

Draft ESTUARY MANAGEMENT

For the

HEUNINGNES ESTUARY



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March 2009

Prepared for:



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DRAFT ESTUARY MANAGEMENT PLAN
HEUNINGNES ESTUARY

Submitted for:
Review

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GLOSSARY OF ABBREVIATIONS and ACRONYMS

ABI	Agulhas Biodiversity Initiative
CAPE	Cape Action for People and the Environment
CFR	Cape Floral Region
CITES	Convention for the International Trade in Endangered Species
CSIR	Council for Scientific and Industrial Research
DEAT	Department of Environmental Affairs and Tourism
DWAF	Department of Water Affairs and Forestry
EC	Electrical Conductivity
EMP	Estuary Management Plan
GEF	Global Environment Facility
HROA	Heuningnes Riparian Owners Association
IDP	Integrated Development Plan
MCM	Marine and Coastal Management
MLRA	Marine and Living Resources Act
MPA	Marine Protected Area
NBSAP	National Biodiversity Strategy
NEMA	National Environmental Management Act
NGO	Non Government Organisation
NWA	National Water Act
ODM	Overberg District Municipality
RHU	River Health Unit

RQO	Resource Quality Objectives
SANParks	South African National Parks
SDF	Strategic Development Frameworks
SMA	Special Management Area
TDS	Total Dissolved Solids
UNDP	United Nations Development Program

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1 INTRODUCTION

HillLand Associates have been appointed by the Cape Estuaries Program to develop an Estuary Management Plan for the Heuningnes Estuary. This draft Environmental Management Plan is the third in a series of reports developed regarding the management of the Heuningnes estuary.

There are certain key components of the Heuningnes Estuary management plan which have been addressed as part of this EMP. These are as follows:

- **Situation Assessment and Evaluation** (This has taken place and is attached to **appendix 2** of this report)
- The setting of a **Vision** and **Strategic objectives**
- The evaluation of **Management Strategies** to achieve the vision and objectives
- The preparation of an **Estuarine Zonation Plan** and the establishment of **Operational Objectives**
- The identification of **Management Action Plans**
- **Monitoring and Research**

Apart from the key requirements of achieving the vision and strategic objectives, the management strategies determined in this management plan are prioritised to ensure that limited financial and human resources are utilised as effectively as possible.

It is important to remember that the EMP is a living document that will and must change with time to be able to face management issues effectively.

No plan will be effective if the people who are involved do not believe in its merits. Therefore the authorities and land owners in the system should form part of the team creating and applying the plan.

Figure 1 shows the Heuningnes Estuary management area in relation to its catchment. It is critical to note the importance of the various inland water bodies that occur within the catchment, but which fall outside the area of the management plan. The importance of these water bodies to the continued functioning of the estuary and the importance of the estuary to these water bodies is an item that will require further research.

2 Part 1- BACKGROUND

2.1 *Design process of the Estuary EMP*

Step one :

- Creation of Situation Assessment Report
- Public consultation process
- Evaluation of situation assessment and public input

Step Two:

Estuary management plan for Heuningnes River estuary

After finalization of objective 1, the Situation Assessment Report (Report 1), the following stage (Objective 2) was to produce an Estuary Management Plan (EstMP) for the Heuningnes River Estuary. The Estuary Management Plan (EstMP) culminated from various stakeholder and authority engagements, and the Situation Assessment Report.

The proposed EstMP must be seen as a living document that must be adapted as new information becomes available and or management priorities change.

2.2 *Stakeholder Engagement*

In order to provide a plan that is suitable to all users of the estuary, the input from all affected stakeholders has been an important aspect of this process.

Various governmental bodies were identified and invited to an Authorities meeting with the aim of introducing the concept to them and garnering support. The meeting also helped to identify additional parties, especially NGO's.

Advertisements were placed in the local media calling for affected stakeholders to attend a secondary meeting. Those identified during the initial round of meetings and the registered authorities were also requested to attend. The meeting was held on the 13th December 2007 at the Overberg District Municipality offices with the respondent stakeholders to introduce them to the concept.

The input to date that has been provided by the stakeholders; especially the adjacent landowners have provided an important basis for the proposed EMP. The landowners have been very instrumental to date in retaining the rural nature of the estuary.

The Situation Assessment was subject to input from all the relevant stakeholders. Follow up meetings and interviews were held with the Agulhas Biodiversity Initiative (ABI), the Heuningnes Riparian Owners Association (HRA) as well as various Cape Nature Staff during 2008.

The Draft EMP (version 1) was subjected to stakeholder input (2008) prior to the compilation of this document for implementation.

2.3 ***Legislative Review***

A review of all the legislation that can potentially inform the management actions has been undertaken. This is summarised in the Situation Assessment (appendix 2) and relevant management actions are detailed later in the report.

3 THE HEUNINGNES ESTUARY AND LOWER RIVER SYSTEM

3.1 ***Situation Assessment and Evaluation***

The Situation Assessment aims to provide an overview of the current status of the Heuningnes Estuary, identify areas of deficiency in terms of management and provide a platform for the Estuary Management Plan (EMP) envisaged.

The situation Assessment for the Heuningnes Estuary is attached as *appendix 2* to this document.

3.2 ***Threats to the Estuary***

The literature study revealed a number of threats facing estuaries in general. As part of the situation assessment, a number of additional threats requiring management intervention were also identified. Details on the management of threats are detailed further in the section on management strategies and management action plans detailed below. The threats were identified as follows:

1. Environmental Hazards;
 - Floods;
 - Increase in storms at sea; and
 - Climate change.

2. Human Activities and Development;
3. Land Use and Infrastructure Development;
4. Water Quality and Quantity; and
5. Exploitation of Living Resources.

4 THE HEUNINGNES ESTUARY MANAGEMENT PLAN

4.1 *Vision*

The vision for the estuaries of the larger CFR is;

"The estuaries of the CFR will continue to function as viable systems which are beautiful, rich in plants and animals, attract visitors, sustain our livelihoods and uplift our spirits"

This broader vision highlights the following aspects of the estuaries in the CFR which require proper management action plans in order to enhance the benefits;

- The contribution of our estuaries to our spiritual well being;
- The role that estuaries play in our economic welfare;
- Our dependency on the goods and services that our estuaries provide;
- The importance of the biophysical attributes of our estuaries; and
- The value of maintaining biodiversity and ecosystem function of our estuaries so that we can derive these benefits from our systems.

The Vision for the Heuningnes Estuary was determined during the situation assessment with input from all stakeholders. The vision for the Heuningnes Estuary is;

"The sustainable, non-commercial management of the Heuningnes Estuary as a near pristine RAMSAR site, preserving and promoting the rich biodiversity, fish recruitment, controlled eco-tourism, sustainable agriculture, natural beauty and sense of place of the estuary for the benefit of present and future generations."

Apart from the extensive stakeholder engagement involved in the formulation of the above vision, the vision for the estuaries of the larger Cape Floral Region (CFR) was also taken into account.

4.2 *Mission*

To manage the Heuningnes Estuary in an ecologically sustainable way, by preserving its rich biodiversity and natural beauty.

4.3 ***General Strategic Objectives and Management Targets***

The strategic objectives are qualitative statements defined in the vision and have been developed in consultation with all relevant stakeholders. In addition, to maintain, and where necessary restore the natural resources and biodiversity of "Our Estuary" in harmonious coexistence with suitable and responsibly managed social and economic progress.

4.4 ***Strategic Objectives for the Estuaries of the CFR***

The following strategic objectives are already defined for the estuaries of the CFR.

Living resources:

- Achieve targets for ecosystem biodiversity and health in terms of the long-term persistence of habitats, species, community structure, biomass and functioning by 2015.

Water quantity and quality:

- Determine, implement, monitor and review RQOs (taking into account public health) in order to maintain or restore estuarine structure and function in the best attainable state for five priority estuaries within the CFR by 2010.

Land-use and infrastructure planning:

- Define estuarine areas, assess their current status and values and formulate appropriate integrated management plans to regulate development and other activities impacting on them, with particular reference to cumulative impacts, by 2008 (focusing on mechanisms).

Institutional and management structures:

- Cooperatively manage¹ estuaries through relevant institutions of management comprising appropriate spheres of government and civil society and according to appropriate management plans by 2010.

Climate change:

- Minimise the detrimental impacts of predicted climate change by 2010 through:
 1. taking a long-term precautionary approach to infrastructure development and water-resource planning;
 2. influencing land management in upper and middle catchments to reduce impacts on estuaries; and
 3. Promoting long-term sustainable livelihoods through estuarine management that minimises risks.

Education and awareness:

- Generate education and awareness regarding CFR estuaries by 2010, having:
 1. contributed to integrated, collaborative and informed action and decision making regarding estuaries;
 2. contributed to a sustainable quality of life;
 3. promoted good management practices² that will sustain healthy estuarine functioning;

¹ Cooperative management – as defined by the CFR to include the various role-players within the Estuary management area in accordance with an approved Estuary Management Plan.

² Management practices to include catchment management activities such as alien invasive plant clearing.

4. raised awareness of the intrinsic value of estuaries and developed a sense of ownership of estuaries not only among local communities but also throughout South Africa; and
5. Raised awareness of and insight into the legal context and obligations of all levels of government (national, provincial, local and community).

4.5 ***Strategic objectives for the Heuningnes Estuary.***

Many of the strategic objectives for the Heuningnes estuary are adapted directly from the strategic objectives for the estuaries within the CFR.

Living resources:

- Achieve targets for ecosystem biodiversity and health in terms of the long-term persistence of habitats, species, community structure, biomass and functioning by 2015.

Water quantity and quality:

- Determine, implement, monitor and review RQOs (taking into account public health) in order to maintain or restore estuarine structure and function in the best attainable state for five priority estuaries within the CFR by 2010.

Land-use and infrastructure planning:

- Define estuarine areas, assess their current status and values.

Institutional and management structures:

- Cooperatively manage estuaries³ through relevant institutions of management comprising appropriate spheres of government and civil society and according to appropriate management plans by 2010.

Climate change:

- Minimise the detrimental impacts of predicted climate change by 2010 through:
 1. taking a long-term precautionary approach to infrastructure development and water-resource planning;
 2. influencing land management in upper and middle catchments to reduce impacts on estuaries; and
 3. promoting long-term sustainable livelihoods through estuarine management that minimises risks.

Education and awareness:

- Generate education and awareness regarding the Heuningnes Estuary, specifically with regards to its international importance for water fowl as well as its importance as a nursery for fish.

Agricultural Activities

- Maintain and promote the viability of the current agricultural activities within the estuary management area, while ensuring that all agricultural activities in the catchment area are not detrimental to the functioning of the estuary⁴.

³ As proposed by this EstMP through the use of Estuary Management Forum

⁴ Specifically the ploughing of lands within the riverine buffer area. Also the strategic conflict between mouth management, climate change and the potential salinity build up in the agricultural lands.

Managing conflicting objectives

- A strategic overview will be required in order to manage the conflicting strategic objectives. A potential conflict is identified between the following: Climate change, Agriculture, Estuarine functioning and Catchment management.
- The conflict is viewed as potentially occurring as follows - rising sea level will push the salinity profile further up into the catchment having an impact on the various inland water bodies. Reduced rainfall and freshwater input within the catchment will further increase the salinity of the inland water bodies. Historically, before the dune stabilization and open mouth maintenance policy, it is anticipated that the mouth would have been closed for long periods through the movement of the large dune field, resulting in the flooding with fresh water of large sections of the catchment – this could be the historic origin of the inland wetland systems. With a permanent open mouth, these areas are no longer subjected to periodic flooding and are drying out and becoming more saline (increased due to water impoundment and abstraction in the catchment). An increase in sea level together with decrease in rainfall could result in the low lying agricultural lands becoming increasingly saline and unsuitable for production. This may require the open mouth strategy to be researched with a view towards deliberately closing the mouth to flood the catchment with fresh water and reduce the salinity build up within the catchment (fresh water flushing). Further hydrological modelling and research in this regard may become an economic reality. The estuarine system that has developed and adapted over the period of time that the mouth has been maintained in its open state will be influenced through any changes to this open mouth policy.

4.6 ***Strategic Objective***

Key objectives in achieving the above:

The following key objectives have been identified as the corner stone to the achievement of the strategic objective and ultimate vision.

- a. Find innovative ways to source funding for the management of Heuningnes Estuary efficiently
- b. Monitor the estuary and water supply wetland system to identify threats early enough to ensure sustainable management of the estuary and feeding wetlands⁵.
- c. Maintain excellent communication lines between all role players to ensure sound co-operative management.
- d. Establish a realistic riparian setback line in conjunction with land owners in order to protect riparian vegetation and to prevent detrimental agricultural practices on land adjacent to the river.
- e. Establish an ecological corridor along the river banks in conjunction with riparian owners.
- f. Create a check list of detrimental practices and acceptable agricultural management of land in the catchment area (particular attention should be given to wetland management on private land)

⁵ These catchment wetlands do not all fall within the core and secondary boundaries of the Heuningnes Estuary – however, the management principles should cover these areas too.

-
- g. Ensure proper management of the estuaries water through meaningful input to the Heuningnes River Catchment Management Agency (CMA). Ensure protection of aquatic life to optimum sustainable levels in line with improved water resources, whilst also eliminating alien invasive species.
 - h. Eliminate existing activities that are damaging to the environment and against policy – Clearing of indigenous riparian vegetation, illegal fishing and bait collection, etc..
 - i. Eradicate, and assist private landowners to eradicate all invasive alien vegetation within the geographically defined estuary boundaries and rehabilitate indigenous flora and promote alien clearing within the catchment area of the Heuningnes River as this impacts on the estuary.
 - j. Protect indigenous fauna and flora associated with the estuary waters and the extended wetlands feeding into the estuary. Encourage private landowners and visitors to take hands with the authorities in this objective. Devise strategies to instil a respect for and create an interest in the local fauna and flora.
 - k. Clearly define the geographic boundaries of the Heuningnes River Estuary (Land, Sea and Air) with particular attention to influences of rising sea levels.
 - l. Establish a competent Estuary Management Forum (EMF) and an estuary management protocol. The EMF should have the required authority and resources to undertake and enforce its allocated responsibilities and which will be held accountable for its performance. Compliance staff should have delegated powers from various departments and local authorities through an MOU.
 - m. Allow social and economic development within the defined estuary space, only to the extent that it co-exists in terms of prioritised estuary imperatives. Encourage environmentally friendly development and business and maintain sound building design and techniques (energy efficient and water wise).
 - n. Develop and implement local bylaws that will enable the management authority to give effect to the EstMP objectives and manage its allocated responsibility.
 - o. Develop an efficient law enforcement (compliance monitoring) capability to ensure that both proactive and consequent steps are taken in support of the management authority's duties and objectives.
 - p. Develop and implement an ongoing intensive public awareness campaign.
 - q. Establish a voluntary participating river forum of public stakeholders that are sincerely committed to the Vision and Mission.
 - r. Build on and embrace the existing commitment of the riparian owners to the commitment to conserve the Heuningnes system.
 - s. Establish a priority list of problems and an interim process to identify, monitor, deal with and prevent undesirable and unsuitable activities, whilst the Heuningnes Estuary Management Plan and enabling structures are being put in place.
 - t. Determine the existence and number of title deed restrictions existing that could have an influence on the estuary and reserve management.
 - u. Check cadastral boundaries of the properties surrounding the estuary and determine the influence of these boundaries on estuary and reserve management. *Particular attention should be given to boundaries on the river.*
 - v. Determine and preserve all agreements with riparian land owners.

