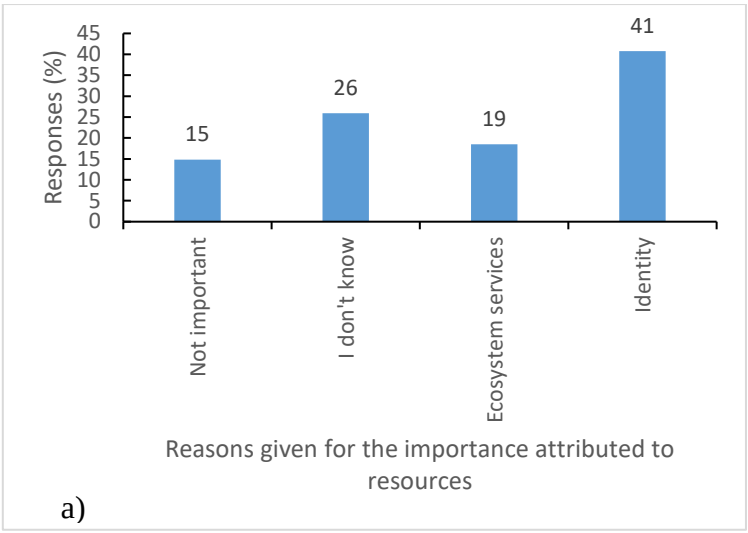
identified (x-axis) are plotted against the proportions of responses identifying these resources (y-axis).The Township area identified cultural practices in the largest proportion, while Town respondents identified the Wakkerstroom wetland in the highest proportions.

When asked what informed the importance attributed to resources by respondents, Township respondents mentioned that the importance of a resource was most attributable to its role in describing identity, providing information on family history and belonging (41%) (Figure 19a). This was followed by respondents who did not know why they thought heritage resources mentioned were important (26%). This response highlights a lack of understanding of heritage, and the significance of particular resources in the town.

Those who mentioned natural resources (19%) as important resources mentioned ecosystem services as the reason for ascription of resource importance Ecosystem services refer to benefits from the environment mentioned to be attained by respondents including water provided by river systems, grazing land for cattle in the mountain area s, plants for medicinal use and other sources of income derived from the natural environment (Figure 19a). Here, the benefits of resources for livelihood sustenance amongst people of the Township is highlighted. A smaller proportion of respondents (15%) ascribed no importance to resources.

In the Town area, ecosystem services received the highest proportion of responses for the reasons attributed to resource importance (47%) (Figure 19b). In this case, ecosystem services referred to birding activities, and the role of the Wakkerstroom wetland in removing pollutants from water (Figure 19b). This was followed by respondents who attributed the importance of resources for the benefit of inheritance (20%). Here, respondents valued resources for their ability to be passed down to future generations. The role of resources in tourism promotion (13%), as well as the benefits of heritage resources in defining individual identity (13%) were also mentioned as reasons for value ascription by respondents. The smallest proportion (7%) of responses were those of respondents who said that resources were not important, and therefore did not have a reason to value them.

The proportion of responses of those who did not see any value in resources was higher in the Township area (Figure 19a) than the Town area(Figure 19b) of Wakkerstroom. A clear difference in the value ascription is also seen amongst the responses, with respondents from the Esizameleni Township area mainly valuing resources for their role in defining identity with a greater focus on cultural value. This contrasts with the responses by respondents in the Town who mostly valued natural resources and the benefits therefrom.



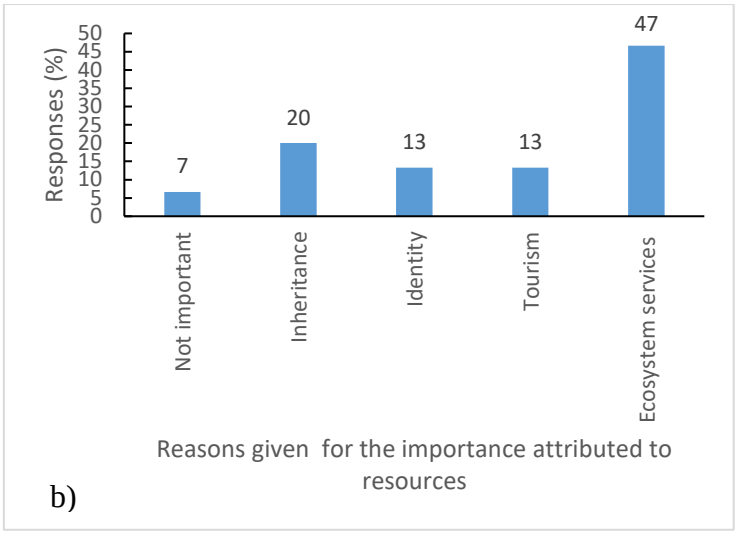


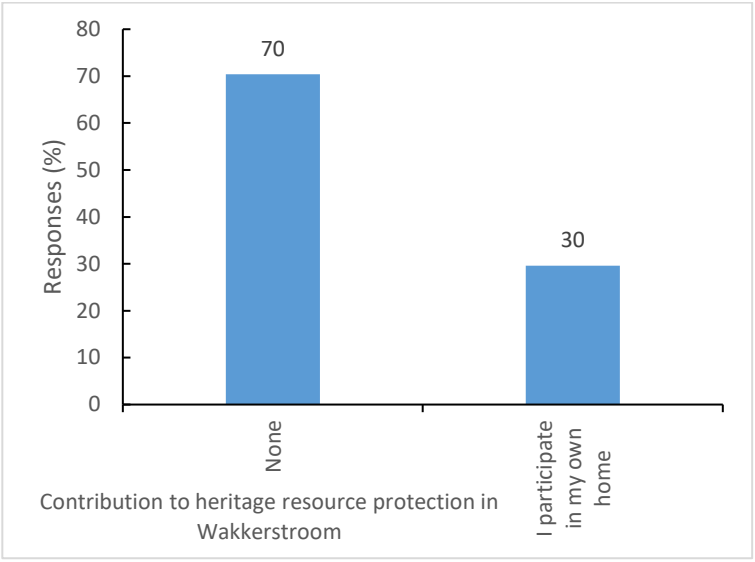
Figure 19: Reasons provided by Esizameleni Township (n=27) (a) and Town respondents (n=15) (b) of Wakkerstroom for the ascription of value to various heritage resources in the town. The proportions of responses given (y-axis) and the category of importance provided (x-axis) are shown above. Identity was the reason most given for value ascription to resources in the Township area, and Ecosystem services were the reason given for value ascription by Town respondents.

Heritage resource use and participation

In terms of participation of respondents in the different area s of the town in heritage resource use, and associated town heritage activities, 70% of Township respondents said they did not participate in any way (Figure 20a). The remainder of respondents mentioned practice, or use of heritage through activities at a personal capacity in their own homes. This was mainly through cultural practices (song, dance, traditional ceremonies), or monitoring of overgrazing where household cattle were concerned. Here, a disconnect between the Township area and town heritage resources is again suggested.

In contrast, amongst Town respondents, more varied responses were provided (Figure 20b). Most of the responses given by respondents (33%) in this area identified participation through membership in conservation organisations in the town such as the WNHA, or through participating in activities organised by the organisation. Participation through other conservation organisations such as Birdlife SA was also mentioned (Figure 20b). An equal proportion (33%) of respondents said that they did not participate in activities at all (Figure 20b). Participation through individual work at household level and cleaning of the wetland at a personal capacity had the same proportion of responses (13%). Respondents also mentioned monetary contributions to organisations as a form of participation (7%) (Figure 20b).

These results highlighted that active participation is weak amongst the Town area, with little effort from stakeholders to play active roles. Amongst the Township, participation linking to Town based organisations such as the WNHA and associated activities is largely absent.



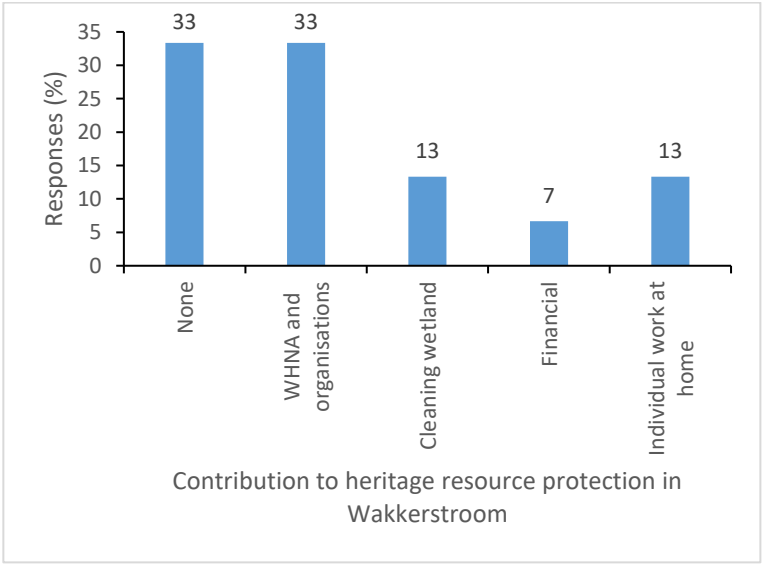
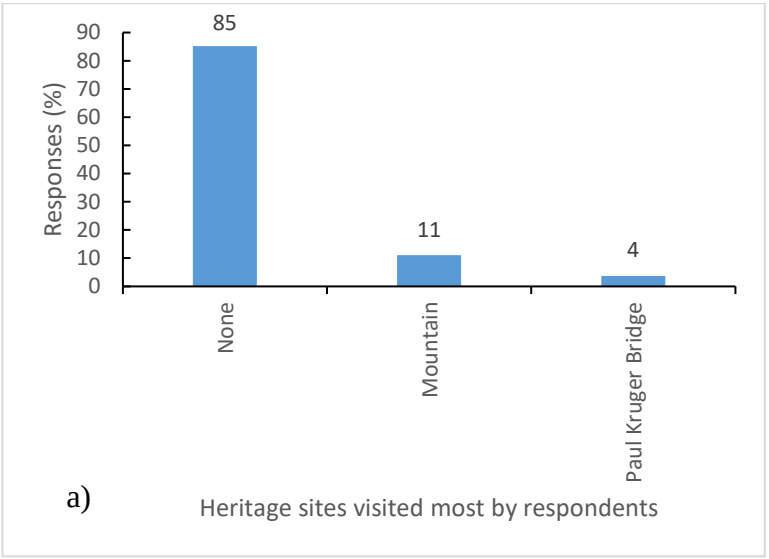


Figure 20: Responses indicating participation in heritage resource use and interaction in the town of Wakkerstroom, Mpumalanga. Proportions of responses by respondents (y-axis) and method of participation (x-axis) are shown for the Esizameleni Township (n=27) (a) and Town (n=15) (b) area s of Wakkerstroom, Mpumalanga.

Where the most visited heritage sites were concerned, a high 85% of Township respondents did not visit any heritage resource sites while the remaining proportions were mentioned at very low percentages. Visits to the mountain region of Wakkerstroom (Ossewakop) (11%) and the Paul Kruger Bridge (4%) (Figure 21a) were mentioned.

Amongst Town respondents, the Wakkerstroom wetland was mentioned most often as a sit respondents visited most (33%) (Figure 21b). This was followed closely by the proportion of respondents who said they did not visit any sites (27%) (Figure 21b). This relatively high proportion shows a low appreciation of heritage sites in the town by people of the Town area. The town Bioscope building was mentioned at the same proportion as responses falling under the category of “Personal places” (13%). “Personal places” included places such as pubs or homes mentioned by respondents as places most visited. The mountain area used for hiking, and the military cemetery were also mentioned at low proportions as sites visited (7%).



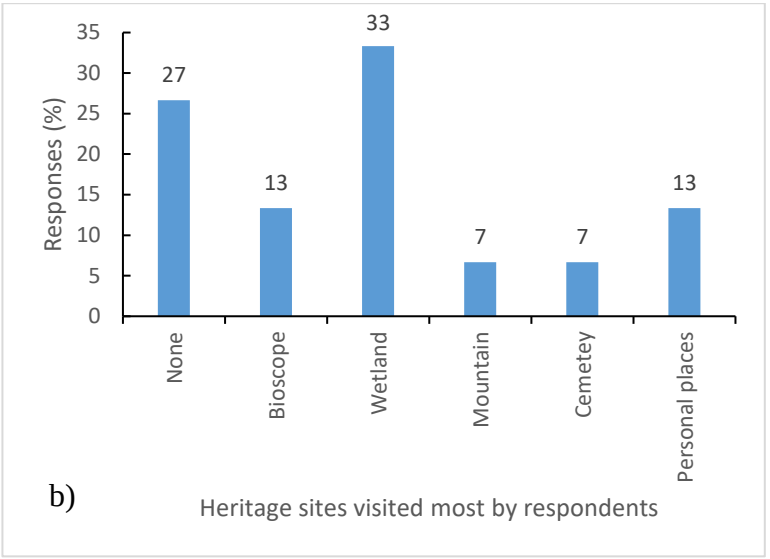


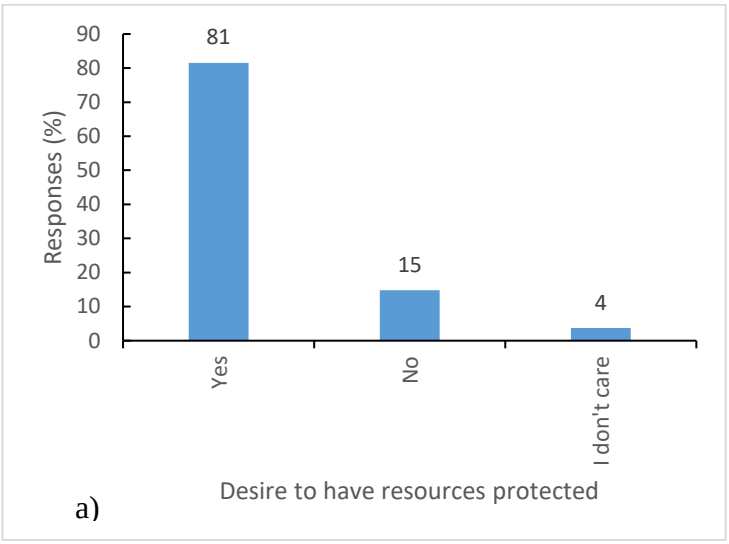
Figure 21: Sites mentioned to be most visited by respondents in the Township (n=27) (a) and Town (n=15) (b) area s of Wakkerstroom, Mpumalanga. Proportions of responses given (%) (y-axis) against the sites mentioned by respondents (x-axis) are shown above. The highest proportion of Township respondents said they did not visit any sites, while in the Town area, the Wakkerstroom wetland was mentioned as the site visited most by respondents.

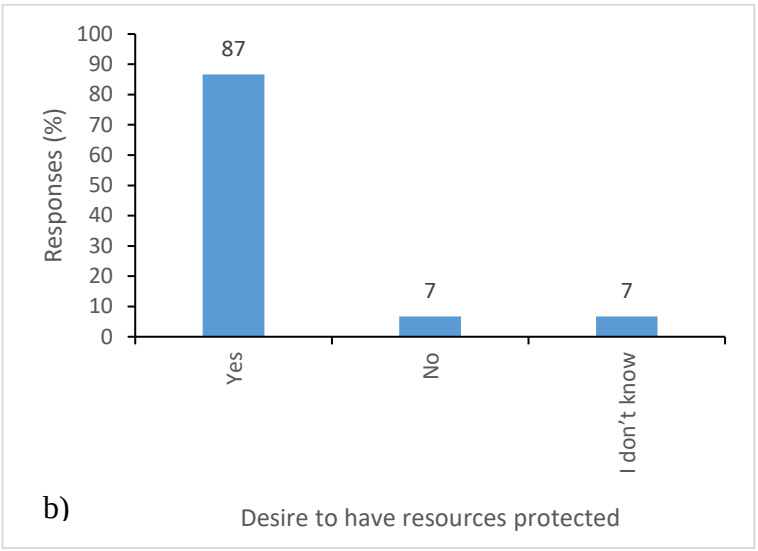
Resource protection

In the assessment of the perceived need to have heritage resources protected, 81% of Township respondents expressed a desire to have resources protected. A smaller proportion expressed the converse, with some respondents feeling that the resources were not important. (Figure 22a).

In the Town area, 87% of respondents expressed a desire to have heritage resources protected, the minority expressed the converse, attributing a lack of knowledge and understanding of heritage resources in the town as the rationale for this response (Figure 22b).

Here, a large proportion of stakeholders wanted resource preservation and conservation to take place in the town, despite the low levels of resource appreciation through resource use, and participation in activities surrounding heritage resources identified previously.





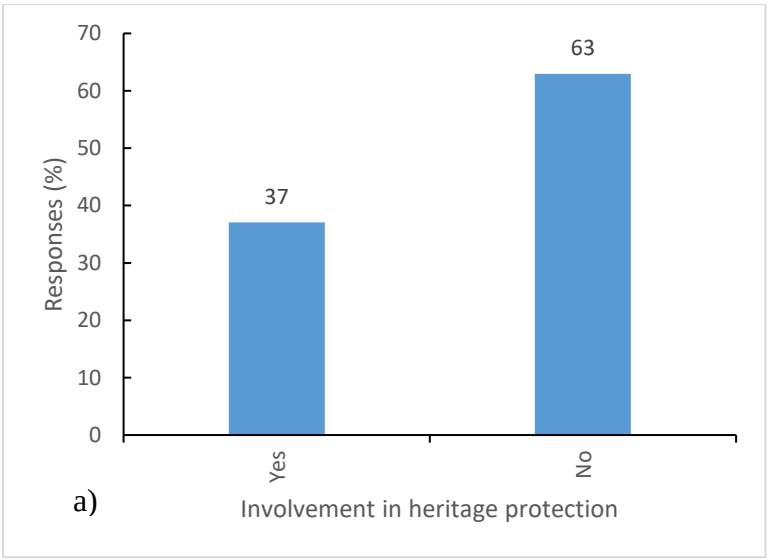
Involvement in heritage resource conservation

When asked whether respondents were involved with heritage conservation, 37% of Township respondents responded "Yes", while the remaining large majority of respondents responded "No" (63%) (Figure 23a).