5 The Management Programme

5.1 *Management Strategies*

Based on the Vision and Strategic Objectives the following management strategies should be implemented.

A large body of information already exist that can be used to expedite the implementation of management measures (see Cleaver & Brown, 2005).

Existing institutional management strategies should be incorporated where appropriate.

Management strategies will have to be refined through collaboration with stakeholders as required from time to time, in accordance with threats identified through the ongoing monitoring proposed.

- a. Ensure the establishment of the EMF with the required law enforcement capability that will enable both proactive and consequent steps to be taken in support the management authorities duties and objectives.
- b. Negotiate permanent representation from the EMF on the appropriate River CMA to communicate the freshwater requirements of the Heuningnes River Estuary.
- c. Embrace the already established HROA and the ABI in order to get the larger catchment of the estuary under sensible management beneficial to both the land owners and the Heuningnes estuary
- d. Negotiate permanent representation of the Nuwejaars and Kars River catchment areas as part of the Heuningnes EMF, as these catchment area are critically important to the ecological estuary functioning.
- e. Identify and propose regulations to authorities to ensure elimination of activities that are damaging to the environment.
- f. Ensure planning, prioritization and eradication of all invasive alien vegetation within the geographically defined estuary boundaries (Coastal Protection Zone - CPZ), as well as in the catchment areas, including rehabilitation of indigenous flora especially surrounding the wetland areas and along riparian corridors.
- g. Ensure the creation of regulations and actions to protect indigenous fauna and flora associated with the estuary waters and its defined surrounds. In particular, attention should be given to the preservation of identified red data species.
- h. Define and map the geographic boundaries of the Heuningnes River Estuary (Land, Sea and Air) in terms of the National Environmental Management: Integrated Coastal Management Act (24 of 2008). The definition of the boundaries have to be revisited to determine their extent and influence on management plans To ensure social and economic development within the defined estuary area or Coastal Protection Zone (CPZ), only to the extent that it co-exists in terms of prioritized estuary imperatives.

- i. Ensure that the relevant bylaws are created that will enable the management authority to give effect to the EstMP objectives and manage its allocated responsibility. Train staff and management committee members in the proper and effective application of the promulgated regulations and bylaws.
- j. Ensure the development and implementation of an ongoing intensive public awareness campaign and environmental education program. (It is suggested that the Estuaries program develop a set of generic programs and information sets to use as background for all estuaries - Always open, periodically open etc).
- k. Ensure that an interim process is created (by the Riparian owners, CapeNature, DEADP, SANParks and local authorities as well as Organised agriculture.) to identify, monitor, deal with undesirable and unsuitable developments and activities, whilst the Heuningnes Estuary Management Plan and enabling structures are being implemented. It is suggested that an experienced consultant be employed to guide the authorities through the first year.
- l. Ensure that all agricultural and housing developments in the catchment area are planned to include energy efficient and water wise methods as well as sound waste management practices.
- m. Develop a suitable riverine setback line in conjunction with riparian owners, agriculture and Cape Nature to prevent unsuitable development and negative agricultural practices that may influence the estuary.

5.2 ***Plan Implementation***

5.2.1 **Bioregional Planning Categories**

The Bioregional Planning categories were used as the framework for human activities, requirements and individual rights within the Heuningnes Estuary greater area. The Bioregional Planning Framework (Denis Moss, 2003) serves as a framework within which a consensus approach to “managing” our resources in a sustainable manner can be undertaken, and where a balanced integration of conservation and land use practices can take place.

Two broad existing Bioregional Categories are currently relevant to the categorising of the estuary management area, namely,

(1) **“Spatial planning Category A: Core Areas,**

Sub-Category A.b: Other Statutory Conservation Areas – Statutory Conservation Areas such as Provincial Nature Reserves and registered Private Nature Reserves”, and

(2) **“Spatial Planning Category C: Agricultural Areas,**

Sub-Category C.b: Intensive Agricultural Areas ”.

In order to facilitate appropriate bioregional planning however, the following categories are now also included in the Heuningnes Estuary Management Plan, in order to achieve the management plan objectives.

Spatial Planning Category B: Buffer Areas

Sub-Category B.b: Private Conservation Areas

These are areas where conservation is practiced but where the area has no formal conservation status. The areas of intact natural vegetation along the river would fall into this category.

Sub-Category B.c: Ecological Corridors

Areas with a high prevalence of natural vegetation or where reintroduction of indigenous flora could be undertaken to provide a network of contiguous natural corridors through the region. –The areas of intact natural vegetation within the riparian corridor even if they are utilized for extensive agriculture could fall into this category.

Sub-Category B.d: Rehabilitation Areas

Areas which, not with standing significant modification / degradation, justify to be rehabilitated to their natural state to allow for linking corridors. The primary purpose of this category is to repair environmental degradation, increasing buffer areas and linking areas of high conservation value. – The areas of intensive agriculture within the riparian corridor would fall into this category.

The above categories are those that are directly relevant to the future management of the greater Heuningnes Estuary system and are not in conflict with current and future planning of IDP documents, figure 2 indicates these areas.

5.2.2 Estuarine Zonation Plan & Operational Objectives

5.2.2.1 Estuarine Zonation Plan

An Estuary Zonation Plan (EZP) for the Heuningnes River Estuary was established through a public participation process as well as scientific evaluation where the requirements and rights of all individuals were taken into consideration with due consideration of the physical and environmental restraints existing in the estuary.

In addition, estuaries can be zoned for different land use activities. These activities include recreational, development, recreational fishing activities and non-consumptive activities (e.g. Swimming, hiking). These zones must ensure no conflict with the Vision and Mission and Strategic Objectives as defined for the Heuningnes Estuary listed above.

The following management zones were identified for the EZP, which are **primarily sensitive ecotones which transcend bioregional category boundaries**, and require protection. These zones are spatially indicated over the fine scale mapping (figures 3 & 4.):

a. Coastal Protection Zone (CPZ)

This is an area extending 1km away and inland of the high water mark of the sea including estuarine waters. This zone is in line with the intent of the new National Environmental Management: Integrated Coastal Management Act (24 of 2008) – published in February 2009 – still to be proclaimed as coming into effect by the Minister.

b. No-go areas & No disturbance zones (including the sensitive eelgrass habitat)

These areas have been highlighted as sensitive habitats that are vulnerable to excessive human movement and activities. These areas can occur in any of the bioregional categories. These areas should not be disturbed in any way by recreational or other activities. Most of the eelgrass areas are in the marine dominated zone of the estuary.

c. Development areas

The development area is limited with some scope for further development in terms of the IDP and SDF process that must be informed by the EstMP. The development area is primarily the existing CapeNature's De Mond infrastructure area. Any further development on this property is subject to a title deed restriction which limits development. Relaxation of this title deed restriction is required from De Mond Farm (Pty) Ltd, the owner of Portion 1 of the farm 269 Bushy Park. Use in this area is subject to agreements reached in terms of the title deed restriction which limit the number of people visiting the De Mond Reserve to a maximum number of 70 people at a time, no braai facilities, a maximum of 6 picnic tables and parking for 20 cars⁶.

d. High use area

The high use area is contained around CapeNature's De Mond office area.

e. Sand banks

Sand bank habitat is well represented in the Heuningnes Estuary. This important habitat for invertebrate fauna is one of a very limited number of open estuaries that can serve as a breeding and re-stocking ground for important bait organisms. Disturbance of this habitat should be restricted.

f. Mud banks

Mud banks are limited and readily accessible. Due to the sensitive nature of mud banks access should also be restricted.

g. River – Estuary Interface

The River-Estuary Interface (REI) area is where incoming marine water wedges in under freshwater flowing downstream. The REI moves up and down with the tidal exchange and also moves up and down in the estuary according to seasonal freshwater input variations, this extends to approximately 12 km upstream.

h. Freshwater Dominated Reach

The freshwater dominated reach (FDR) extends from the inland side of the REI to the upper freshwater reaches with no tidal influence. Representative sections of this reach must be protected. "No-go" areas located in this river reach are important from a conservation point of view. In the Heuningnes the FDR is on

⁶ See annexure 3 for the legal opinion and title deed restriction

private land and protection of this region should be negotiated between the relevant parties. It is important to note that there are various wetlands/pans that are critical to the river and its water flow that fall outside the estuary management area, but which should at all costs be protected. If possible a long term objective should be to extend the area of the EMP to include these water bodies.

i. Marine Dominated reach

The marine dominated reach extends from the REI to the sea. The ebb and flow habitats of this reach will be dominated by tidal action where salt marsh, sand and mud bank habitats occur. "No-go" areas located in this river reach are also important from a conservation point of view. This area extends to approximately 2km inland of the river mouth.

j. River - Agriculture Setback line

A realistic setback line along the river banks, created to protect riverine thicket vegetation and wetlands. This setback line will also serve as an ecological biodiversity corridor. This setback line needs to be formally agreed with the relevant land owners, however for the purpose of this zonation plan the various statutory lines and buffers have been indicated. These being as follows:

- 32 m buffer along the edge of the river/estuary and around any wetland, saltmarsh or other aquatic dominated habitat (any construction or disturbance activity within this zone requires Environmental Authorisation in terms of GN 386, NEMA);
- 100m buffer from the HWM of the sea and estuary (any disturbance, construction, movement of sediments within this zone requires Environmental Authorisation in terms of GN 386, NEMA);
- 1000m buffer Coastal Protection Zone – this area is likely to be defined in terms of NEM:ICMA 24 of 2008) – authorisation for certain activities is likely to be required once the relevant regulations in terms of the new act are published.
- The 5m contour – as indicated within the NEM:ICMA 24 of 2008 (the 5m contour information is not available but should be sourced and recorded on the plan).
- The 50m buffer line as suggested by riparian owners.

Figure 5 provides a graphic representation of these various buffers and appendix 4 provides the legislative information relating to activities within these areas.

k. Rehabilitation areas

Rehabilitation areas within the estuary management area are largely areas where alien invasive vegetation needs to be targeted for removal and other areas where the natural riparian or salt marsh / wetland vegetation has been lost in the river buffer due to agricultural practices. These are areas where, should the land use change, every effort should be made to reinstate the natural vegetation which will assist in reducing the negative impacts on the estuary through increased sediment loss and river bank destabilization. The rehabilitation area should follow at least the 32m setback line from the edges of the wetlands.

l. Existing recreational activities

Existing recreational activities within the estuary are limited due to the inaccessibility of the estuary to the general public. Access is limited through the largely private ownership of the farms along the river and the strict carrying capacity of DeMond Provincial Nature Reserve at the mouth. Use is currently limited to swimming, hiking, sport fishing and canoeing. Activities such as motor boating, jet ski, wind and kite surfing etc are not seen as compatible with the ecological sensitivity of the estuary and should therefore not be permitted.

m. Marine resource use zones

The use of marine and estuarine resources within the estuary is currently not controlled, bait collecting occurs within the mudflats and importing of live bait from other systems for fishing both surf, shore and estuarine occurs. A policy of no importing of any living bait into the system should be implemented as well as a strict "no take" policy with respect to bait collection. This will limit the disturbance to the mudflats and other areas where bait collecting results in disturbance of the estuarine system.

5.2.3 **Operational objectives**

The operational objectives are quantitative, measurable standards, target values, limits or thresholds of potential concerns relevant to the different zones and activities for the EZP.

a. Coastal Protection Zone (CPZ)

The full extent of the CPZ must be declared a “special management area” in terms of the National Environmental Management: Integrated Coastal Management Act (NEM:ICMA). This area extending 1 km seawards and inland from the high water mark of the sea & estuary must be treated as a special rules area. All activities within the CPZ must adhere to the set criteria. Heuningnes system CPZ will extend over private land, and any actions here should be negotiated with the land owners in accordance with the Act and under the guidance of the EstMP (see figure 5).

b. No-go areas / No disturbance zones

These highly sensitive areas should not be disturbed in any way. No activity that can leave any footprint or effect must be allowed. No beaching of boats must be allowed; no access of people must be allowed for any reason; no bait collection must be allowed; no anchoring of boats must be allowed as this will damage the sensitive bottom habitat. The only permissible activity is “no-impact” angling. Permission to access these areas may be granted for emergencies and management only. Control of this will need to be in the form of informational signage, detailed leaflets attached to the permits and interpretational boards at the various points. Riparian owners will need to ensure that the information is passed on to the users of their land and access rights to the water.

c. Development area

Although the Heuningnes area is not presently considered for housing development, the financial imperative of coastal development is bound to bring this area in focus when other areas suitable for development get saturated. Currently the Heuningnes is one of the few estuaries that is not encroached upon by housing development or the pressure for such development.

It is therefore sensible to ensure that provision is made to regulate any possible future development (Housing, as well as agricultural).