Amongst Town respondents, 60% said they were involved in heritage resource conservation while the remaining proportion of respondents reported the converse (Figure 23b). A greater

Figure 22: Responses of Esizameleni Township (n=27) (a) and Town (n=15) (b) respondents to whether they wanted to have heritage resources in the area protected. Proportions of responses (%) (y-axis) against the desire to have resources protected (y-axis) are shown. In both communities, a large majority of respondents interviewed expressed the desire to have resources protected.

level of participation in conservation of resources is therefore noted for the Town area over the Township area of respondents. This again highlights the disconnect between community conservation efforts and the Township, as well as a disconnect between Town and Township stakeholders.



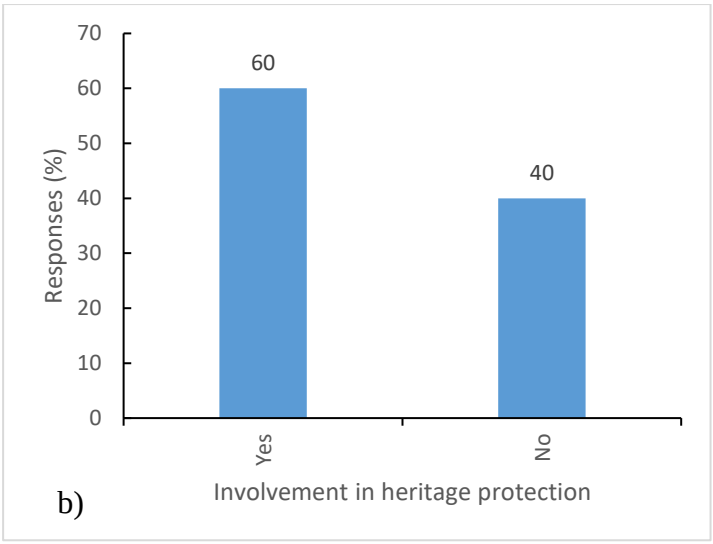


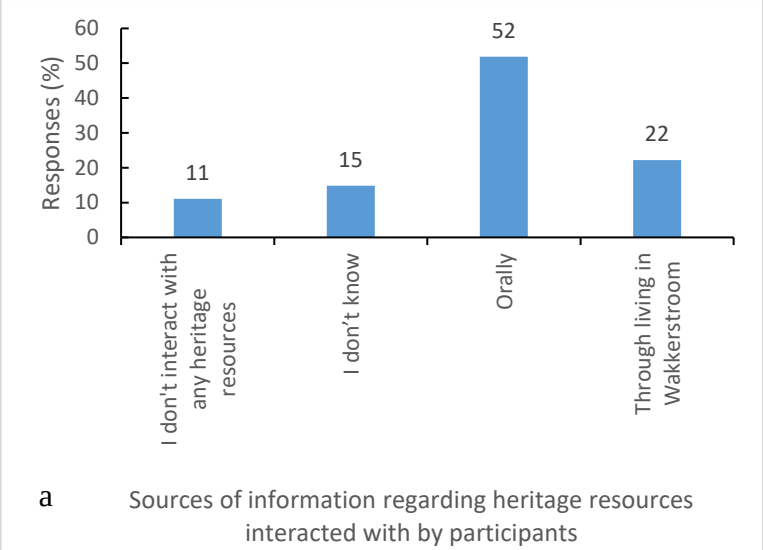
Figure 23: Proportion of responses by respondents in the Township (n=27) (a) and Town (n=15) (b) area s of Wakkerstroom, Mpumalanga, regarding whether or not they participated in heritage resource conservation. Proportions of responses (%) (y-axis) are shown against "yes" or "no" responses given (x-axis). A higher proportion of participation is seen in the Town area over the Township area of Wakkerstroom.

Information sources associated with heritage resources

When respondents were questioned about how their knowledge of resources was acquired, just over half of the Township respondents (52%) reported having learnt of the resources they are knowledgeable about orally, through transfer of information from older generations of family members, and word of mouth (Figure 24a).

In the Town area, "word of mouth" (40%) and written media including pamphlets, magazines and other town publications (27%) were the main sources identified (Figure 24b). Other sources of heritage information in the Town included information from work or school environments (13%), through community activities in the town (13%) and through the town information center (7%) (Figure 24b).

The mention of written sources by respondents in the Town area (Figure 24a) contrasts to responses from the Township area where no mention of written sources was made (Figure 24b). This indicates a heavy reliance on oral transfer of information in the Township.



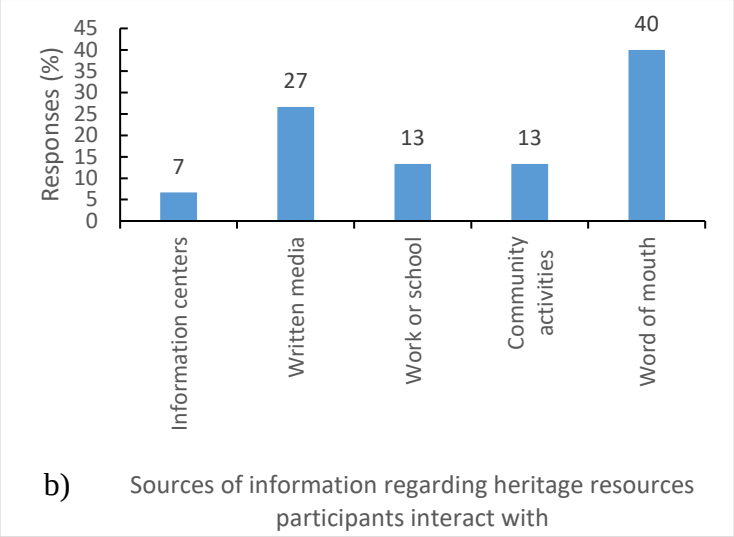


Figure 24: Responses regarding the sources of information regarding heritage resources interacted with by respondents in the Township (n=27) (a) and Town (n=15) (b) areas of Wakkerstroom, Mpumalanga. Proportions of responses (%) (y-axis) are shown against the categories of information sources mentioned by respondents (x-axis). Written media is mentioned amongst the Town respondents, and omitted amongst respondents of the Township area who relied heavily on oral information transfer for heritage resource information.

Further resource protection

The majority of Township respondents perceived water resources to require further protection, followed by the mountain regions of Ossewakop (Figure 25a). Traditions practiced by people of the Township, including cultural practices, were mentioned as requiring protection (4%). Respondents felt loss of knowledge of these traditions was taking place in present generations, subsequently presenting a loss of cultural heritage in the future of the community. Mention of the recreational areas such as the stadium also took place (4%). The stadium was mentioned as an important piece of heritage, forming part of the culture of the community and therefore important to consider in conservation (4%) (Figure 25a).

In the Town area, the highest proportion of respondents perceived the wetland to require further conservation. This indicates concern over the preservation of the resource, and correlates with the high appreciation for the resource previously noted. The cemetery in the Wakkerstroom town (7%) and the Ossewakop mountain area of the town (7%) were also mentioned by a small proportion of respondents in the Town as sites requiring further conservation (Figure 25b). A low proportion of respondents felt that none of the resources needed further protection.

The mention of the water resource in the highest proportions in both communities shows the value of water resources such as the wetland for the Town of Wakkerstroom.