Any future development must only be allowed within the demarcated areas for development as determined by the SDF. The SDF must recognize the sensitive nature of the CPZ, and be informed by the EstMP. Only developments for which the required infrastructure and services are available should be permitted. No development should be permitted before there is proof of sufficient freshwater and proof of capacity to dispose safely of wet and dry waste. It is also important that special building regulations be passed by both local authorities for any structures to be built outside the development zones and or the SDF. The title deed restriction over the De Mond Nature Reserve, should prevent any development expansion over this property. In the event that the title deed restriction ever be lifted in the future, development in this area will need to be subject to the same criteria as indicated above.

d. Use area

In this area water recreation activities may be undertaken but only in a safe and environmentally acceptable manner. "No-go" areas should be enforced at all times. All general water safety rules and measures must be strictly adhered to in this area. Use in this area is subject to agreements reached in terms of the title deed restriction which limit the number of people visiting the De Mond Reserve to a maximum number of 70 people at a time, no braai facilities, a maximum of 6 picnic tables and parking for 20 cars. Any changes to this carrying capacity need to be first cleared against the title deed restriction and agreements.

e. Sand banks

Sand banks are dynamic habitats that are vulnerable to incorrect harvesting of bait organisms. Bait collection should not be allowed. This needs to be monitored through the gate permit entry system, checking of the bait brought in with the angler, together with collection of completed permit and fish catch records on leaving the reserve. Honorary rangers should be tasked with ad hoc checking of anglers and unlawful bait collecting.

f. Mud banks

Similar to sand banks, mud banks are dynamic habitats that are vulnerable to human impacts. Bait collection should not be allowed. The use of salt marsh vegetation for grazing purposes should be discouraged due to the compaction of the habitat and possible exacerbated bank erosion caused by animal activity. The fact that much of the important habitat is in private ownership, makes it imperative to include riparian owners in future planning of conservation measures. The rehabilitation of the riverine vegetation along the buffer zone should assist in protecting this habitat. Honorary rangers should be tasked with monitoring the use or abuse of the mud banks, particularly by kayakers and canoeists who may be entering the river without coming through the formal permit and gate system at De Mond.

g. River Estuary Interface (REI)

The different designated zones above located within the REI must be adhered to. Sensitive habitats located in the REI must be viewed as ecotone areas that are important for ecosystem processes. In the case of the Heuningnes, this occurs about 12 km upstream near Soetendalsvlei. It is desirable to ensure that the privately owned Soetendalsvlei be brought into a form of co-operative management framework in order to protect this important interface. It is suggested for operational purposes that the Estuary management area should include these vleis which are part of the Nuwejaars River system.

h. Freshwater dominated reach (FDR)

The position of the freshwater interface has been altered through water extraction in the higher reaches of the catchment as well as farming activities in the wetlands leading to the estuary and through the mouth management. A more accurate determination of the FDR should be determined. The catchment wetlands (as described above) located in the freshwater dominated reaches are sensitive, hence the need to reinforce the importance of this zone to the private owners and other role players. Activities permitted in each zone in this section of the greater Heuningnes River catchment should be negotiated with role players. Compliance methods should be designed to ensure that no further negative impacts are allowed to develop. Where possible, rehabilitation of the damaged system should be encouraged.

i. Marine dominated reach (MDR)

Habitat types in the marine dominated reach is sensitive and under pressure. Recreational fishing must be properly controlled and enforced. Bait collection and other activities that impact negatively on this zone should not be allowed. *Zostera* beds and salt marsh areas should be vigorously protected. Access to these areas should be managed in order to avoid trampling of vegetation and compaction of soil. These areas should be protected through adequate signage, informative brochures attached to the entry permits and signage along the river for the purpose of informing users who have not entered the system through the gate and permit information at De Mond (ie the riparian owners users or other users from upstream.)

- Disallow catching of line fish species using cast nets, seine nets, gill nets and traps.
- Disallow night time fishing to protect the resource.
- Conservancy must be initiated between De Mond and land owners up stream with specific implications for fish stocks and fishing regulations.
- Protect stocks by controlled access or increased costs.
- Monitoring of consumptive resources.

j. Open mouth policy

The mechanical opening of the mouth for flood control over agricultural areas is a historic management practice for the catchment. The importance of maintaining the open mouth has been raised by the land owners that are affected by flooding through the EstMP process. This activity is now listed in terms of NEMA GN 386 (activities 2, 3, 4, 5 and 6) and will require authorisation prior to it being implemented in the future. This authorisation is required from DEAT (as the mouth falls under CapeNature control) and will require a Basic Assessment process to be undertaken in accordance with the requirements of NEMA. This authorisation should be sought asap, as it is not known when the next mouth opening will be required, and the continuous changes as a result of climate change are not known on the estuary – therefore the implementation of the mouth opening strategy is likely to change as the mouth dynamics change due to the influence of catchment activities and climate change. (See appendix 4 for the required forms for application for authorisation from DEAT.)

k. Riverine setback line

It is of crucial importance to retain riverine vegetation and stable river banks along the lower reaches of the Heuningnes River. This can only be attained with full co-operation of the riparian owners. Retention of indigenous riparian vegetation is essential as an ecological corridor and as a bank stabilization mechanism. Where possible, re-vegetation of depleted areas should be encouraged. Removal of alien invasive vegetation is essential. This setback line can be as much as 100m, but is can also be as narrow as 30m depending on the topography and present land use. The initiative of certain private owners in rehabilitating the river banks and re-establishing the natural riparian vegetation needs to be expanded on and should receive priority attention and possible funding to assist. Any physical river bank stabilization will require authorisation in terms of NEMA prior to the activity being undertaken (this information is contained in appendix 4). Where the activity is to take place outside the Provincial Nature Reserve, the environmental authorisation is required from DEADP, while within the reserve from DEAT.

l. Management of the stabilized dune field

The dune field historically stabilized in order to prevent the closure of the mouth and inland flooding requires active management in the form of alien plant species control and maintenance of hiking pathways. As these dunes were historically un-vegetated and mobile, they will naturally tend back towards this state. Monitoring of the situation with a view towards the management priorities will be required. It must be

remembered that any dune stabilization or disturbance of dune vegetation is currently a trigger in terms of NEMA requiring a Basic Assessment prior to any activity being undertaken (see appendix 4).

m. Management of estuarine vegetation.

All the estuarine vegetation has been mapped by Dr Tommy Borman at a relatively fine scale. All the sensitive vegetation has been indicated on the Estuary Zonation plan (figure 3). Estuarine vegetation, specifically the soils are sensitive to compaction through trampling and access thereto needs to be strictly controlled.

- The necessity of the existing paths over sensitive estuarine vegetation needs to be evaluated.
- Where possible, these paths need to be relocated to less sensitive areas.
- Where it is not possible to relocate paths, access in these areas should take place on raised boardwalks to minimise the uncontrolled impact through trampling.

As much of this sensitive estuarine vegetation occurs on private property and not within the statutory reserve area, an agreement with the possible implementation of a stewardship agreement needs to take place between Cape Nature, the Heuningnes Riparian Owners Association and the Agulhas Biodiversity Initiative.

Suggested general considerations within designated zones

- Improved permitting systems for the use of the estuary need to be implemented (improved data sheets for users of the facilities at De Mond).
- Improved data collection through the use of the estuary and its natural resources needs to be implemented (adequate data sheets for recording the use within the estuary, and fish catch records etc).
- Improved monitoring of use and compliance needs to be implemented within the estuary (honorary rangers, compliance officers).
- Improved system of monitoring the various data sets which are required from the estuary (fish data, bait organism data, bird count data, water quality and quantity data etc).
- Agree on the setback line for intensive agricultural practices along the estuary and within the catchment.
- Agree on the rehabilitation priority for the riverine buffer.
- Agree on the priority areas for alien invasive plant eradication within the catchment as it impacts on the estuary.
- Implement stewardship agreements for the private landowners within the catchment where they contribute to the well being of the catchment – especially the vleis and wetlands and their functioning in the catchment.
- Source funding to allow for the adequate management of the critical areas of the catchment which are in private ownership and which are integral to the health of the estuary.
- Innovative planning and consideration must be given to construction site selection and position, as well as building design of any new structures along the estuary (including setback distance from the estuary, tides and flood levels, dune integrity, water and wastewater management systems, drainage, etc.).
- Align any future or proposed developments with the agreed zonation for the estuary as stipulated in the local EstMP and IDP, and the title deed restrictions.
- Apply standards for resort or building ambience that are acceptable to local stakeholders (i.e. size, building height and colour, landscaping, etc.).
- Manage construction activities and contractors, with penalties for damaging environmental features outside the development zone.

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- Plan and carefully locate supporting infrastructure (transportation and road networks, waste collection and disposal, staff housing, etc.).
 - Avoid direct discharge from developments, and associated drains, roadways, and parking areas into the estuary or the vlei areas.
 - Design wastewater systems to allow the separation of grey water from sewage; and adequate treatment and disposal of sewage effluent to prevent ground or surface water contamination. Consider the development of reed bed systems, which are low maintenance, require no energy or chemicals, and which provide additional wetland habitat for local fauna.
 - Do not remove dune vegetation, sea grasses, reeds or other flora that protect the integrity of the Heuningnes River Estuary and associated wetland structures
 - Carefully revisit the previously determined flood water levels in view of new developments in agriculture as well as the greater role of tourism in the economy of the Heuningnes catchment area

5.2.4 **Management Action Zonation Plan**

The following management actions were identified to achieve the “operational objectives” set in terms of the EZP. Table 1 lists the proposed management actions for each designated zone.

Table 1. Management Action Zonation Plan.

Zone	Management action required	Applicable legislation	Section of the applicable legislation	Actions	Is this being addressed at present?	If so, by whom?	If not, who is mandated?	What are the resource requirements from the EMA
Coastal Protection Zone (CPZ)	Setback line for development in development zone set at 5 meter contour	Integrated Coastal Management Act (No 24 of 2008) - not yet proclaimed to be in effect	Section 25	Apply for legal status (have gazetted) of the setback line under the Integrated Coastal Management Act	No	No-one at present	Minister	EMF Manager
		Municipal Systems Act (Act 32 of 2000)	Section 26(e)	Ensure that setback lines are integrated into IDPs and SDFs	Yes	No-one at present	Both district and local municipalities	EMF Manager
		National Environmental Management Act	GN 386 activity 1m	Ensure that no development within 32m from the bank or 1:10 year flood line is undertaken without prior environmental authorisation	yes	DEAT&/DEADP		Law enforcement officers
		National Environmental Management Act	GN 386 activities 2,3,4,5,or 6	activities within 100m of the high water mark of the sea or estuary will require prior environmental authorisation	Yes	DEAT&/DEADP		Law enforcement officers
	"No-go" areas for development and vegetation transformation	Municipal Systems Act (Act 32 of 2000)	Section 26(e)	Ensure that development needs and restrictions are integrated into IDPs and SDFs	No	No-one at present	DEADP	EMF Manager
		Conservation of Agricultural Resources Act	Section 26(e)	Ensure that sustainable and legal agricultural activities are protected	No	No-one at present	Dept Agriculture	Law enforcement officers
		National Environmental Management Act	GN 386 and 387	will require prior authorisation before undertaking the activity	Yes	DEADP		Law enforcement officers
		National Forests Act		Ensure that no protected trees or listed vegetation types are removed with the required permits having been obtained from DWAF	yes	DWAF		Law enforcement officers
	Altitude restriction for aircraft operations	Ramsar listing		adequate monitoring and law enforcement	No	No-one at present	CAA	Law enforcement officers
	Control of harvesting of living resources	Marine Living Resources Act	section 51 (law enforcement)	Enforce a no-take policy	No	CapeNature		Law enforcement officers
		Seashore Act (NEMA:ICMA)	to be repealed by NEMA:ICMA once the act is duly promulgated by the Minister	Enforce a no-take policy	No	CapeNature		Law enforcement officers
	Ensure required freshwater input into Heuningnes Estuary	National Water Act		determine the ecological reserve for the river and the estuary	No	DWAF	DWAF	Law enforcement officers
		National Water Act		protection of the wetlands and vleis within the catchment area		DWAF	DWAF	Law enforcement officers
	Get authorization for any groundwater use in CPZ	National Water Act			No	DWAF	DWAF/CMA	Law enforcement officers
	Waste disposal facilities	National Water Act			Yes	DWAF	Overberg	Law enforcement officers
		National Environmental Management Act	GN 386	Listed activity requiring basic assessment to be undertaken	yes	DEADP		Law enforcement officers
		Municipal bylaws			Yes	Overberg		Law enforcement officers
		LUPO		requires appropriate rezoning or consent use	Yes	Overberg		Law enforcement officers

		Integrated Coastal Management Act (No 24 of 2008) - not yet proclaimed to be in effect	Chapter 8 section 69	Ensure that disposal of water containing waste into the estuarine environment is controlled and a coastal waters discharge permit issued	Yes	DWAF	DEAT/DWAF	Law enforcement officers
	Special building regulations	Municipal bylaws		building plan approval process	Yes	Overberg		Law enforcement officers
		title deed restriction		approval from De Mond (pty) Ltd prior to any buildings for trade or commercial use in the CapeNatue De Mond Reserve	Yes	land owner		Law enforcement officers
	Rehabilitation of previously damaged areas	Conservation of Agricultural Resources Act		restoration of degraded agricultural lands	No	No-one at present	Dept Agriculture	Law enforcement officers
		Integrated Coastal Management Act (No 24 of 2008) - not yet proclaimed to be in effect	Section 17 (coastal protected areas) and section 49 (integrated coastal management)	Municipalities are required to regulate, manage, protect, conserve and rehabilitate the coastal environment. Damaged areas should be identified and rehabilitation requirements prioritised and actioned	no	No-one at present	Local Municipalities	Law enforcement officers
	Rehabilitation of riparian vegetation	Integrated Coastal Management Act (No 24 of 2008) - not yet proclaimed to be in effect	Section 17 (coastal protected areas) and section 49 (integrated coastal management)	Municipalities are required to regulate, manage, protect, conserve and rehabilitate the coastal environment. Damaged areas should be identified and rehabilitation requirements prioritised and actioned	no	No-one at present	Local Municipalities	EMF Manager
	Removal of invasive alien vegetation particularly in riparian zones and within aquatic ecosystems	Conservation of Agricultural Resources Act	categories of listed alien species	declared alien invasive plants need to be systematically removed and follow-up control implemented	No	No-one at present	Dept Agriculture	Law enforcement officers
		National Environmental Management Act						
	Development of new agricultural lands (however small) within the CPZ must in all cases be subjected to a Basic Assessment in terms of the NEMA regulations	CARA & NEMA	listed activity	application subject to the relevant EIA regulations and process in terms of NEMA	yes	DEADP		Law enforcement officers
	Jetties and slipways needs authorization in terms of NEMA	National Environmental Management Act	listed activity	application subject to the relevant EIA regulations and process in terms of NEMA	yes	DEADP		Law enforcement officers
	General law enforcement in terms of MLRA	Marine Living Resources Act	section 51 (law enforcement)	Ensure that any harvesting is controlled via allocated fishing rights or recreational permits	Yes	CapeNature		Law enforcement officers
No-go and no disturbance zones	Ensure enforcement of “No-go” areas	Municipal Bylaws and Integrated Coastal Management Act (No 24 of 2008)	Chapter 4 clause 34	monitoring and enforcement of zoning in terms of the EMP	no	No-one at present	EMF	law enforcement officers
	Rehabilitation of previously damaged areas	Integrated Coastal Management Act (No 24 of 2008) - not yet proclaimed to be in effect	Section 17 (coastal protected areas) and section 49 (integrated coastal management)	Municipalities are required to regulate, manage, protect, conserve and rehabilitate the coastal environment. Damaged areas should be identified and rehabilitation requirements prioritised and actioned	no	No-one at present	Local Municipalities, CapeNature, land owners	EMF manager