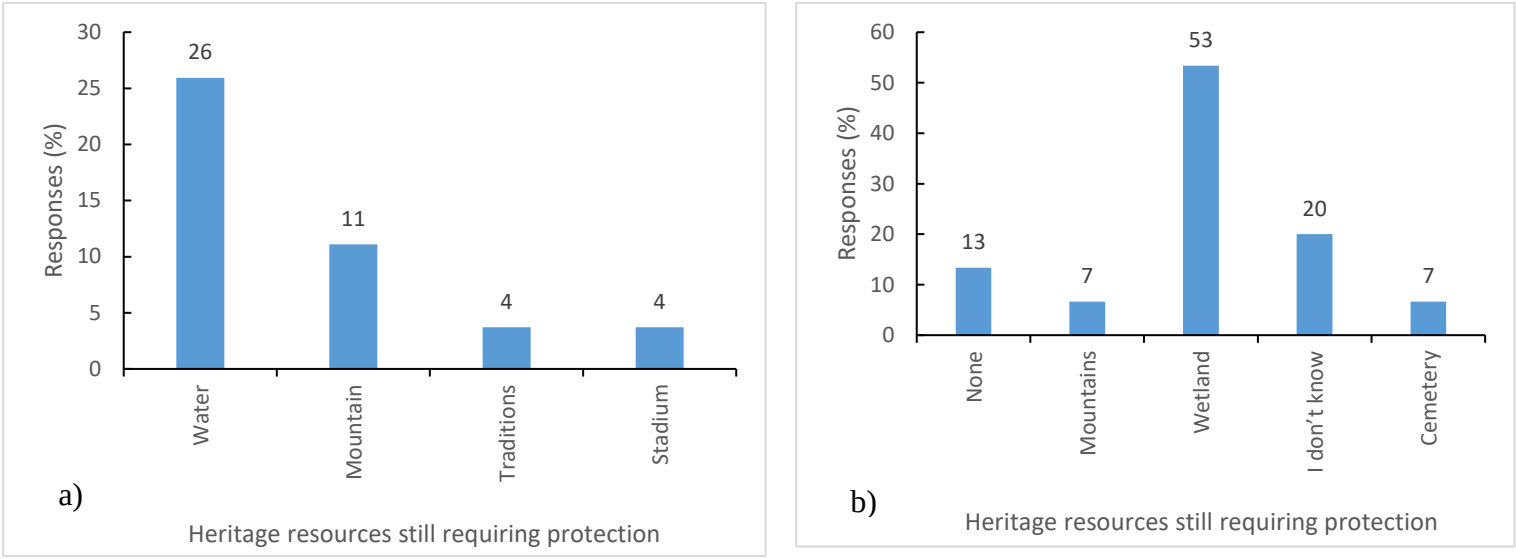
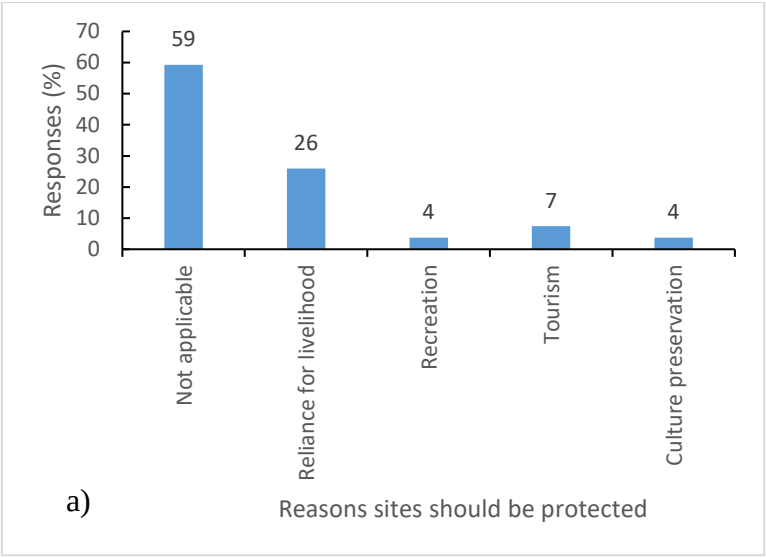


Figure 25: Heritage resources perceived by respondents to require new, or further protection in the Township (n=27) (a) and Town (n=15) areas of Wakkerstroom, Mpumalanga. Proportions of responses (%) (y-axis) are shown against the categories of resources identified by respondents (x-axis). Water was most perceived to be the resource requiring conservation amongst the Township area. In the Town area, the wetland was perceived to require further protection. Here the importance of water sources to both communities is noted.

The reasons offered as to why resources mentioned should be protected, or required further protection differed amongst the communities. In the Township, a high proportion of respondents did not perceive any new resources as requiring protection (59%). For the resources that were mentioned, a high proportion of responses mentioned the importance of these resources to the maintenance of the livelihoods of the respondents (Figure 26a).

In the Town area, the importance of water resources to water supply was mentioned as a reason for the further conservation suggested. However, many respondents of the Town still felt that resources did not need conservation (Figure 26b). There were a few that mentioned the importance of history (13%), culture (7%) and tourism (13%), and subsequently the need to conserve these resources for these purposes.



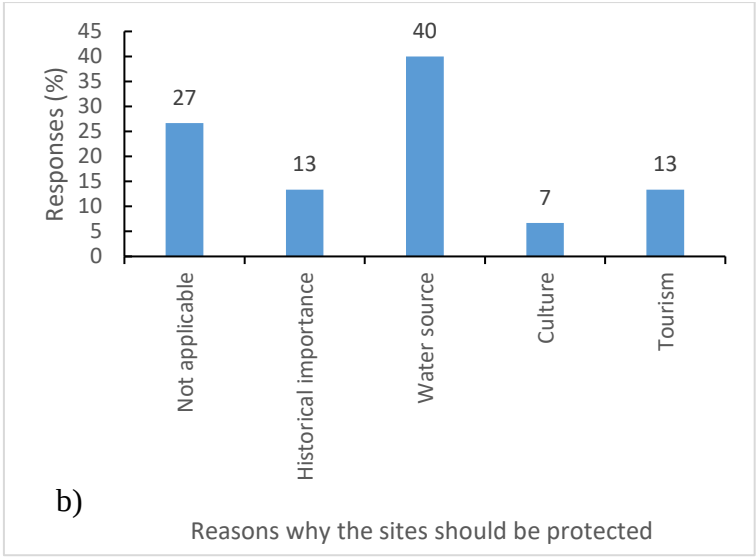
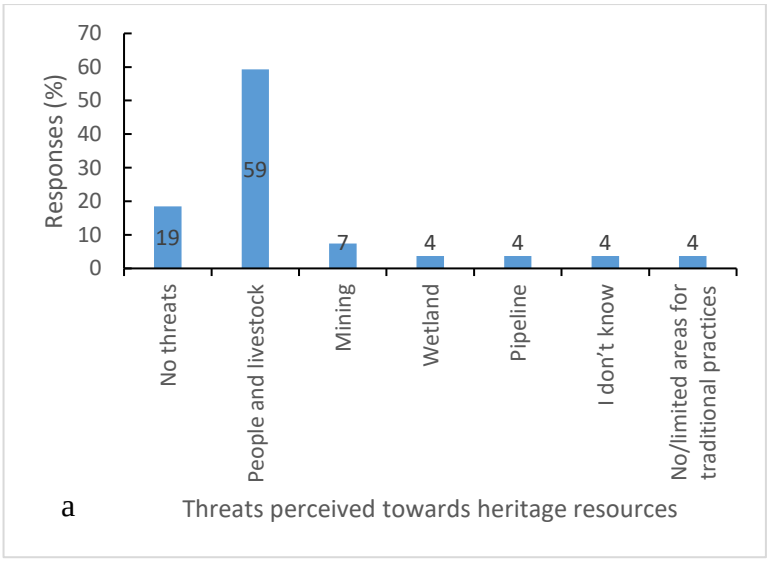


Figure 26: Reasons for the suggestion of further conservation of heritage resources mentioned in Figure 24 amongst respondents in the Township (n=27) (a) and Town (n=15) (b) areas of Wakkerstroom. Reasons offered (x-axis) against the proportion of responses given (%) (y-axis) are shown.

Threats to heritage resources in Wakkerstroom

In terms of threats to heritage resources, Township respondents (59%) identified threats falling under the category of "people and livestock" (59%) as the greatest threats to heritage resources (Figure 27a). These included activities involving people and livestock such as overgrazing by animals, littering, crime, dumping into water systems, and negative attitudes towards conservation by Town respondents. This was followed by people who perceived no threats to resources (19%). Mining (7%), the wetland (4%), issues over the proposed pipeline (4%) and places to teach and practice cultural and traditional practices (4%) were mentioned by very few.

In the Town area, respondents identified mining as the top threat to heritage resources (mainly natural heritage in the form of the wetland) (Figure 27b). This was followed by some responses relating to concerns about farming practices including the mention of overgrazing by cattle and movement of farming into wetland borders (20%). A lack of interest in conservation and general pollution were also mentioned as threats (13%). Alterations to buildings resulting in changes to the original heritage and threats posed by climate change were both mentioned on occasion (7%).



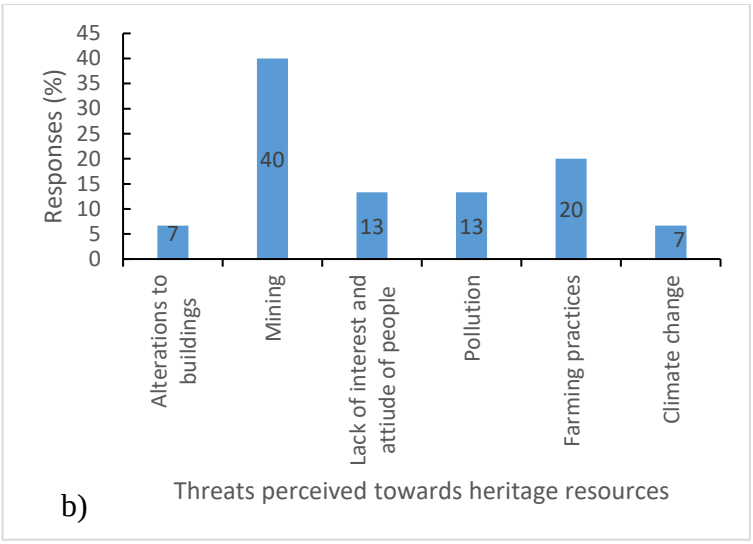


Figure 27: Threats to heritage resources identified by respondents in the Township (n=27) (a) and Town (n=15) (b) area s of Wakkerstroom, Mpumalanga. Proportions of threats mentioned (%) (y-axis) against the threats mentioned by respondents (x-axis) are shown. In the Town area, mining is recognized as the biggest potential threat to resources. In the Township area, threats falling under 'People and livestock" including overgrazing by animals, littering, crime, dumping into water systems, and negative attitudes towards conservation by Town respondents are mentioned in the highest proportions.

Objective 4: To use the perceptions of stakeholders, and stakeholder interactions to make suggestions for the development of a management plan for heritage resources in Wakkerstroom

Suggestions towards developing management guidelines and improving management in the town of Wakkerstroom

A management plan is typically composed of goals and objectives for the conservation of resources. This is preceded by an understanding of the significance associated with a resource, and the benefits associated with its preservation. Goal setting, time frames, budget allocations, and monitoring and evaluation form crucial aspects of management plans (Saterson *et al*., 2004; Sutherland *et al*., 2004). Although some of the information necessary for the development of this plan is available, workshops and stakeholder meetings would be essential to gaining more information.

The municipality, as part of government, is the main body responsible for the management of resources within towns and townships located within the Dr. Pixley Ka Isaka Seme municipality (Rautenbach *et al*., 2015). The municipality has delegated conservation and management of the wetland to the WNHA. Outside of the management of the wetland allocated to this organisation, other aspects of management fall under the leadership of the municipality of Dr. Pixley Ka Isaka Seme for provision for conservation actions in planning.

The section below begins by addressing the management of the Wakkerstroom wetland by the WNHA, and suggestions for the improvement of actions by the organisation. This is followed by the issues identified from the study (Objectives 1, 2 and 3), to be addressed under the leadership of the municipality of Dr. Pixley Ka Isaka Seme. These will be discussed under the headings: “Communication and community involvement in conservation”, “A lack of interest and care”, “Low education levels in the Township area”, and “The New Cemetery in the Esizameleni Township”. Provision for cultural heritage protection in the town also discussed. The section ends with a section on combined efforts required for town conservation where mining in the town as well as declaration of the town as a heritage town are subjects discussed. Suggestions for inclusion in future management plans are made under each of the components with the overall aim of improving conservation and management of resources in the town of Wakkerstroom, and moving towards a sustainable town community.

Management of the wetland by the WNHA

The management of the wetland currently falls under the responsibility of the WNHA. The organisation is responsible for ensuring that the wetland remains legislatively compliant under the National Environmental Act No. 107 of 1998. The section below mentions what is done by the WNHA in relation to wetland conservation, and includes suggestions, where necessary, for inclusion in future management plans by the organization. The development of an environmental management plan will allow the ecosystem services received from the wetland to remain available and attainable, and for a healthy state of the ecosystem to persist (Wood *et al.,* 2013).

Formal documentation

In attempts to improve the management of the wetland, a draft Environmental Management Plan has been submitted to the office of the MEC for review and possible approval. Environmental management plans serve as formal documentation to ensure procedures are followed in protection of natural resources, and that any industrial activities taking place within the town are monitored, mitigated and do not negatively affect the environment and important features with it such as the wetland (Humby, 2015). In order to facilitate improved conservation of the wetland in terms of legislation actions, this draft should be completed and moved through government for approval and implementation.

Cattle grazing

Cattle grazing is one of the ecosystem services offered by the wetland, and is therefore also an area worth mentioning when looking at effective management of the wetland. From Objective 3, the perception of overgrazing as a threat to the vlei was suggested. This implies the perception that grazing in the vlei is not monitored. This is however not the case. The WNHA currently track the number of cattle grazing in the vlei. A monthly fee of R15 per head of cattle is paid by cattle owners to allow cattle to graze in the area. This shows that grazing in this area is controlled, and the aspect of monitoring and evaluation necessary in a management plan is provisioned for in this regard. Monitoring in this way should be carried forward to future management plans to ensure that management remains effective and adaptive over time (Sales-Baptista *et al*., 2016).

Bird habitats and herbicide spraying

The WNHA have also encouraged the spraying of herbicides along the margins of the vlei. The intention is to create a mosaic of habitats for wetland birds in the region. A diverse habitat creates and maintains the potential of multiple bird species to roost in different areas of the vlei (Tozer *et al*., 2010). The use of herbicides for this purpose could be improved through continued monitoring of the changes in habitats including floral composition and bird presence (presence or absence) with herbicide use. Monitoring will help to evaluate the effectiveness of herbicide use for this purpose.

Presence of the Phragmites australis (Cav.) Trin. Ex Steud.

In terms of vegetation composition, the abundance of *P. australis* reeds is increasing in the vlei. *P. australis* is a common reed, often located in and near freshwater systems, it is often the dominant vegetation in areas where it is found (Güsewell & Klötzli, 2000; Clevering, 1997). *P. australis* creates a change in the habitat type of the wetland, and subsequently affects roosting of birds in the area. The reed also often results in decreased plant biodiversity in areas in which it occurs (Bertness *et al.*, 2002). This affects the abundance of bird species in this birding location (Poulin *et al*., 2010). Future management plans should continue to ensure that *P. australis* does not dominate to the extent that the other plant communities are excluded from the wetland. Mechanical methods such as burning, mowing and excavation have been used (Kiviat, 2010; Moore *et al.*, 2009). Chemical methods through the use of glyphosate and herbicides have also been suggested (Cheshier, 2012). Biological control may also be used using either competing plants or insects (Kiviat 2006). These interventions will serve as a means to limit *P. australis* dominance in the vlei. This will result in increased faunal species diversity, and contribute to sustaining the birding activity associated with the wetland.

Fire management

Fire management in the wetland is also undertaken by the WNHA by working closely with the Working on Fire organisation. Burning in wetlands can have positive effects on the wetland including vegetation regeneration, and diversification of plant habitats (Allen, 2000). The positive benefits from burning depend on factors such as the natural fire regime of the wetland, the intensity of the fires in the wetlands as well as the frequency at which burning takes place (Allen, 2000). In Wakkerstroom, Working on Fire is involved in the maintenance of firebreaks in the vlei region. Fires occur frequently in the Wakkerstroom area in the winter months, fire breaks prevent the spread of fires and fire damage. This also protects households

near the vlei from damage. Fires in wetlands may also have negative impacts, when fire intensity is too high or burning is too frequent, resulting in a loss of wetland fauna, weed invasion and increased water temperatures (Allen, 2000). To ensure and improve the effectiveness and action of burning, a formal record of burning events should be kept by the organisation. A record of where, in the form of GPS co-ordinates, , and when (month) burning takes place and frequency can form part of the monitoring and evaluation of the management plan in order to prevent potential negative impacts of burning in the wetland, and subsequently improve its conservation.

Ramsar site declaration

The WNHA along with BirdLife SA are also looking at ways to have the wetland declared as a Ramsar site. South Africa played a role in the enforcement of the Ramsar Convention on Wetlands as one of the parties taking part in 1975 (Dini and Everard, 2016). The Ramsar Convention is targeted towards promoting "the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world". Signatories to the convention commit to the inclusion of wetland protection in national protection measures (Finlayson, 2011). In South Africa, a wetland can however only be included as a Ramsar Site when declared as a protected area under the National Environmental Management: Protected Areas Act. Currently the wetland is classified as an informally protected area, not yet formally protected by legislation (Bgisviewer.sanbi.org, 2020).

Pollution

Within the theme of human impacts, pollution of the wetland water systems was identified by respondents as a perceived threat to water resources in objective 3. Activities such as nappy disposal as well as dumping especially in the Township area s of Wakkerstroom result in contamination, resulting in elevated levels of *Escherichia coli* (*E-coli*) and decreased water quality. In future management plans, it is important for the WNHA to monitor the impacts of human activities to prevent degradation of the vlei (Safari *et al*., 2012; Kingsford *et al.*, 2016). Currently, litter removal projects are underway in the Township and Town area s of the town. Educational campaigns (Litter Lions) involving the youth of Esizameleni Township take place to facilitate litter awareness, reduce littering and dumping behaviours amongst the youth, and facilitate litter clean ups. Efforts are also being made by the WNHA to work towards incorporating environmental education into school curricula in the Township area. Although targeting the youth for educational campaigns is beneficial, plans should be made

to educate adults, as decision makers of households, with greater influence of household actions including decisions to dump refuse in public areas. This could be carried forth as a recommendation for future management plans. The Municipality should police its by-laws which specifically include "litter".