	Rehabilitation of riparian vegetation	Integrated Coastal Management Act (No 24 of 2008) - not yet proclaimed to be in effect	Section 17 (coastal protected areas) and section 49 (integrated coastal management)	Municipalities are required to regulate, manage, protect, conserve and rehabilitate the coastal environment. Damaged areas should be identified and rehabilitation requirements prioritised and actioned	no	No-one at present	Local Municipalities, CapeNature, land owners	EMF manager
	Removal of invasive alien vegetation	Conservation of Agricultural Resources Act	categories of listed alien species	declared alien invasive plants need to be systematically removed and follow-up control implemented	No	No-one at present	Dept Agriculture	Law enforcement officers
	No anchoring of boats allowed	Municipal Bylaws and Integrated Coastal Management Act (No 24 of 2008)	Chapter 4 clause 34	Enforcement of activities in terms of EMP zoning	Yes	CapeNature	EMF	Law enforcement officers
	No beaching of boats allowed	Municipal Bylaws and Integrated Coastal Management Act (No 24 of 2008)	Chapter 4 clause 34	Enforcement of activities in terms of EMP zoning	Yes	CapeNature	EMF	Law enforcement officers
	No fishing in Zostera beds	Marine Living Resources Act	section 51 (law enforcement)	Ensure that any harvesting is controlled via allocated fishing rights or recreational permits	Yes	CapeNature	EMF	Law enforcement officers
	No building of any structures allowed in these area below 5 meter contour	Integrated Coastal Management Act (No 24 of 2008) - not yet proclaimed to be in effect	Chapter 4 clause 34	monitoring and enforcement of zoning/ objectives in terms of the EMP	no	No-one at present	EMF	Law enforcement officers
Development zone	Ensure that all new developments are located within the designated zones according to the SDF	Municipal Systems Act (Act 32 of 2000)		Implementation of SDF requirements including monitoring	yes	Overberg		Law enforcement officers
	No developments below the 5 meter contour	Integrated Coastal Management Act (No 24 of 2008) - not yet proclaimed to be in effect	Chapter 4 clause 34	Enforcement of activities in terms of EMP zoning	no	No-one at present	EMF	Law enforcement officers
	Building plans needs to be approved by local authority	Municipal Bylaws		Implementation of town planning scheme requirements including monitoring	yes	Overberg		Law enforcement officers
	SDF must not be in conflict with EstMP and or requirements of the CPZ	Integrated Coastal Management Act (No 24 of 2008) - not yet proclaimed to be in effect	Chapter 4 clause 34	Enforcement of activities in terms of EMP zoning	no	No-one at present	EMF	Law enforcement officers
	All developments not complying with the SDF must go through a stringent environmental authorization process in terms of NEMA. Additional special planning requirements within the CPZ for developments must be adhered to at all times	National Environmental Management Act	if listed activity	application subject to the relevant EIA regulations and process in terms of NEMA	yes	DEADP		Law enforcement officers
	Proposed new jetties and slipways must complying with NEMA regulations, special planning regulations in the CPZ	National Environmental Management Act	listed activity	application subject to the relevant EIA regulations and process in terms of NEMA	yes	DEADP		Law enforcement officers
	Any developments in rural areas outside the SDF must comply with the special planning and building regulations applicable in the CPZ	Municipal Bylaws & NEMA	possible listed activity	application subject to the relevant EIA regulations and process in terms of NEMA	yes	Overberg & DEADP		Law enforcement officers
	Any desalination plants must be authorized through the NWA and NEMA	National Environmental Management Act and National Water Act	listed activity	application subject to the relevant EIA regulations and process in terms of NEMA	yes	DEADP		Law enforcement officers

High use area	Ensure that all general water safety rules and measures are enforced	Municipal Bylaws and Integrated Coastal Management Act (No 24 of 2008)	Chapter 4 clause 34	Enforcement of activities in terms of EMP zoning	yes	CapeNature		Law enforcement officers
Sand banks	Ensure enforcement of the No-disturbance" and "No-go" zones	Municipal Bylaws						
	Monitor and enforce no bait collection policy	Marine Living Resources Act	section 51 (law enforcement)	Enforcement of activities in terms of EMP zoning	yes	CapeNature		Law enforcement officers
	No building of any structures in these area below the 5 meter contour	Integrated Coastal Management Act (No 24 of 2008)	Chapter 4 clause 34	Enforcement of activities in terms of EMP zoning	no	No-one at present	EMF	Law enforcement officers
	No anchoring of boats allowed	Municipal Bylaws			no	No-one at present	EMF	Law enforcement officers
		Municipal Bylaws and Integrated Coastal Management Act (No 24 of 2008)	Chapter 4 clause 34	Enforcement of activities in terms of EMP zoning	no	No-one at present	EMF	Law enforcement officers
Mud banks	Ensure enforcement of the No-disturbance" and "No-go" zones	Municipal Bylaws	Chapter 4 clause 34	Enforcement of activities in terms of EMP zoning	no	No-one at present	EMF	Law enforcement officers
	Monitor and enforce no bait collection policy	Marine Living Resources Act	section 51 (law enforcement)	Enforcement of activities in terms of EMP zoning	Yes	CapeNature	EMF	Law enforcement officers
	No building of any structures in these area below the 5 meter contour	Integrated Coastal Management Act (No 24 of 2008)	Chapter 4 clause 34	Enforcement of activities in terms of EMP zoning				Law enforcement officers
	No anchoring of boats allowed	Municipal Bylaws and Integrated Coastal Management Act (No 24 of 2008)	Chapter 4 clause 34	Enforcement of activities in terms of EMP zoning	no	No-one at present	EMF	Law enforcement officers
	No beaching of boats allowed	Municipal Bylaws and Integrated Coastal Management Act (No 24 of 2008)	Chapter 4 clause 34	Enforcement of activities in terms of EMP zoning	no	No-one at present	EMF	Law enforcement officers
Land-use and planning provisions of surrounding areas	All developments within the CPZ must be subjected to the NEMA regulations unless is falls within the SDF	National Environmental Management Act	listed activities	application subject to the relevant EIA regulations and process in terms of NEMA	yes	DEADP		Law enforcement officers
	All listed activities in terms of NEMA apply within the CPZ and shall be enforced rigorously	National Environmental Management Act	listed activities	monitoring, compliance and enforcement by DEADP	yes	DEADP		Law enforcement officers
	Water use (Groundwater and surface water) within the CPZ must be licensed by DWAF irrespective of whether it is within the general authorizations of DWAF. The only exclusion will be water for household purposes	National Water Act						Law enforcement officers
	All buildings to be erected must have approved building plans from the local authority	Municipal Bylaws						Law enforcement officers
	No developments will be allowed below the 5 meter contour of the CPZ	Municipal Bylaws and Integrated Coastal Management Act (No 24 of 2008)	Chapter 4 clause 34	Enforcement of activities in terms of EMP zoning	no	No-one at present	EMF	Law enforcement officers

	No effluents may be discharged into any aquatic ecosystems or the estuary without a permit from DWAF (Including brine from desalination plants)	National Water Act and ICMA	Chapter 8 section 69	Ensure that disposal of water containing waste into the estuarine environment is controlled and a coastal waters discharge permit issued	no	No-one at present	DEAT/DWAF	Law enforcement officers
	Desalination plants, however small, must be subjected to at least a Basic Assessment in terms of the NEMA regulations	NEMA & NWA	listed activity	application subject to the relevant EIA regulations and process in terms of NEMA	yes	DEADP		Law enforcement officers
								Law enforcement officers
Bait collection	No bait collection within the Estuary	Marine Living Resources Act	section 51 (law enforcement)	Enforcement of activities in terms of EMP zoning	Yes	CapeNature		Law enforcement officers
	No living bait organisms from other systems may be used in the Heuningnes River Estuary to ensure that no foreign parasites, viruses etc are introduced in this system	Marine Living Resources Act	section 51 (law enforcement)	Enforcement of activities in terms of EMP zoning	Yes	CapeNature		Law enforcement officers
Recreational fishing	Recreational fishing must comply with regulations in terms of the MLRA	Marine Living Resources Act	section 51 (law enforcement)	Ensure that any harvesting is controlled via allocated fishing rights or recreational permits	Yes	CapeNature		Law enforcement officers
	No night time fishing for Kob	Marine Living Resources Act	section 51 (law enforcement)	Enforcement of activities in terms of EMP zoning	Yes	CapeNature		Law enforcement officers
	Fishing of Kob is allowed only on a “catch and release” basis inside the estuary or according to management restrictions as prescribed by MCM from time to time	Marine Living Resources Act	section 51 (law enforcement)	Enforcement of activities in terms of EMP zoning	Yes	CapeNature		Law enforcement officers
Commercial fishing	No commercial fishing within the Heuningnes Estuary System	Marine Living Resources Act	section 51 (law enforcement)	Enforcement of activities in terms of EMP zoning	Yes	CapeNature		Law enforcement officers
General recreation	No motorised vessels permitted on the Estuary (except riparian land owners and CapeNature patrol vessels)	Integrated Coastal Management Act	CPZ / SMA	Enforcement of activities in terms of EMP zoning	Yes	CapeNature	EMF	Law enforcement officers
	Water users must make themselves aware of environmental hazards before entering the water area. The EMA will not be liable to damage claims from any water users	Municipal Bylaws and Integrated Coastal Management Act (No 24 of 2008)	Chapter 4 clause 34	Enforcement of activities in terms of EMP zoning	yes	CapeNature	EMF	Law enforcement officers
	No beaching of canoes outside desinganted area	Municipal Bylaws and Integrated Coastal Management Act (No 24 of 2008)	Chapter 4 clause 34	Enforcement of activities in terms of EMP zoning	yes	CapeNature	EMF	Law enforcement officers
	Hikers to be restricted to the designated pathways	Municipal Bylaws and Integrated Coastal Management Act (No 24 of 2008)	Chapter 4 clause 34	Enforcement of activities in terms of EMP zoning	yes	CapeNature	EMF	Law enforcement officers
	Safety of swimmers must be considered by both swimmers and other water users	Municipal Bylaws and Integrated Coastal Management Act (No 24 of 2008)	Chapter 4 clause 34	Enforcement of activities in terms of EMP zoning	yes	CapeNature	EMF	Law enforcement officers
	No alcohol policy	Municipal Bylaws and Integrated Coastal Management Act (No 24 of 2008)	Chapter 4 clause 34	Enforcement of activities in terms of EMP zoning	no	CapeNature	EMF	Law enforcement officers

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5.2.5 Implementation

Due to the number of authorities and role players involved in the management of various aspects of the Heuningnes River and the estuary, it is proposed that a management structure in the form of an Estuary Management Forum (EMF) be established. The EMF should ultimately become the Estuary Management Authority. The functions of the EMF are set out below:

Table 2. Functions of the EMF

EMF
Execute various management decisions and legislation It is recommended that the EMF functions along the lines of the Heuningnes Riparian Owners Association. This particular structure functions well, however communications between CapeNature and the HROA need to be streamlined as there is the current feeling that CapeNature make certain decisions in isolation. Additionally, the local Overberg Municipal authorities need to be represented on this EMF. • Give of effect to recommendations of the Estuary Management Plan (EMP) • Propose and ensure/facilitate the promulgation of rules and regulatory framework • Solicit funding for management projects • Develop sustainable funding mechanisms that will not harm the sensitive environment of the estuary • Budget for management activities • Monitor execution of management plan activities • EMF will ultimately become the EMA, this will entail expanding the current CapeNature staff and responsibilities • Development of a Memorandum of Understanding (MOU) between the various authorities in terms of regulatory functions and funding • Facilitate planning and execution of the IDP/SDF process with local authorities • Develop a communication strategy regarding the rules and regulations and relevant environmental information to stakeholders, authorities and public • Develop an Environmental Education Strategy for the Heuningnes River Estuary. This should include a land use/stewardship strategy for the catchment area • Keep record of all meetings and decisions and correspondence • Produce an annual report to go to all stakeholders

The composition of the EMF must be negotiated with stakeholders at the first stakeholder engagement meeting after completion of the EstMP. Frequency of EMF meetings must be decided after it is established.

A set of rules and protocols governing the actions of the EMF members must be negotiated as soon as the forum is established. Clear guidelines to this effect may avoid misunderstanding and conflict.

It is proposed that the EMF should meet at least four times per year initially with less frequent meetings when properly established. It is also proposed that the EMF must elect a suitably empowered

management sub-committee consisting of not more than four members to attend to urgent *ad hoc* management matters.

5.2.6 **Dedicated estuary management office**

When the EMF is functional a dedicated office with staff should be established. This may easily be achieved in the Heuningnes River Estuary by expanding the current CapeNature staff and responsibilities. The staff composition for this proposed management structure should consist of the following minimum staff and expertise:

- Office manager for the EMF office
- Law enforcement / monitoring officers - 4 minimum (Compliance officers)
- Extension/information officer (Stewardship) – 1 minimum
- Future staff could include an additional extension officer and administrative officer/secretary.
- A system of honorary rangers would work extremely well along this estuary due to the involvement of the private riparian owners in the catchment.