The proposed pipeline from Martin's dam to Volksrust

The pipeline proposed by the Dr. Pixley Ka Isaka Seme municipality was meant to carrying water from Martin's dam to Volksrust. This was perceived to be an issue mentioned by respondents in Objective 3. The pipeline is proposed to run along the R543 to Wakkerstroom, across the Wakkerstroom vlei and on the Martins dam wall via the eMkhondo road in the town (Wakkerstroom Natural Heritage Association vs Dr. Pixley Ka Isaka Seme local municipality, 2019). This remains a contentious issue in the town with the municipality insisting on the project, despite grave opposition from residents of the town (WNHA, 2019). The pipeline was proposed in the municipalities" IDP, with various issues and concerns identified with the proposed construction of the pipeline. The first of these relates to the amount of water available in Martins Dam, and the question of whether there is enough water in the dam for Wakkerstroom town, Esizameleni and additionally for Volksrust and Vukuzakhe (WNHA, 2019). Engineering reports produced from the investigation have shown that the water in the dam would not be sufficient for this purpose. Another issue mentioned by the WNHA is with the procedures undertaken and omitted by the municipality in deciding to carry out the proposed project (WNHA, 2019). The municipality did not carry out an environmental impact assessment with there being no consideration of the impacts the pipeline would have on the water supply to the wetland. A full hydrological study and legal documentation including a water use license under the National Water Act 36 of 1998 and Environmental authorisation under the Environmental management At 108 of 1998 are necessary before the project may proceed. These processes have not been complied with by the municipality (WNHA, 2019).

Suggestions have been made that a better alternative to the expensive construction of this pipeline (R130 million cost of project) is to use an existing pipeline connected from the Zaaihoek dam to Vukuzakhe (WNHA, 2019). In addition to the benefit of reduced costs to the municipality and government, this alternative would draw water from a dam with more water, and subsequently greater capacity to supply water to the areas targeted by the proposed pipeline (WNHA, 2019).

As this is an important issue with huge consequences for heritage resources, and in particular the natural heritage in the form of the wetland, management plans should include a follow up on the provision of relevant documents by the municipality before commencement of pipeline construction. Court appearances have been made (including the Wakkerstroom Natural Heritage Association vs Dr. Pixley Ka Iska Seme local municipality (2019) in The High Court of South Africa, Mpumalanga division, Middelburg). Major outcomes of legal procedures currently taking place involving WNHA and other interest groups versus the municipality should continue to be communicated to other stakeholders to maintain communication and community cohesion about the issue.

Issues identified and the role of the municipality in leading and providing solutions

Communication and community involvement in heritage resource conservation

Communication was an issue clearly identified in the responses obtained in objective 3. There was the lack of knowledge about organisations tasked with the management of heritage resources in the town amongst respondents. This translated to a lack of awareness and participation in management activities. Respondents were often unaware of heritage resources nor were actively conscious of the need for their conservation. Activities of the Town and Township area s were also shown to be separate, with a greater level of heritage resource conservation taking place in the Town area compared the Township area. This also indicates a lack of cohesion and communication between the two areas.

The communities of Wakkerstroom were described as “not active” in management conservation efforts and projects initiated by the WNHA and other organisations in the town. Improved communication between the Town and Township could also result in improved community Involvement in the management actions implemented in the town. Where community involvement is currently present, involvement is through engagement with various campaigns, including the litter campaign, and volunteer work through the Working on Fire Organisation.

Community participation could and should be improved in Wakkerstroom for better resource protection, as community support is important to the success of any conservation actions implemented. Greater community involvement was highlighted to likely promote accountability and awareness in terms of resource use and conservation in the town.

The 2017-2022 Integrated Development Plan (IDP) for the Dr. Pixley Isaka Ka Seme Municipality also identifies a lack of effective public collaboration in the way of tourism

activities. This is attributed to what the IDP identifies as a struggle to establish a common vision for tourism amongst public and private sectors, communities and other stakeholders. The need to promote collaborations between stakeholders is recognised in the IDP (Dr. Pixley Ka Isaka Seme IDP 2017-2022).

Addressing this issue requires the municipality to lead management actions to facilitate improved community engagement. This can be achieved through organizing a committee tasked with overseeing and ensuring that community engagement takes place. Regular community meetings involving both Town and Township communities in areas accessible to both communities could be part of the solution towards improved engagement. Incorporating these into a management plan may facilitate more cohesive views from the people of the Town and Township area, and possibly more effective outcomes in heritage resource protection as a whole. Achieving consensus views amongst stakeholders fulfils the aspect of common views promoted in management plans, leading to more focused and attainable goals and objectives.

In addressing communication, it is important to consider the use of language differences within the town of Wakkerstroom when disseminating information and carrying out conservation related engagement. While many of the Town people are able to communicate in English, a large majority of the Township people do not understand the language enough to communicate effectively. The method of having meetings to disseminate information is also a way to facilitate oral information transfer, the preferred type of communication in the Township. Incorporating languages such as isiZulu, siSwati and Ndebele used in the Township will ensure greater understanding amongst the community of Esizameleni.

Lack of interest and a general perception of not caring

The lack of community interest associated with resource conservation is an issue clearly seen from responses in objective 3. Stakeholders are fundamental to the success of management activities carried out in the town, making this an important issue to address. In developing a management plan, this could be addressed through highlighting the benefits of resource conservation for the stakeholders involved, which could result in greater enthusiasm and interest in, and co-operation with conservation efforts. For business owners in the Town area, participation in heritage conservation activities would result in increased tourism and income for the businesses. In the case of Township residents, the benefits of clean water availability associated with participating in clean up campaigns and correct refuse disposal could also be

explicitly highlighted during community meetings. Benefits of potential income through increased tourism could also be put forth to township residents, to encourage leveraging of tourism taking place in the Wakkerstroom town. In this regard, the municipality could take responsibility for entrepreneurial training in the Township area to encourage a business-tourism mindset, actions and behaviours. Creating and highlighting benefits of conservation in this way, may achieve greater community buy-in where conservation activities are concerned. The municipality can lead and co-ordinate this through a using the same committee tasked with community engagement to promote the heritage features of the town, and the benefits these pose for stakeholders. This make the benefits of resource preservation clear to stakeholders, and possibly foster greater interest and participation.

Education levels in the Township area

Education levels impact greatly on the extent to which conservation can take place. It was seen from the data collected that education levels in the Esizameleni Township are low. In South Africa, low levels of education have been associated with low levels of employment and subsequently low levels of income (Naudé, 2000). This is the case in Esizameleni where general lack of interest and despondency from respondents in objective three can be linked to a perceived lack of opportunity stemming from a lack of employment and possibly education.

To begin to remedy this, the municipality could take the lead through monitoring school attendance and school throughput rates (high school and primary levels) in the Township area, in order to identify, monitor and address issues resulting in increased or decreased throughput rates in schools. Education monitoring and assessment would take place with the intention of ensuring that large proportions of the population achieve basic education, and preferably reach grade 12 level.

An example of an education monitoring system is seen in a framework suggested by Braun and Kanjee (2006) where educational assessment involves considering access to schools and schooling, education quality provided and educational institutions, efficiency of the education system through monitoring factors such as throughput and equity in terms of discrimination and inclusivity.

The low levels of English language comprehension and use can also be linked directly to the low levels of education in Township area relative to the Town area of Wakkerstroom. A higher level of school attendance and completion would result in a greater knowledge and use

of the English language amongst people of the area, and more individuals able to partake in communication using this language.

New Cemetery in Esizameleni

In the IDP for 2017-2022, the municipality pays little attention to heritage and its conservation. Mentions of a new cemetery in Esizameleni have been made, with the municipality mentioning the intention to provide a new cemetery. This has not yet materialised. Cemeteries are recognised as heritage resources, playing an important role in defining identity, through providing information on the historical identity of people within a town or area (Rainville, 2009). It should therefore remain in the plans of the municipality to deliver this request by the community.

Consideration of cultural heritage protection

It has also been outlined by the study that cultural heritage is not thoroughly considered in the provisions by the municipality for resource protection. Where conservation and management responsibilities for the natural heritage of the town have been delegated to the WNHA and other organisations (including the Wakkerstroom Walks and Trails) such managing bodies do not exist for cultural heritage resources. The municipality could ensure that this is provisioned for in subsequent management plans, to ensure that cultural heritage resources such as buildings and cultural activities mentioned in Objective 1 are cared for. Under such an organization or committee provisioned for by the municipality, plans could include the maintenance of buildings including national monuments, especially for their value in attracting tourism to the town. Where alterations to buildings was listed as a threat to resources, such monitoring could prevent further unfavourable alterations to buildings. Consideration of all other cultural heritage resources such as the intangible heritage should also be included in management plans. The consideration of cultural and natural heritage could take place under a single umbrella in a way that coincides, with cultural management committees or organisations working closely with, or under the current and fully established WNHA organisation. This will ensure better conservation of cultural resources in the town, and ensure longevity and sustainability of the resource over time.

Combined efforts for town conservation

This section aims to achieve an integrated approach to achieve a shared vision for the town of Waakkerstroom. Efforts by organisations within the town, the greater town community as well as the municipality, benefiting all parties through town conservation and improvement are considered.