5.2.7 **Estuarine experts**

Estuarine experts for fish, birds, vegetation, aquatic ecosystems etc. should be employed in an Estuary Management Unit to collectively service all estuaries in the C.A.P.E. domain. This is especially important on the Heuningnes as this estuary is primarily an ecological reserve and is one of the few estuaries that has had very limited development impact and is therefore a key research estuary. This team of specialists may be contractual positions or permanent depending on funding. Additionally, many of the universities have students who are undertaking research within the area or who would be willing to undertake such research – it may be well worth establishing a system of post graduate students who could work on the various aspects of research required within this estuary.

As this estuary is not suitable for development expansion, it will not be necessary to employ a town and regional planner to assist with planning issues. Should development pressure arise in future, a specialist should be appointed. This team could become permanently involved in priority research programmes as identified by the C.A.P.E. Estuaries Programme.

It is proposed that the estuarine experts should determine and describe the “threshold of acceptable change” for each relevant parameter to be monitored.

Although various determinations had been made of the carrying capacity of the system, it is highly recommended that the exercise be repeated in view of new policies and legal framework.

5.2.8 Interim management arrangements

The development and implementation of the Heuningnes River Estuary Management Plan will not happen overnight.

As in the case of other estuaries undesirable and unsuitable developments, actions and agricultural activities will continue and even increase in anticipation of future controls. (The current official structures and enforcement capabilities are severely lacking in ability to deal with both formal applications and illegal developments). The potential degradation that can take place in the interim period may take years to rectify or in many cases may not be reversible at all. It is suggested that an interim process be put in place incorporating the following: ***(Hessequa Municipality has already taken the lead and is in the process of establishing "Co-Operative Eden Compliance Forum")***

- The formation of a committee which, during the implementation period, will monitor any formal applications or unauthorized activities that occur within the Heuningnes River Estuary and catchment area.
- This committee shall meet monthly with relevant authorities and stakeholders or when necessary to review developments and co-ordinate actions.
- An important function of the committee will be to assess current National, Provincial, and Local legislation, in context of its effectiveness to support the identified objectives of the Heuningnes EstMP. It shall where necessary motivate changes at all levels of legislation, but particularly in respect of Local Bylaws.
- The first actions of this committee should be to compile a detailed list of developments, activities and impacts that need priority attention.
- Present farming activities should be scrutinized along with other land uses.
- Action plans need to be developed and urgently implemented, including appropriate interventions.
- The composition of the committee could be made up of the following parties. Municipal Environmental Managers (Swellendam and Hessequa), Chairman Heuningnes Riparian Owners Association, De Mond owners, Town Planners (Swellendam and Hessequa), CapeNature and Agriculture
- Participating Authorities/Parties should include: DEA&DP, CapeNature, DWAF, Department of Agriculture, CSIR, Marine and Coastal Management.
- It may be expedient to hire a suitable qualified contract worker/consultant to guide the committee through the initial year (There are a large number of legal and environmental issues at stake that has to be considered).

5.2.9 Funding mechanism for EMF office

Funding the full time positions will be a challenge but is going to be of fundamental importance if the Estuary Management plan is to be implemented properly.

The ideal is that all the relevant authorities investigate ways of co-funding the implementation of the EstMP through dedicated office with staff. The existing funding should be supplemented initially but funding should be split on a percentage basis into the future. This may release money from certain sectors for specific projects. It would be important for positions to be multi-use, eg. The law enforcement staff should double as doing the monitoring and data collection. Similarly post graduate students could obtain funding through the GEF funding for CAPE for specific research projects in the estuary.

A proposed rough total budget to get a solid team of dedicated staff going with running expenses would be the following:

Table 3 Budget for implementation of EstMP (Approximate costing only)

Budget Item	Monthly cost	Subtotal	Total
Salaries (T Cost)			
Manager x1	R20 000	R20 000	R240 000
Secretary x1	later	later	later
Law enforcement (monitoring) x4	R15 000	R60 000	R720 000
Stewardship/information officer	R15 000	R15 000	R180 000
			R1 140 000.00
Capital expenditure			
4x4 vehicle	R6 000	R6 000	R72 000
Communication equipment	R800	R800	R9 600
Boat with electric motor for river patrols			R40 000
Automated weather station		R20 000	R20 000
Snorkelling gear		R5 000	R5 000
Canoes		R25 000	R25 000
			R171 600.00
Operational expenditure			
Petrol and Travel		R60 000	R60 000
Vehicle maintenance		R150 000	R150 000
Insurance		R22 000	R22 000
Disbursements		R10 000	R10 000
Stationary/printing/ pamphlets		R25 000	R25 000
Interpretive signage		R50 000	R50 000
Office rental		R15 000	R15 000
Telephones		R20 000	R20 000
Radio licenses		R20 000	R20 000
Training			
			R372 000

6 Management Strategies to achieve Strategic Objectives and Management Targets

6.1 *Law enforcement*

Law Enforcement in the Heuningnes Estuary is currently insufficient due to lack of capacity.

Suggest implementation of SMME and possible honorary rangers to increase eyes on the ground. The Heuningnes Riparian Owners claim to often come across bait collecting round the corner where they cannot be seen by CapeNature officials. On weekends, the Ranger on Duty on duty has to remain at the gate house to process entry permits and is thus not very mobile to undertake patrols of the estuary. The proposed staff of 4 law enforcement officers would allow one staff on duty at the gate, while the others are on duty within the reserve and undertaking monitoring duties or acting as guides – this will allow for a more active involvement with the users of the estuary and rapid response to illegal activities. A rotation should be used to ensure that there are always two staff on duty over the weekends (one at the gate and at least one on patrol/monitoring).

6.2 *Management of the Estuary Mouth*

The management of the estuary mouth has been single most important issue raised by stakeholders during the process to date. See the management of conflicting strategic objectives section 4.5 above.

As described in the situation assessment, the estuary mouth has been historically artificially maintained in an open state. The main reason for this is due to the extensive flooding of viable actively farmed agricultural areas when the mouth is closed.

This management strategy has been a highly debated topic between conservation officials and riparian owners. There are many conflicting opinions regarding the ecological effect of maintaining this system open.

One thing that is clear, there are many research opportunities that can help inform the future management of the mouth.

Firstly, an assessment of this management strategy on fish recruitment from the estuary needs to take place. The changes in the dynamics of the estuary over time should also be mapped in order to assess changes to ecological processes on a spatial scale (this will be a very difficult exercise, as very little literature is available from the times when the estuary operated naturally).

An economic model of the estuary for the open vs closed system needs to take place taking into account specifically fish recruitment and agricultural production.

A hydrological model of the estuary should be developed in order to model the effects of changes in water levels on the surrounding landscape (apart from the management of the estuary mouth, this information will be very useful in understanding and thus managing the potential impacts of climate change).

The current state of the estuary, including the pattern and process, has been defined with the system managed as an open mouth system. Considering this it is recommended that this strategy continue until peer reviewed research indicates otherwise.

The current strategy undertaken by CapeNature to maintain the mouth is by brush packing the frontal dune and thus preventing sand from being deposited in the mouth. Whilst this strategy has been effective, it has turned out to be extremely costly for CapeNature and also has very high maintenance requirements.

Considering the above statements, the following recommendations are made:

1. CapeNature alone should not be solely responsible for the financial burden of maintaining the open mouth status. All parties that benefit from the results of this management strategy should contribute. This contribution could be in the form of a financial, labour or material assistance.
2. A mouth management forum should be established and should consist of CapeNature and Riparian Owners and be chaired by DWAF (as an independent management authority). This forum would ensure that the management of the mouth is undertaken in the most responsible manner, without burdening any single person or organisation.
3. The current strategy of brush packing the frontal dune should be revised and a lower maintenance more long term solution should be sought. It is recommended that a re-vegetation program for the frontal dune be implemented (Note that the stabilisation of a dune is a listed activity in terms of the National Environmental Management Act and will require an Environmental Impact Assessment)

The initial costs associated with vegetating this dune will be relatively high, but the long term maintenance thereof will be significantly lower.

6.3 ***Environmental Education, Interpretation and Tourism***

6.3.1 **Trails**

Certain upgrades to the existing trails as well as the possible implementation of new trails is suggested and defined below.

6.3.1.1 **Day trails**

It is proposed that the existing Sterna day trail route be upgraded: Areas where there is evident compaction and erosion should be repaired by means of soil retention (gabions etc.) and the filling of highly compacted path sections with wood chippings (possibly from *Acacia cyclops* and *Acacia saligna* that are to be removed). Highly sensitive areas can be bypassed entirely or alternatively, raising the path above them as sections of boardwalk.

The opportunity exists to create another day trail route in the coastal thicket in the reserve area to the east of the Heuningnes estuary mouth. This would provide visitors to the reserve with a choice of walking trails and ultimately reduce pressure on the present Sterna trail route. The creation of the second trail route would require an on-site recheck of the proposed route, considering contours, avoidance of sensitive areas, bypass of interesting interpretive sites, erosion and compaction mitigation measures etc.

Improved signage along the trails is important especially indicating the boundary areas of the reserve in order to prevent encroachment onto private land. Pamphlets with the necessary maps and rules of use need to be available to hikers. It should be possible for guided trails to be given together with the law enforcement / monitoring staff for research / educational trips.

6.3.1.2 **Overnight hiking trail**

There is potential to establish an overnight hiking trail from Struisbaai to Arniston, using the existing overnight facility at De Mond as the overnight stop. Research would need to be done to determine starting and end points in consultation with local backpackers, B&Bs and lodges in both Struisbaai and Arniston.

The possibility also exists to extend this trail to a four-night/four-day hiking trail, starting in Struisbaai and ending in the De Hoop Nature Reserve. Research would need to be done, and partnerships established, to determine where the hikers could overnight in Arniston and the area between Arniston and De Hoop. The first day hike would be from Struisbaai to De Mond (14km) along the beach, overnighing in the present facility; second day hike to Arniston (10km), overnighing in local B&B or backpackers, to be determined; third day hike to middle point between Arniston and De Hoop, overnight stop to be determined; and last day hike to De Hoop, overnighing in the reserve itself. Each day would cover approximately 10-14km, ideal for small groups of avid hikers.

The end of the first day of the proposed two-day and four-day hikes could make use of the already established Sterna trail in De Mond, while the beginning of the second day could form part of the proposed day trail to the east of the mouth (see 6.2.1.1 above); or follow the established De Mond-to-Arniston trail that bypasses the famous Waenhuiskrans Cave, fish traps and Khoisan middens.

6.3.1.3 **Canoe trail**

With consideration of the open mouth river system and the popular birding in the area, the potential for a small scale, guided canoe trail is enormous. Considering the low carrying capacity of visitors imposed on the reserve, a maximum of three two-man canoes (therefore a maximum of five clients and one guide) would be optimum. The canoes (and accompanying life-vests, etc.) could be hired from reception and stored at the launch site near the river (to be identified). Due to the sensitive nature of the estuary it is recommended that this activity be pursued only with the services of a trained guide.

For the successful implementation of this the monitoring staff would need to act as guides, involving the keen canoeist in the monitoring tasks along the estuary.

Co-ordination with the riparian owners would be essential in this regard as the majority of the estuary is bordered by private land.

6.3.1.4 **Snorkelling trails**

As the Agulhas area is renowned for its snorkelling and scuba diving, the potential exists to establish a short snorkelling trail around the nearby rocky reef. Research will have to be done to determine whether this is at all possible i.e. considering tides, swell and depth of reef and whether it would be safe to undertake such an activity on a regular basis. Consideration would also have to include logistical matters, such as the distance to the proposed snorkelling area from the reserve base-camp etc.

This activity would require a trained guide and the purchase of 6-8 sets of snorkelling equipment. With consideration of the safety of the snorkelling area, the option exists for a self-guided snorkel route, where visitors could hire the snorkelling equipment from reception and follow a pre-determined route depicted on a trail handout.

6.3.1.5 **Birding and whale watching trips**

Bird and whale watching is one of the greatest draw-cards for the area. It is therefore highly recommended that a member of staff, trained in bird and marine mammal identification and interpretation, be available to lead guided birding and whale watching expeditions. These could be along the established trail routes, stopping at predetermined points for interpretation. As the main emphasis of this estuary should be on its research value as an "unspoilt estuary", the focus should always be on interpretation and educational awareness. As the level of monitoring and research increases, this information will be necessary to determine certain seasons where areas of the estuary may need to be defined as "no-go" due to a particular sensitivity eg. Breeding seasons for the birds etc.

6.3.2 Information and Interpretive Signage

6.3.2.1 At reception

The following signage could appear at the reception area:

MAPS:

- Regional map detailing the location of the N2, Bredasdorp, Agulhas National Park, the Agulhas point and lighthouse, Struisbaai, De Mond Nature Reserve (including river, Heuningnes estuary), Arniston/Waenhuiskrans and De Hoop Nature Reserve etc.
- De Mond Nature Reserve map detailing the location of the various facilities in the reserve, the roads, the trails (walking, hiking, canoeing and snorkelling), etc.

INFORMATION BOARDS:

- History of the area: detailing the eras of the Strandlopers/Khoisan, the ship wrecks and of the reserve itself (incl. the history of the artificially opened river mouth, dune stabilization etc.).
- An information board briefly detailing the significance of the RAMSAR status of the estuary (protection of the Damara and Caspian terns).
- An information board detailing the significance of the area for biodiversity conservation: largest lowland Fynbos & Renosterveld in the Cape Floristic Region; unmatched diversity of habitats, wetland ecosystems, local endemics and Red Data Species. This should include a brief description of the C.A.P.E conservation biodiversity strategy, and how it is being implemented locally.

It is further recommended that the following information hand-outs be available to visitors:

RESERVE INFO. & TRAIL MAPS

It is recommended that a basic reserve brochure be developed that provides general information about the reserve (e.g. reasons for proclamation, ecosystem significance, history etc.). This brochure should also include a basic map/layout of the reserve, depicting the location of the various facilities and trails.

INFORMATION PAMPHLET

Besides providing information about De Mond Nature Reserve itself, it is recommended to provide a short, simple pamphlet (preferably Z-fold) which details the other interesting tourism sites in the region. The idea being, to keep the tourists in the area for as long as possible – contributing to the local eco-tourism of the area. Some points to include in pamphlet may be:

- The Ship Wreck Museum and 'the oldest Milkwood tree in South Africa' in Bredasdorp.
- Agulhas National Park
- The Southern Tip of Africa
- The second oldest lighthouse and the longest stretch of uninterrupted beach in the southern hemisphere, restored Anglican Church, the March Geelstertfees, and Prayer Park for Africa in Struisbaai.
- The Waenhuiskrans cave and fish traps, as well as the Kassiesbaai Craft Centre and Art Gallery in Arniston.