Declaration as a heritage town

Here, the consideration and actions towards the declaration of Wakkerstroom as a heritage town could be undertaken. A heritage town is a town of great historical value, with multiple historic buildings, areas and historical events associated with the town. According to UNESCO, a heritage town is characterised by continued use of the town for living purposes, and subsequently the maintenance of resources, preventing deterioration (Schröder-Esch, 2006). Examples of heritage towns include Taal in the Philippines, valued for its rich cultural value and classified as a heritage town under the constitution of the Philippines. In South Africa, Cradock is considered a heritage town, rich in cultural history dating back to over 400 years Classification of Wakkerstroom as a heritage town will lead to a greater pool of resources becoming available for the conservation of not only the natural heritage in the town, but also town buildings in the way of national monuments, and other valued pieces of heritage. These resources include greater financial provision from government, expertise on heritage resources at a wider scale on issues encountered in the wetland area, and greater income through tourism. The preservation of the town will lead to a greater presence and retention heritage resources resulting in an influx of tourists for natural and cultural heritage associated activities.

Mining

Local economic development is mentioned in the IDP, including the prospect of mining the natural resources (mainly coal) in the district and using this as a source of economic development (Dr. Pixley Ka Isaka Seme Local Municipality IDP, 2017). Prospects of open pit mining in the municipality include expansion of mining activities by the company Kangra Coal (Pty) Ltd at the Savmore Colliery near Piet Retief. Yzermyn Underground mine under the Atha-Africa group is also a coal mine near Piet Retief, seeking to begin coal mining according to the IDP (Dr. Pixley Ka Isaka Seme Local Municipality, 2017).

The IDP recognises under Development principle 1 the need to achieve a balance between areas of environmental conservation and activities such as mining and tourism (Dr. Pixley Ka Isaka Seme Local Municipality, 2017). Mining activities have been associated with damage to water bodies including rivers and wetlands, through contaminants from mine sites such as acid mine drainage. Mining is also a water intensive activity in a municipality with basic water supply issues (Bian *et al*., 2010). In developing a management plan for the town, these and other areas should be taken into consideration by the municipality through putting

measures in place to ensure that Development Principle 1 mentioned above is adhered to. Plans should be put in place by mining companies to combat social and environmental impacts associated with mining in the town. Issues such as the unsustainable short term employment associated with mines should be addressed through attempting to fund longer term employment opportunities or businesses in mining affected areas in the municipality. Potential impacts to ground and surface water should also be mitigated against, and documentation for this checked by the municipality to ensure compliance by mining companies.

Chapter 5: Discussion and conclusion

The discussion is presented under the framework of building a sustainable community. This section begins by outlining the purpose of the study in relation to building sustainable communities. This is followed by a discussion of the results in the context of considering Wakkerstroom as a heritage town. The role of stakeholder interactions in sustainability are then discussed in light of the results of the study. Implications of stakeholder perceptions for management and sustainability and incorporating stakeholders into management plans for effective heritage resource conservation are then discussed. There is a brief conclusion of the study.

Building sustainable communities through heritage conservation

The study set out to assess the heritage resources present in the town of Wakkerstroom, to identify the stakeholders associated with these resources and to establish the interactions taking place between stakeholders in the town. In addition, the study set out to establish stakeholder perceptions to heritage resources. These aspects were investigated with the aim of using information obtained to make suggestions for heritage conservation and management plans in the town contributing towards SDG 11. The study set out to achieve this through contributing to the development of sustainable communities in the town of Wakkerstroom, around the issue of heritage conservation and lays the groundwork for beginning to understand the perceptions held towards heritage and heritage resources in the town of Wakkerstroom.

Wakkerstroom as a heritage town

The study identified a combination of natural and cultural heritage resources in the town of Wakkerstroom. The rich heritage of the town is seen in the diverse assemblage of 12 heritage related sites and activities, linked in many ways to the town's history. The Wakkerstroom wetland was identified as the main natural heritage resource of importance in the town. In terms of cultural heritage, three sites classified as national heritage resources were identified (The Paul Kruger Bridge, The Old Magistrates Court and St Mark's Anglican Church), along with two annual town heritage festivals of music and crafts which celebrate, through artistic display, the cultures of various inhabitants of the region and beyond. This diversity in cultural and natural heritage, and high historic value of Wakkerstroom support the suggestion of the classification of the town under the definition of a "heritage town" as used by Rahman (2013). The classification of Wakkerstroom as a heritage town would be relatively novel in

South Africa, as these are rare, and a focus on the classification of heritage sites is most practiced. Although this is true, the process would be rewarding. Classification as a heritage town would result in a possible increase in heritage associated tourism and resource availability in the form of financial provision. This would assist in facilitating improved conservation efforts in the town. Protection of resources in this way would then create a greater potential for sustainability of the resources in the town, and subsequently the communities that value them.

In protective processes such as the EIA, criteria considering aesthetic and historical associations, information potential and social potential dimensions in the assessment of heritage, many of the resources in Wakkerstroom can be categorized as having value in these aspects (Table 1). This would lead to the classification of the resources into class 2 and 3 levels of importance according to Wells *et al.*, (2013) (Table 2). Better protection of resources by the municipality and designated authorities would result in the benefit of improved classification on the integrity scale used in heritage assessment (Table 3). Standalone Heritage Impact Assessments are also important and could serve in the conservation of heritage resources in Wakkerstroom.

Stakeholder interactions and sustainability

Two main stakeholder groups made up of people from the Town and Township areas were identified by the study. Value definitions were found to be different amongst the two communities. Value attributed to heritage amongst Township respondents related to the importance of heritage in defining identity. This was coupled to the mention of cultural practices and traditions at personal and household levels as important heritage aspects. In the Town area, the natural heritage was valued most, with the wetland mentioned as the most important heritage resource amongst respondents. This may be because of the greater interaction of people in the Town with the economic benefits of the wetland in the form of the birding and tourism activities associated with the feature, which generates income mainly for Town business owners in the stakeholder group as well as tour guides, who have been trained and whom are based in the Township. The cultural value recognized amongst stakeholders in the Township may be attributed to the reiteration of the importance of these cultural aspects to identity by previous generations, resulting in conservation of the practice of these cultures and traditions over time, and subsequently the appreciation of this form of value above all others amongst Township respondents. The greater exposure of Town stakeholders to knowledge of the wetland, and the environmental benefits offered thereby,

may also have led to a greater appreciation for the resource. The mention of knowledge here could link the differences in the value ascriptions by the respondents of the two groups to the differences in the demographics of the two areas, and in particular to differences in education levels. When developing management plans, various value definitions amongst stakeholders must be considered and addressed in order to create inclusive town heritage conservation (Aas *et al.,* 2005). Here, the concept of group boundaries defining value definitions suggested by Cohen (2013) is seen.

In addition to the distinctions noted in the value definitions by the stakeholder groups identified, clear divisions were seen in the communities with respect to heritage conservation in the town, and the level of contribution of the various stakeholders to resource conservation efforts. Conservation of heritage resources was found to be focused in the Town area with conservation organisations and members of these organisations primarily based in this area. This creates a disconnect between Township stakeholders and current heritage resource conservation, perpetuating the unequal participation of Township stakeholders in conservation efforts by organisations. This supports findings by Chirikure *et al.* (2010) stating that local communities are not active in conservation efforts. This creates a situation where stakeholders are spectators of resource conservation, in cases where awareness of such conservation efforts exists at all (Ndoro *et al.,* 2008).

Effective stakeholder engagement for conservation also relies on adequate representation of stakeholders in decision-making bodies such as the conservation organisations mentioned in this study. The unequal participation highlighted amongst the Township negatively impacts the move towards achieving sustainability. Sustainable communities require greater integration in heritage conservation and decision-making in this regard, in order to ensure that efforts taken are effective and far reaching. Caffyn and Jobbins (2003) also mention the importance of incorporating stakeholders in the establishment of plans before plan implementation. This emphasizes the importance of stakeholder participation in all stages of decision-making and management plan development.

Participation of communities is important in heritage management and the success of conservation efforts (Yung *et al.,* 2011). Through greater participation and inclusion of Township stakeholders in conservation actions in the town of Wakkerstroom, the needs of various stakeholders, the differences in values and heritage definition can be addressed and incorporated into future conservation plans (Richards *et al.,* 2004). Creating this

representation facilitates a form of consultation amongst stakeholders and allows the benefits of stakeholder interaction to be realized allowing the move towards sustainability in heritage conservation (Martin and Sherlington, 1997). In order to enhance the value of including stakeholders and stakeholder perceptions into management for sustainability, the study could be repeated with a larger sample size of stakeholders, and further division of stakeholder groups according to interests in heritage resource conservation in the town. This would allow for a greater understanding of what informs perceptions, and therefore how to address them. Further studies could also consider the link between stakeholder perceptions and age groups to investigate the link between stakeholder ages and perceptions in the town of Wakkerstroom.

Implications of stakeholder perceptions for management and sustainability

Incorporating the perceptions of local community stakeholders is important for successful efforts towards sustainable development and sustainable communities to be implemented (Gursoy *et al*., 2002). Stakeholder perceptions in the study further indicated a disconnect between communities highlighting a lack of communication amongst the two communities.

Communication is an important step towards sustainable development, and effective heritage resource conservation (Aas *et al.*, 2005). A lack of communication has been linked to hampered development in tourism and other developmental activities where towns are concerned (Peters, 1999). Effective communication of heritage conservation related plans and conservation issues in both the Township and Town area would facilitate greater community cohesion and facilitate better participatory engagement, contributing to the aim of a sustainable town, and sustainable development (Keitumetse, 2011).

The issue of communication can be linked to the low levels of education in the Township area. Low levels of education and school completion have implications for communication, resulting in a decreased ability to, amongst other things, communicate in the English language and engage with written sources of information, as skills including those of reading and English language comprehension are not acquired. In order to ensure progression towards a sustainable town where communication is concerned, it is vital that the language differences amongst the two stakeholder communities are taken into account. The incorporation of more languages in information communication and transfer (i.e. more of the local languages including isiZulu and Seswati) where heritage conservation is concerned is vital for the success of conservation efforts and effective management.

A lack of awareness of heritage resources and their importance by stakeholders in the Town and Township area s of Wakkerstroom was also highlighted by the study. This could again be attributed to poor communication of this importance and the advantages of conservation for all members of the town. Explicit presentation of these benefits could result in a greater appreciation and participation in conservation efforts. The value of public education has been recognized and should be incorporated in this regard (Azman *et al*., 2010). Education influences the behavior of people and actions taken towards conservation (Azman *et al*., 2009). Awareness and understanding of heritage have been recognised as important factors to effective conservation as these facilitate value appreciation and subsequently preservation for future generations (UNESCO, 2012).

A balance between the need for development in the town of Wakkerstroom and the need for heritage conservation is also highlighted by threats such as those of mining mentioned by stakeholders. While some Township stakeholders viewed mining as a source of much needed job creation and development, damage to the natural environment including the wetland was mentioned by other stakeholders. This creates a conflict between development and heritage protection and presents a challenge to management (Chirikure *et al.*, 2008; Chirikure, 2013).

Incorporating stakeholders into management plans for effective heritage resource conservation

In order to address the issues mentioned above, heritage management plans incorporating heritage conservation are an important tool, essential to effective conservation of valued aspects of heritage including the resources identified. Management plans act as a guide in putting measures in place for heritage conservation through delegating actions to the actors identified in the form of stakeholders. In order to achieve sustainable towns, it is important that all stakeholders, and subsequently actors play the roles assigned to them. As the center and overarching body of management, the municipality has a role in delegating and coordinating the functions of management within the town of Wakkerstroom. Management plans must incorporate large and small scale actions, taking into consideration time frames, with short and long term goals set out for improving and implementing conservation in the town (Cleere, 2010).

In achieving effective heritage conservation through stakeholder engagement, responsibilities should be clearly stipulated within the plan. Plans should therefore be divided into cohorts comprised of responsibilities allocated to existing conservation organisations, and where

necessary, making provisions for organisations that are not yet in place. An example of this is the organization suggested, targeted towards cultural heritage resource protection, which, unlike natural heritage is not yet provisioned for by town organisations. Further provision for the cultural heritage resources in the town is important as the study recognized a number of cultural heritage resources in the town, showing that a substantial proportion of the value of the town lies in these resource. This will improve the state of heritage resource conservation in the town as a whole. Further support of NGO's in the town by the municipality in conjunction with the Mpumalanga Heritage Resources Authority is also important to ensure that current conservation is continued. Management plans should also target communities at ground level in addition to addressing management issues at higher organisational and government levels. Further studies could look into incorporating municipality perspectives into the study, and reconciling these with the perceptions of other stakeholders identified.

The management plan component of monitoring and evaluation will be particularly important in moving towards sustainable communities and a more sustainable town in Wakkerstroom. This is because monitoring and evaluation provide a means for adaptation of plans, refocusing problems and allowing for new solutions to be developed, a necessary occurrence when considering sustainability.

Conclusion

The heritage resources in Wakkerstroom are diverse and worth conserving. The conservation of heritage resources is important in ensuring sustainable use and availability of heritage resources for future generations. Stakeholder engagement and community participation is an important component in effective management and conservation action execution. Addressing challenges to management and incorporating stakeholder perceptions into management will result in more effective management actions. Positive perceptions are necessary and should be one of the aims of management. The municipality has the responsibility of ensuring that management activities involving conservation are coordinated and provisioned for through directly or through delegation and support of other existing organisations, and those to be established in the town. In this way, improved conservation through improved management will result in sustainable growth associated with heritage, and facilitate development and sustenance of sustainable communities.

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Appendix 1: Questions for stakeholders of heritage resources

Is it okay to record this interview? (Check that it is okay with the participant that the interview is recorded).

Just as a reminder, this research aims to look at the perceptions towards natural and cultural heritage in Wakkerstroom Mpumalanga, as well as to find out about current management practices in order to suggest guidelines for heritage resource management.

(Thank the participant for meeting with you, and for their time).

1. Could you please tell me how old you are?

2. Would you mind telling me about your educational background? Did you do any post school qualifications?

3. How long has your family lived in Wakkerstroom?

4. What does heritage mean to you?

5. Which heritage resources are most important to you?

6. Why are heritage resources important to you?

7. What heritage activities do you participate in?

Which heritage sites do you visit most?

8. Would you like these resources to be protected?

9. Are you involved in heritage protection? If so, how?

10. How did you learn about the heritage resources you visit in your area?

11. Are there heritage practices in particular sites that are not yet protected or managed?

Why are these sites important?

12. Do you think there are any threats to your heritage resources?

What are they?

Appendix 2: Questions for managers of heritage resources

Is it okay to record this interview? (Check that it is okay with the participant that the interview is recorded).

Just as a reminder, this research aims to look at the perceptions towards natural and cultural heritage in Wakkerstroom Mpumalanga, as well as to find out about current management practices in order to suggest guidelines for heritage resource management.

(Thank the participant for meeting with you, and for their time).

1. Could you please tell me how old you are?

2. Would you mind telling me about your educational background? Did you do any post school qualifications?

3. How long has your family lived in Wakkerstroom?

Do you have direct family history with the heritage resources of Wakkerstroom?

4. What does the term "heritage" mean to you?

5. Which heritage resources are most important to you?

6. Why are heritage resources important to you?

7. Please can you tell me about any management projects, involving heritage resources, which are functional in the Wakkerstroom area?

8. What are the challenges experienced with heritage resource management in Wakkerstroom?

9. Are local communities involved in management or management actions in Wakkerstroom?

How are they involved?

How important is community involvement in the management of heritage resources?

Why?

10. Are there currently strategies in place for the community to learn more about the heritage in the area?

How important do you think educating the community on heritage resources is?

Do you have any suggestions on how this can be done?

11. Are there threats you perceive to your heritage/ the heritage resources in Wakkerstroom that would prevent having it passed to future generations?

12. Are there some heritage resources that receive more attention than others in terms of protection?

13. Are there heritage sites, or practices in particular sites, which are not yet protected for heritage management in Wakkerstroom?

Are there future plans to include these sites in management plans?

Why are these heritage resources significant?

Appendix 3: Ethical clearance certificate

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

SCHOOL OF ANIMAL, PLANT AND ENVIRONMENTAL SCIENCES ETHICS COMMITTEE CONSTITUTED UNDER THE UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: HA1905**
PROJECT TITLE	Investigating stakeholder perceptions towards natural and cultural heritage for the development of sustainable resource management guidelines.
INVESTIGATOR	Reitumetse Sethaba
SCHOOL/DEPARTMENT OF INVESTIGATOR	Animal, Plant and Environmental Sciences
DATE CONSIDERED	19 July 2019
DECISION OF THE COMMITTEE	Approved unconditionally
EXPIRY DATE	Date of submission of the project report
ISSUE DATE OF CERTIFICATE 19 July 2019	**CHAIRPERSON** _____ (Dr Shalini Dukhan)

cc: Supervisor/s : Prof. Mary Scholes

DECLARATION OF INVESTIGATOR

To be completed in duplicate and **ONE COPY** returned to the Chairperson of the School ethics committee.

I fully understand the conditions under which I am are authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.

_____ 23/07/2019

Signature **Date**

Appendix 4: Consent form regarding research on investigating stakeholder perceptions (managers)

Reitumetse Sethaba has informed me about her research project on perceptions about the importance of heritage resources and their management in Wakkerstroom Mpumalanga. She has told me that:

- The interview is voluntary.
- I do not have to answer questions I feel uncomfortable about answering.
- I can stop the interview at any point.
- My name will not be mentioned in any research documents, but that I might be identifiable

due to my position being mentioned in the report.

I hereby agree to be interviewed by Reitumetse regarding heritage resources in Wakkerstroom.

I agree/do not agree to have the interview recorded using a tape recorder. (Please circle one)

Signed……

Date……..

Appendix 5: Consent form regarding research on investigating stakeholder perceptions (general stakeholders)

Reitumetse Sethaba has informed me about her research project on investigating the perceptions towards natural and cultural heritage in Wakkerstroom Mpumalanga. She has told me that:

- The interview is voluntary.
- I do not have to answer questions I am uncomfortable answering.
- I can stop the interview at any point.
- My name will not be stated.

I hereby agree to be interviewed by Reitumetse regarding heritage resources in Wakkerstroom.

I agree/do not agree to have the interview recorded using a tape recorder.

(Please circle one)

Signed……

Date……..