-
- De Hoop Nature Reserve.

6.3.2.2 **One day-trails**

A number of basic interpretive sign boards should appear on the existing Sterna trail, as well as the proposed second trail to the east of the Heuningnes estuary mouth. These could include explanation of a number of the common indigenous plant and animal species which can be seen in the area. Any area used as a whale watching site should include an information board of the marine mammals that occur in the area. This board should provide identification tips, and interesting facts about specific species etc. Demarcation of the boundary with private land is essential to avoid conflict.

6.3.2.3 **At overnight cottage**

As visitors spend time at the cottage, it is recommended that a detailed information book or file be provided for further reading. This file should be seen as a means to add to and provide further details to the brief information displayed on the information and interpretation boards in reception, and throughout the reserve. Here one can provide full bird and animal lists, provide information on interesting animals and plants endemic to the area e.g. the Cape platana and micro frog etc., as well as the unique historical and cultural aspects of the Agulhas region. In addition to this, information can be provided on interesting projects being undertaken in the area, for example: the Cape Vulture breeding project in De Hoop; the environmental education programmes of the Flower Valley Conservation Trust, initiatives of the Agulhas Plain Tourism Forum, the 'fine-scale planning of the Agulhas Bioregion' by WWF; the development of management capacity for the De Hoop Marine Protected Area (WWF/Rhodes University) etc.

6.3.2.4 **Fish information**

It is recommended that a pamphlet or information board be provided. These should include:

- The requirement for a valid fishing permit;
- The fish species that occur in the area (marine and estuarine) and specific catch limitations;
- The promotion of catch and release and data collection;
- Rules relating to fishing in the CPZ (eg. No night fishing in the estuary, no bait collection, no spear fishing at all etc).
- The significance of estuaries as nurseries for many marine fish, and the other goods and services that estuaries provide;
- The susceptibility of the marine and estuarine systems to overexploitation and degradation, and the measures taken to minimize such impacts: e.g. the regulations set down by Marine Living Resources Act and Marine and Coastal Management (permits systems and the S.A. Sustainable Seafood Initiative (SASSI) detailing the vulnerability categories of line-fish etc.); and the reasons for prohibiting bait collection within the De Mond reserve etc.

Marine and Coastal Management has developed an array of impressive interpretive sign boards for the coastal areas of South Africa (77 available at present). The initial pilot for the national marine awareness project involved the development of a number of interpretive sign boards for the Agulhas region in 2001, copies of which could be sourced and used for De Mond Nature Reserve. These include:

- Estuaries
- Sandy shores
- Dunes on the move
- Oceans of contrast
- Heart of the fynbos

6.3.2.5 At picnic site

As open fires are prohibited in the picnic area, it is recommended that an information board to be placed at the entrance of the picnic area that explains the fire-prone nature of the vegetation in the area and how it has adapted to fire events.

6.3.2.6 At R319 road bridge

The R319 road bridge has become a popular launching site for kayakers, attempts to prevent access at this point are likely to be unsuccessful and the challenge therefore arises as to how to manage this use. Although this use has little to no impact on the river itself, a concern has been raised by the farm owners adjacent to the river about the kayakers trespassing on their lands. It is therefore recommended that a sign board be placed at the launch site below the R319 road bridge to inform kayakers that they are entering a "Coastal Protection Zone" and that they may only enter the river if in possession of a valid entry permit available from the De Mond Nature Reserve. Exit is only permissible at the bridge itself or at a designated site (to be determined?) within the De Mond Nature Reserve, and not onto private land (unless consent has been given by the specific land owner beforehand). It is further recommended that a rubbish bin be placed at the bridge. The patrol staff on duty and honorary rangers will need to assist in the monitoring of this use and should this become a more significant problem, methods will need to be implemented to prevent access at the bridge. It would be worth identifying any regular kayakers and enlisting their assistance as honorary rangers for the EMF. In this way the user group become part of the monitoring and patrolling group, without additional expense to the EMF.

6.3.3 Training of local field guide/s

It is recommended that at least one person be employed from the local community as a permanent staff member and guide for the reserve. This guide would be responsible for guiding all outdoor activities:

including walking trails, canoe trips, birding and whale expeditions and snorkelling activities. It is recommended that this person receive the following training:

- Site specific training – focusing on the specific vegetation and animal species, as well as estuarine and coastal marine habitats present at De Mond Nature Reserve. The guide must be able to identify and interpret the common plant, animal and bird species of the area, as well as explain the significance of the Cape Floristic Region, estuarine and coastal marine ecology, history of the area etc.;
- Field Guide Association of Southern Africa (FGASA), level one field guide training;
- First Aid, level one qualification;
- Canoe training;
- Open water scuba diving qualification would be ideal, but competence in swimming and snorkelling is highly recommended.
- CAPE has formed a partnership with Rhodes University's Gold Fields Participatory Course in Environmental Education. Each year, the C.A.P.E Conservation Education Programme offers bursaries to 20 conservation education professionals working in CAPE partner organizations, such as Western Cape Nature Conservation, to complete a year-long, semi-distance course in Environmental Education.

6.3.4 **Linking with the Agulhas Biodiversity Initiative (ABI)**

As one of their components, the ABI, in consultation with its partners (CapeNature), is responsible for developing and implementing a nature-based tourism strategy for the Agulhas Plain. As part of this, an Agulhas Plain Tourism Forum is being established to enhance the capacity of local communities to participate in tourist activities. Support for eco-tourism initiatives will include the upgrading of the existing tourism infrastructure, the establishment of Agulhas Plain Heritage Centres, the development of tourist route and a hiking trail, use of the tourist landmarks such as the graveyard of ships, historic Agulhas lighthouse and activities such as whale watching and fynbos viewing to promote conservation issues to tourists.

It is recommended that for any of the above proposed activities to be sustainable and gain institutional support, they should be aligned with the strategy of the ABI and the Agulhas Plain Tourism Forum.

6.4 ***Monitoring and evaluation***

To enable sustainable management of estuaries, it is imperative to collect and analyse appropriate and reliable quantitative data. The requirements for monitoring are estuary specific.

The following monitoring and evaluation plan is proposed
Key elements of the monitoring and evaluation plan are:

-
- Monitoring objectives
 - The selection of monitoring parameters (indicators)
 - The required staff and/or qualified personnel
 - The required budget
 - Refinement of spatial and temporal scales
 - Appropriate sampling and analytical techniques
 - Evaluation and Reporting
 - Integration of results into MAP
 - Dissemination of information to Interested and Affected Parties

The following aspects were identified as a minimum in terms of the monitoring plan:

- a. Monitoring of biota as an indication of ecosystem health:
 - Microalgae
 - Zooplankton
 - Macrophytes
 - Macrobentos
 - Ichthyofauna
 - Birds
 - Amphibians
- b. Monitoring exploitation of living resources
 - Fish
 - Bait
- c. Monitoring water quality (to obtain accurate base line data) in the:
 - Freshwater dominated reach
 - Marine dominated reach
 - River Estuary Interface reach
- d. Bacteriological monitoring at pre-selected sites of potential concern
- e. Monitoring sedimentation in pre-selected problem areas
- f. Monitor groundwater (to obtain accurate base line data)
 - quality
 - water level
- g. Monitor chemical pollution on an *ad hoc* basis
- h. Monitor estuarine usage in different zones – carrying capacity
 - Angling
 - Canoeing
 - Swimming
 - Day visitors
 - Hiking
 - Agricultural practices detrimental to the functioning of the wetland and estuarine systems.(Via satellite photographs)
- i. Habitat Losses and Gains, with the use of GIS
- j. Climatic data (for an accurate input into climate change)

Because evaluation of the EMP will become the responsibility of the EMF, the evaluation process must consist of a number of technical working groups or a single working group consisting of people from the different fields.

Fields of expertise suggested for this purpose should consist of the following:

- a) Conservation,
- b) Social (and cultural) issues,
- c) Land-use and infrastructure development,
- d) Water quality and quantity (water supply/demand and waste)
- e) Exploitation of living resources
- f) Stewardship
- g) Agriculture

6.4.1 Water Quality Management.

Before a detailed water quality management plan can be developed, a full baseline water data set needs to be taken this needs to be taken over time and correlated with rainfall events. The following is proposed:

A baseline collection should be taken immediately at all the sample points as suggested in Appendix 5.

The following chemical analysis should take place at each of the sample sites;

- | | |
|--------------------------------------|------------------------------------|
| -Potassium (K mg/l) | -Total Dissolved Solids (mg/l) |
| -Sodium (Na mg/l) | -Hardness (CaCO ₃ mg/l) |
| -Calcium (Ca mg/l) | -Aluminium (Al mg/l) |
| -Magnesium (Mg mg/l) | -Cobalt (Co mg/l) |
| -Ammonia (N mg/l) | -Copper (Cu mg/l) |
| -Sulphate (SO ₄ mg/l) | -Iron (Fe mg/l) |
| -Chloride (Cl mg/l) | -Lead (Pb mg/l) |
| -Alkalinity (CaCO ₃ mg/l) | -Manganese (Mn mg/l) |
| -Nitrate + Nitrite (N mg/l) | -Nickel (Ni mg/l) |
| -Ortho Phosphate (P mg/l) | -Zinc (Zn mg/l) |
| -Fluoride (F mg/l) | -Chemical Oxygen Demand (mg/l) |
| -Conductivity (mS/N @25°C) | -Biological Oxygen Demand (mg/l) |
| -pH (@25°C) | -Total Oxygen Demand (mg/l) |
| -Saturation pH (pHs @ 20°C) | |

A microbiological analysis of the water quality including total coliforms as well as *E.coli* should be undertaken with the sampling.

It is estimated that a 250ml sample at each of the sample sites should be sufficient for all analyses, but this should be confirmed with the laboratory undertaking the tests. Monthly water samples should be taken for one year. The results from these water quality tests over a one year period should then be used to inform management of the water quality. From a water quality management point of view, it is difficult to develop management recommendations until one has a thorough understanding of the current situation. Subsequent to the monthly sampling for the first year, the sampling frequency can be decreased to quarterly samples.

The management recommendations made after this period should then be used in the update of this EMP after 3 years. Apart from informing management recommendations, the results of all readings should be made available to all relevant authorities (ie. DWAF, DEADP)

Should any major imbalances or readings not within the norms occur, the following steps should take place;

- A professional consultant should be appointed to assess the situation.
- The origin or point source of the problem needs to be determined
- If the problem originates from one of the tributaries of the Heuningnes, the cause must be determined.
- The problem must then be rectified at its origin in consultation with the professional consultant, land owners and the relevant authorities.
- A monthly monitoring schedule must then be adopted until the results have normalized.

Table 4 contains the proposed monitoring plan for the Heuningnes River Estuary.

Table 4 Proposed Heuningnes River Estuary Management Plan Monitoring Schedule

Required monitoring	Monitoring objectives	Monitoring parameters (indicators)	Required staff	Required budget	Spatial and temporal scales	Sampling/analytical techniques	Evaluation and Reporting To:	
							Management EMA	EMF
Biota: - Microalgae - Zooplankton - Macrophytes - Macrobentos - Ichthyofauna - Birds - Inter- and sub-tidal vegetation	To assess population trends of the different organism types associated with the Heuningnes River Estuary to inform management actions	Population dynamics - Growing - Shrinking - Population structure – age and sex ratios	4	Must be determined	Designated sites (existing and new ones to be identified) See research by CSIR and others	Microalgae Zooplankton Macrophytes Macrobentos Ichthyofauna Amphibians Birds - QWAC (Methodology must be determined by appropriate scientific team – “Threshold of acceptable change”)	Quarterly	Annually
Exploitation of living resources - Fish - Bait	To assess extent of living resources exploitation to inform management actions	Relate exploitation of fish to population dynamics - Amount of permits issued - Amount of non-compliance documented (with respect to no-bait collection policy) - All catch records from site	2	Must be determined	Throughout estuary for fish Lower part of estuary for bait (sand- and mud banks)	Permits issued Non-compliance data	Quarterly	Annually
Water quality: - Freshwater reach - Marine reach - REI reach	To assess intactness of water quality in each of the river reaches To assess effectiveness of management actions	Physical and chemical parameters: - Nitrate - Ammonium - Phosphate - pH - EC/Salinity - Oxygen concentration - Temperature	4	Must be determined	Sampling sites in each respective reach	Collect water quality samples according to laboratory specifications and sending it for analysis pH, EC, salinity, Temp and Oxygen measured <i>in situ</i>	Quarterly	Annually
Bacteriological monitoring	To pick up bacteriological pollution as an early warning system of pollution to inform recreational use	Bacteriological concentrations: - Total coliform bacteria - Faecal coliform bacteria - Must be less than 100 per 100ml for full contact recreation	2	Must be determined	Sampling at problem sites where full-contact recreation is exercised	Collect water quality samples according to laboratory specifications and sending it for analysis	Quarterly	Annually
Sedimentation	To assess sedimentation at problem sites and monitor efficiency of management actions	Increasing or stable sedimentation/sandbanks: - Fixed photo points - Landsat imagery - Bathymetry	4	Must be determined	At pre-selected sites	Secchi measurements as at water quality sites – filter and weigh Fixed photo monitoring (annually) Landsat interpretation Bathymetric measurements	Quarterly	Annually
Groundwater: - quality - water level	To assess groundwater quality and water levels To inform management interventions and effectiveness	Groundwater quality: - EC - pH - Hydrogeochemistry - Aquifer “type” characteristics Groundwater level data: - Rising - Declining - Rainfall relation	2	Must be determined	Groundwater usage within CPZ and within 10 km there off	Collect water quality samples according to laboratory specifications and sending it for analysis pH and EC can be measured <i>in situ</i> assistance of the local farmers making use of ground water.	Quarterly	Annually
Chemical pollution	To assess level of chemical pollution at problem sites To intervene with management where appropriate	Chemical compound and concentration: - Presence or absence - Concentration - Possible source	2	Must be determined	At pre-selected sites only (<i>ad hoc</i>)	Collect water quality samples according to laboratory specifications and sending it for analysis	Quarterly	Annually
Estuarine usage: - Angling - Canoeing/kayaking	To assess level of estuarine use by different user groups To relate estuary use to all of the above	Numbers of permits issued Number of non-compliance documented Number of organized events and	4	Must be determined	Through-out estuary: Access points (public slipways, permits etc.)	Permits issued Non-compliance data for each respective activity	Quarterly	Annually

Required monitoring	Monitoring objectives	Monitoring parameters (indicators)	Required staff	Required budget	Spatial and temporal scales	Sampling/analytical techniques	Evaluation and Reporting To:	
							Management EMA	EMF
• Swimming	To inform management interventions where appropriate	participants Number of reported incidents				<i>Ad hoc</i> counts		
Detrimental Agricultural practices	Proactively identify adverse agricultural practices before they cause damage.	To be determined with the Catchment management forum	1	Must be determined	Entire catchment	Co-ordinate with the Department of Agriculture	Quarterly	Annually
Red Data and endangered species	Identify areas where red data species are likely or known to occur	Determine together with the ABI and CAPE	?	Must be determined	Sampling sites in the remaining natural areas through all seasons	Field work to be co-ordinated with other known collections/ collectors ABI and CAPE and Kirstenbosch SANBI	Quarterly	Annually
Aerial photography	To assess the changes in the wetlands within the catchment over time (Cleaver & Brown, 2005)	Desktop mapping exercise	1	Must be determined	Entire catchment	GIS	Once off	Once off
Alien invasive plant management	Assess the level of infestation within the catchment and their impact on the fresh water resources of the rivers and wetlands.	Desktop mapping exercise with ground truthing and working for water	1	Must be determined	Entire catchment	GIS	annual	Annually
Climatic data	To collect a reliable data set of climatic information which can be used to accurately provide reference with respect to climate change	Davis instrument advantage pro weather station with half hourly data logging of rainfall, intensity, UV, evapotranspiration, wind direction and speed, barometric pressure, humidity, temperatures etc	1	Capital expenditure	One station at the De Mond Nature Reserve – as budget allows additional station within the catchment	Automated – download onto pc at the office – manager to provide for interpretation	monthly	annually

6.5 **Research**

Research is an integral part of any management approach.

With management actions and monitoring, existing and new questions will arise that needs to be addressed through proper research.

The following preliminary list of the basic research requirements for effective monitoring of the Heuningnes River Estuary. Research is listed in priority order.

- a. Determine the impact of fishing activities on fish stocks.
- b. Collection of reliable climatic data to enable accurate recording for input towards climate change.
- c. Research into the effect of climate change, reduced fresh water input and salinity build up within the low lying agricultural lands, with a view towards the mouth opening strategy.
- d. Determine the sediment dynamics within the Heuningnes River Estuary, both marine and catchment sediments.
- e. Determine the reason for the perceived erosion and wetland degradation in the catchment by assessing land-use through landsat to indicate sediment yields.
- f. Determine impacts of upstream impoundments and dredging activities on the functioning of the estuary and wetlands.
- g. Re-assess the present mouth management policy. Determine the effectiveness of the present management in terms of maintenance cost, effect on upstream agriculture and infrastructure as well as on offshore fishing stocks.
- h. Determine the freshwater requirement for the Heuningnes River Estuary.
- i. Determine the quality of the water entering the Heuningnes.
- j. Determine ground water surface water interface with Heuningnes River Estuary. Map aquifer types and potential yields of groundwater discharge or recharge to and from the estuary.
- k. Determine the importance of sub-surface water input for the health of the river.
- l. Determine the impacts of existing farming activities on the water quality and sediment yields in the estuary.
- m. Determine the impacts of aquatic and picnic recreation activities on the estuary (carrying capacity must be determined).
- n. Determine the impact of possible expansion of tourism facilities on the sensitive coastal vegetation and estuary resources.
- o. Assess proposals for generation of revenue against environmental sensitivity, financial viability, possible market for the product, sense of place, carrying capacity.
- p. Determine through pollen analysis of the various wetlands in the catchment, the pre-history of the catchment with specific reference to the debate regarding the mouth status and the long term prediction for the area with respect to climate change.

Research funding mechanisms must be investigated as part of the implementation phase of the EstMP. Collaboration with the various tertiary academic institutions should be sought, as post

graduate study could be an effective mechanism of achieving the research objectives and accessing funding which is available. Funding through CAPE and GEF should be investigated.

It is proposed that a team of experts be identified to form a research unit/consortium to undertake the baseline and other priority research in all estuaries within the C.A.P.E. domain.

Relevant scientific and management information must be made accessible to the general public. Use information brochures, posters and web site to distribute information. Some workshops can be arranged to introduce the community to the use of scientific information in applied management.

6.6 ***Review and Evaluation***

This EMP should be reviewed and updated on a three yearly basis. An audit should be undertaken along side the review and evaluation to determine and grade the success and failures with the implementation of the management plan.

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7 Appendices

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- 7.2 ***Appendix 2 - Situation Assessment***
- 7.3 ***Appendix 3 – Title deed extract and legal extract***
- 7.4 ***Appendix 4 – NEMA EIA activities triggered & application forms***
- 7.5 ***Appendix 5 – Water sample sites***
- 7.6 ***Appendix 6 - Oil Spill Contingency Plan***

Appendix 1 – Figures

Figure 1: Catchment Area



0 2.5 5 10 15 20 Kilometers



Hilland Associates
Environmental Management Consultants

Figure 2: Bioregional Zones

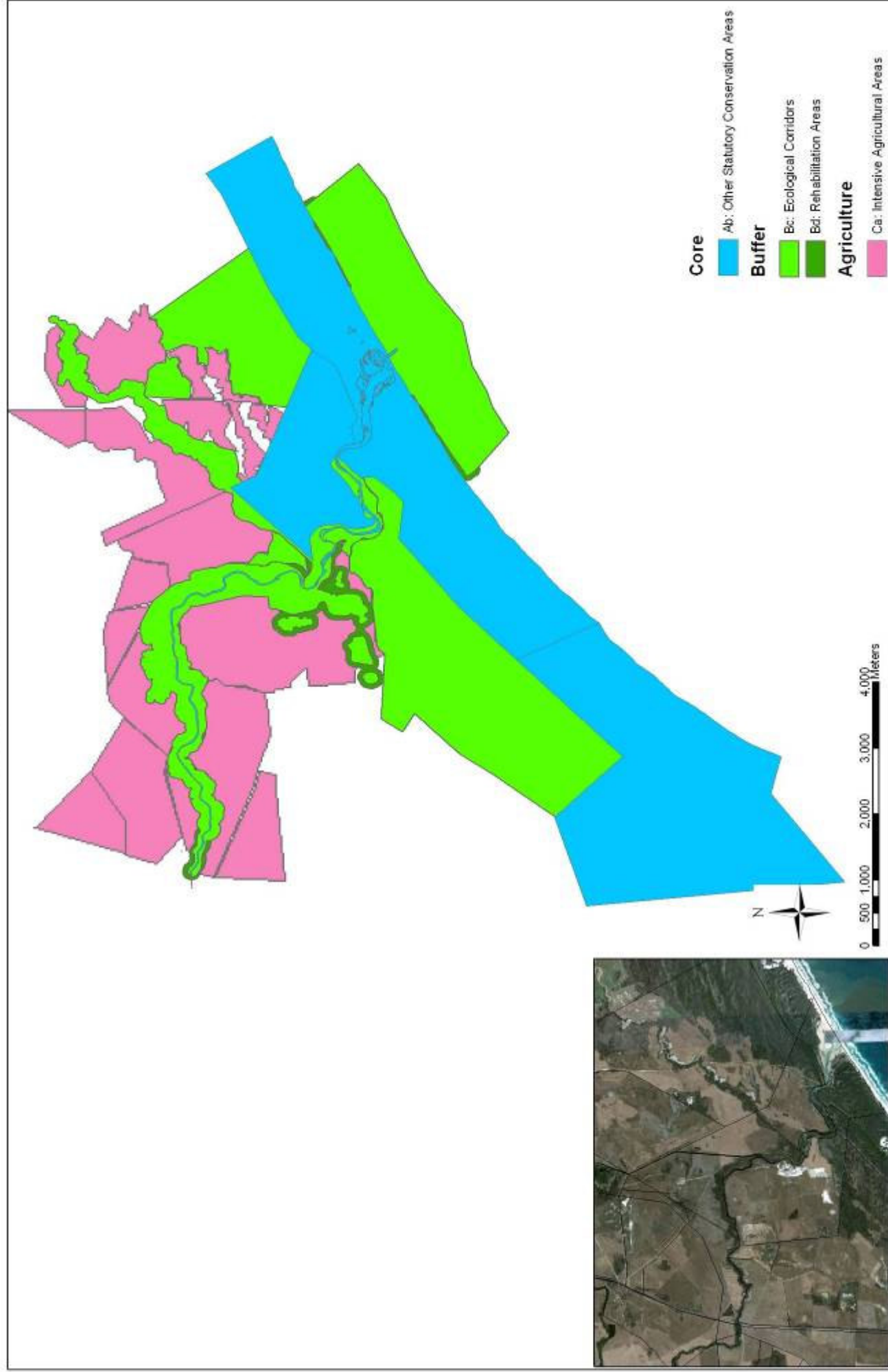


Figure 3: Fine Scale Mapping

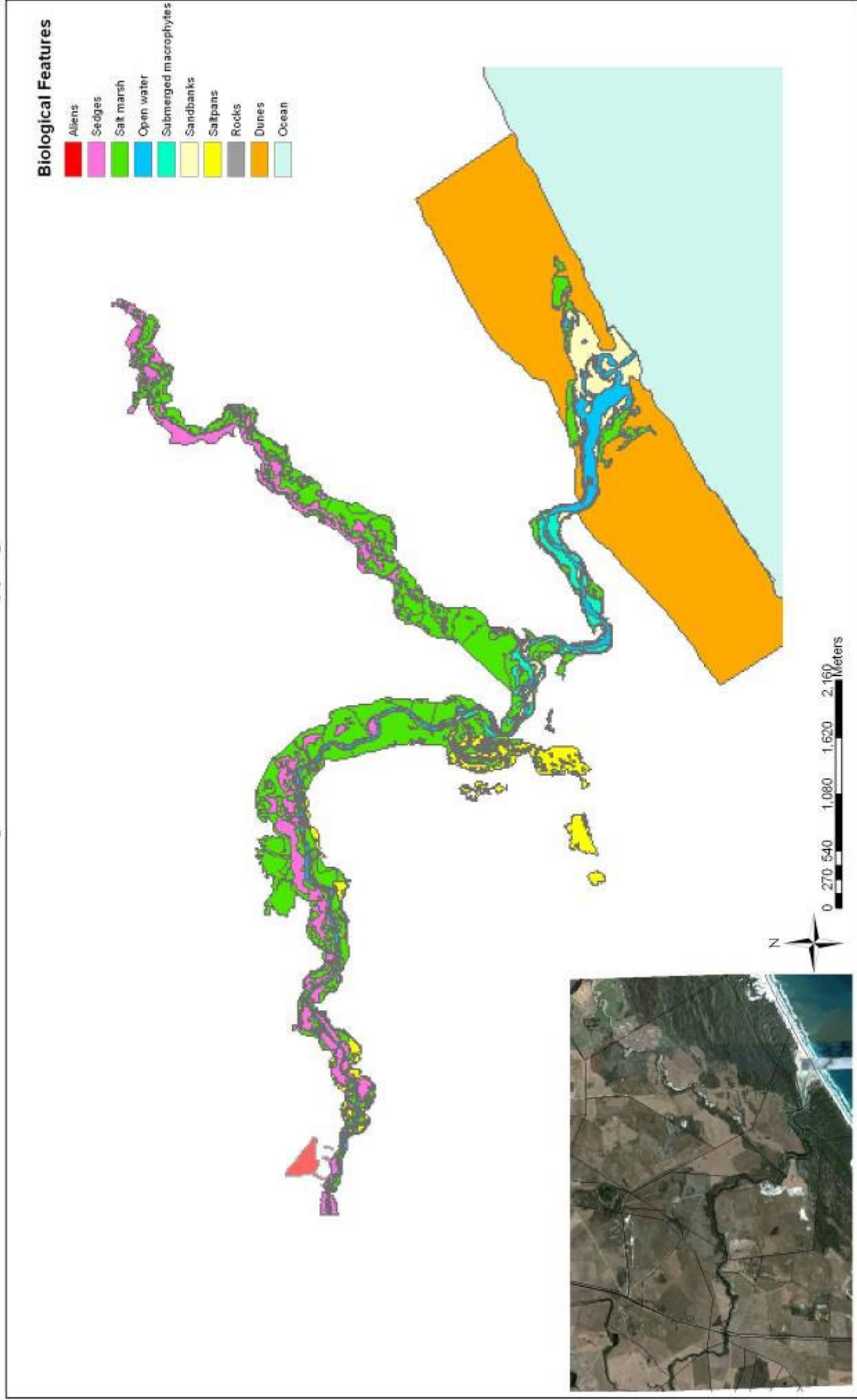


Figure 3A: Fine Scale Mapping

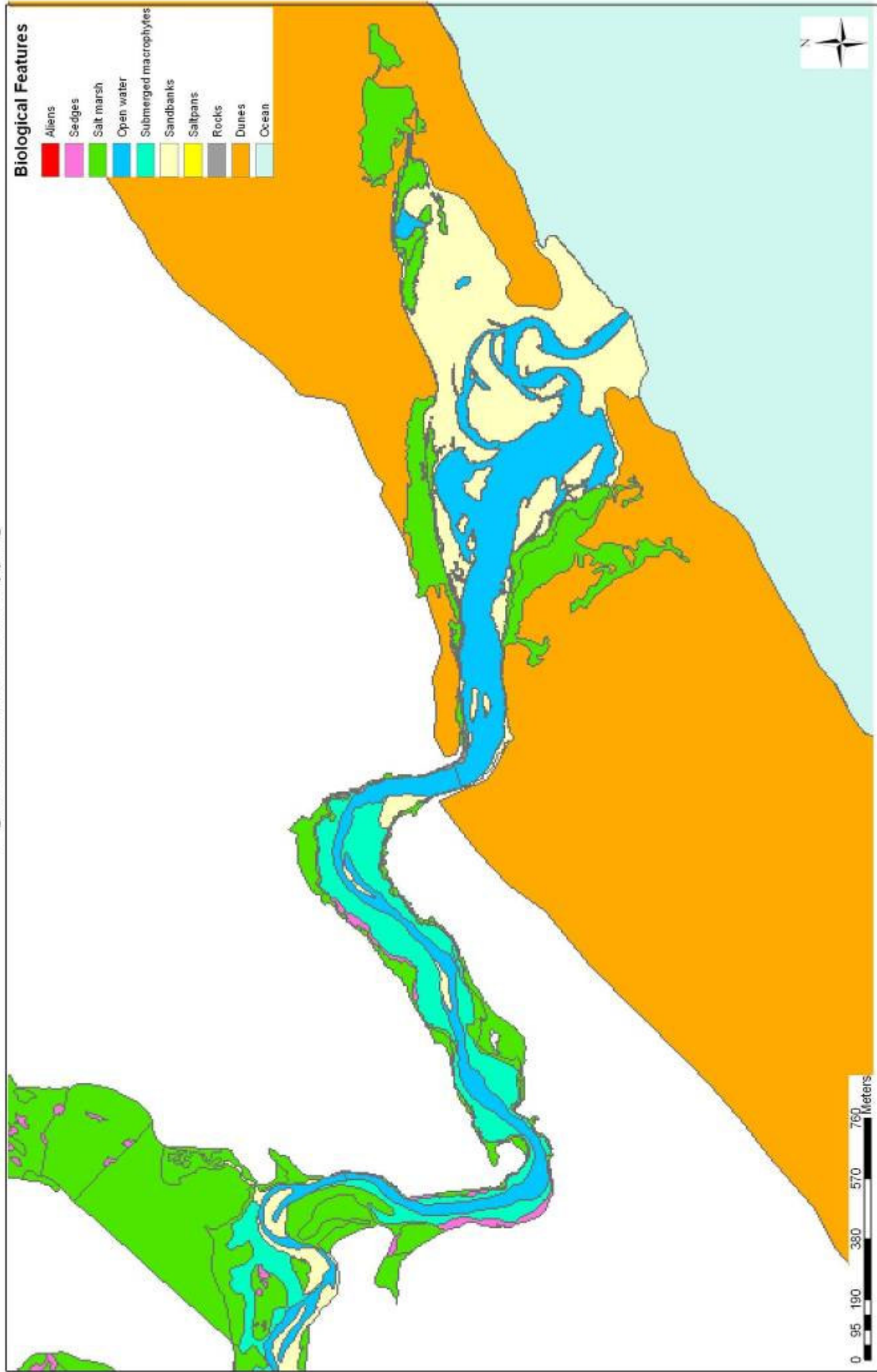


Figure 3B: Fine Scale Mapping

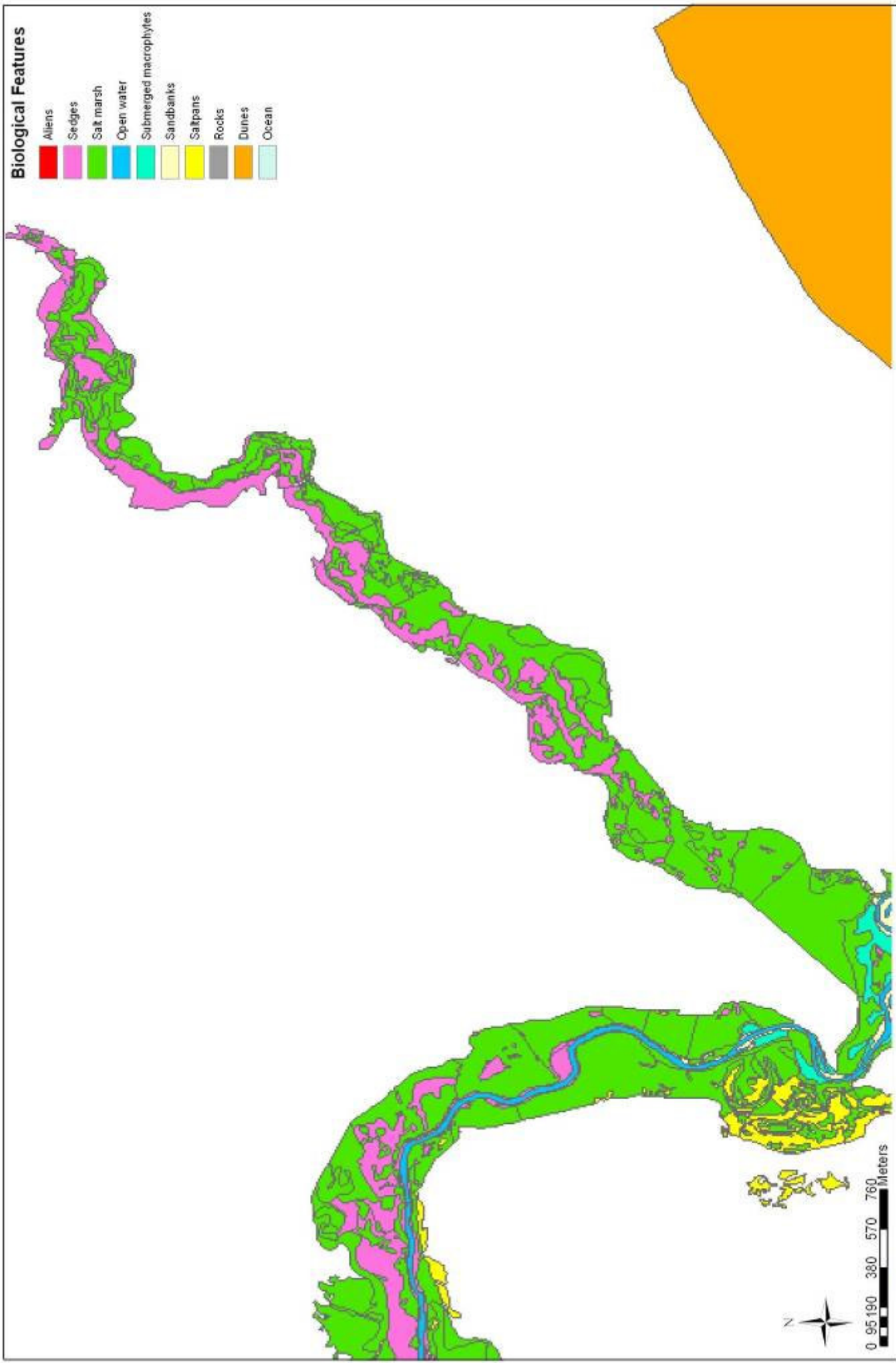


Figure 3C: Fine Scale Mapping

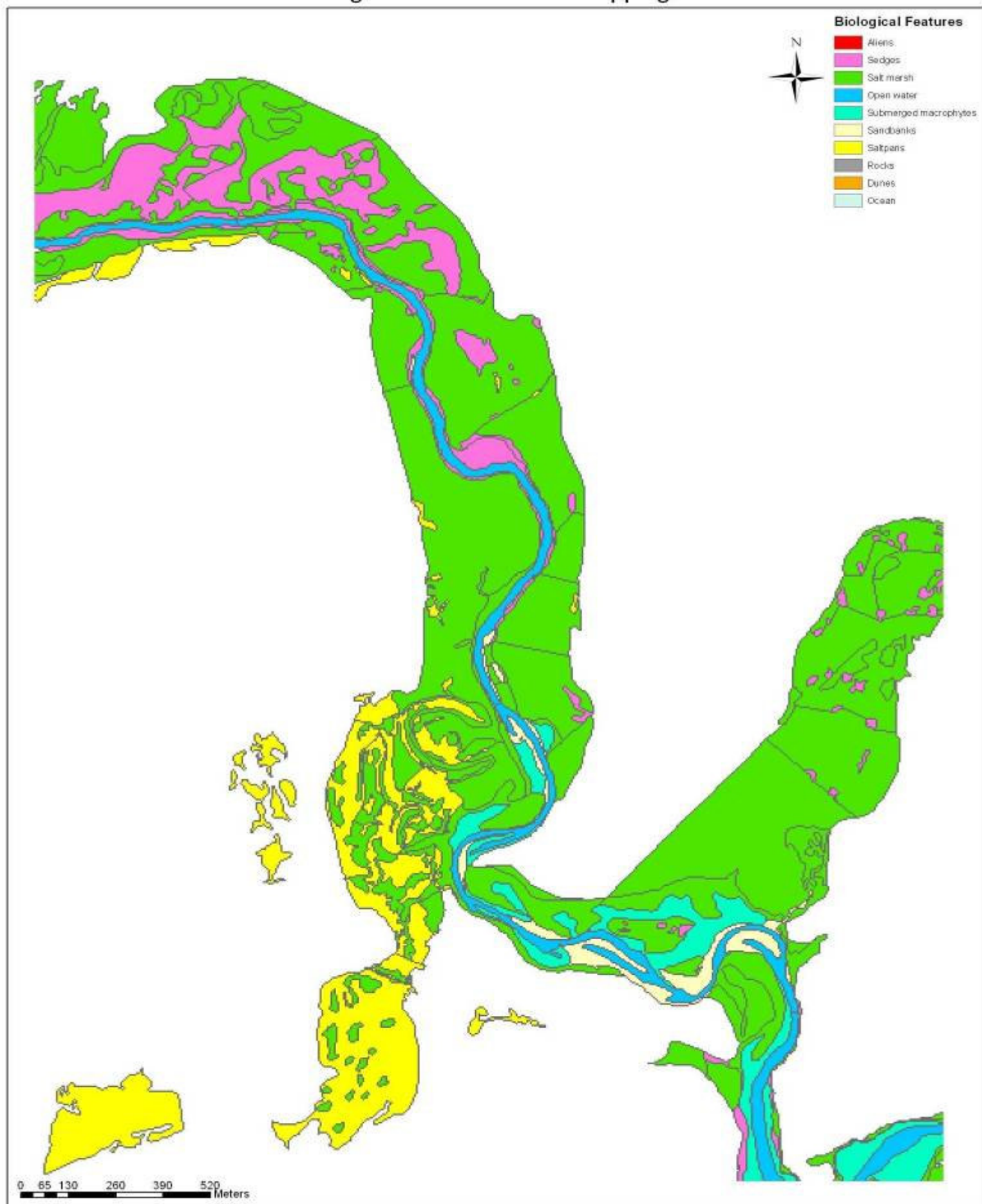


Figure 3D: Fine Scale Mapping

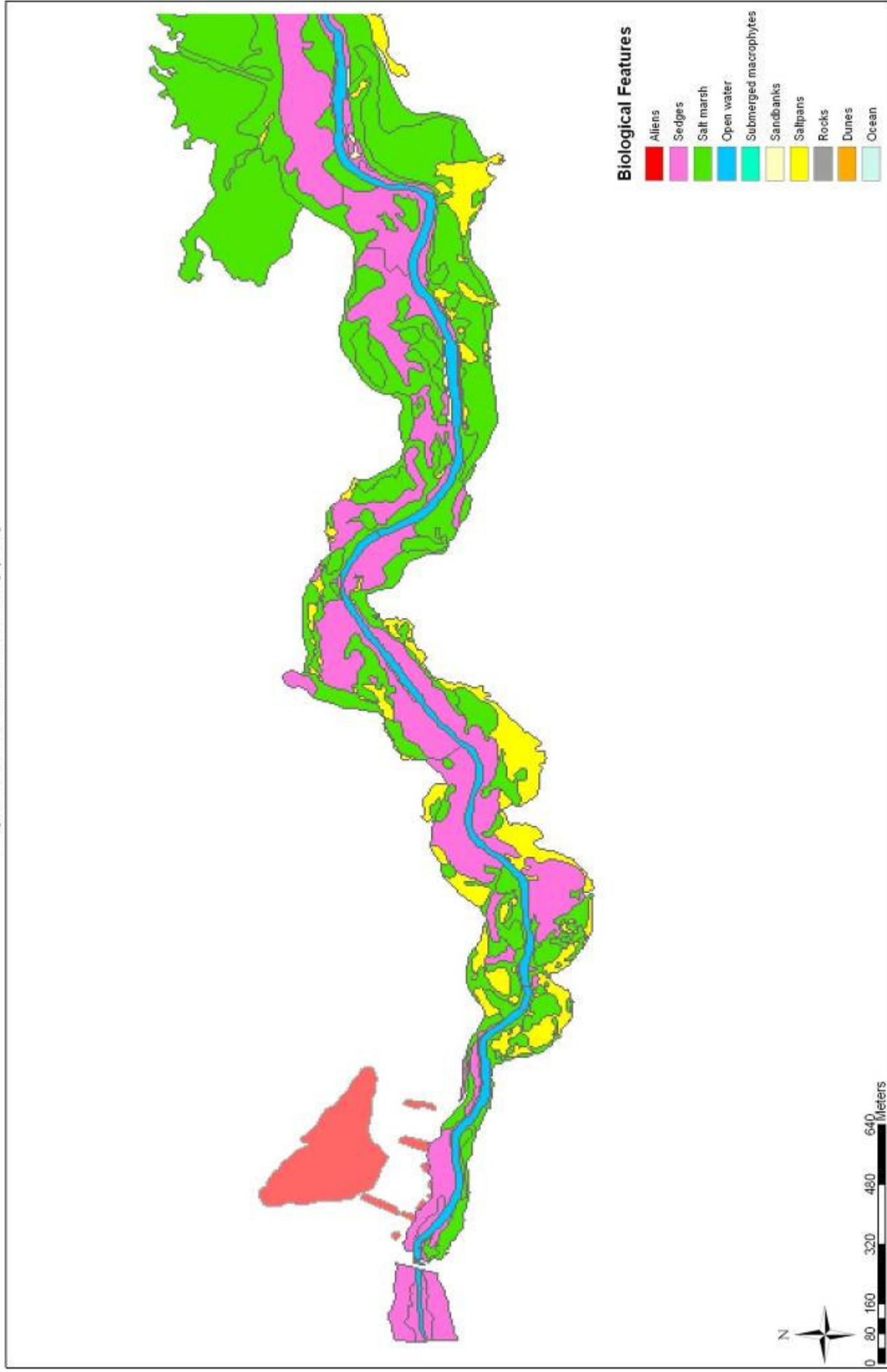


Figure 4: Management Action Zonation Plan

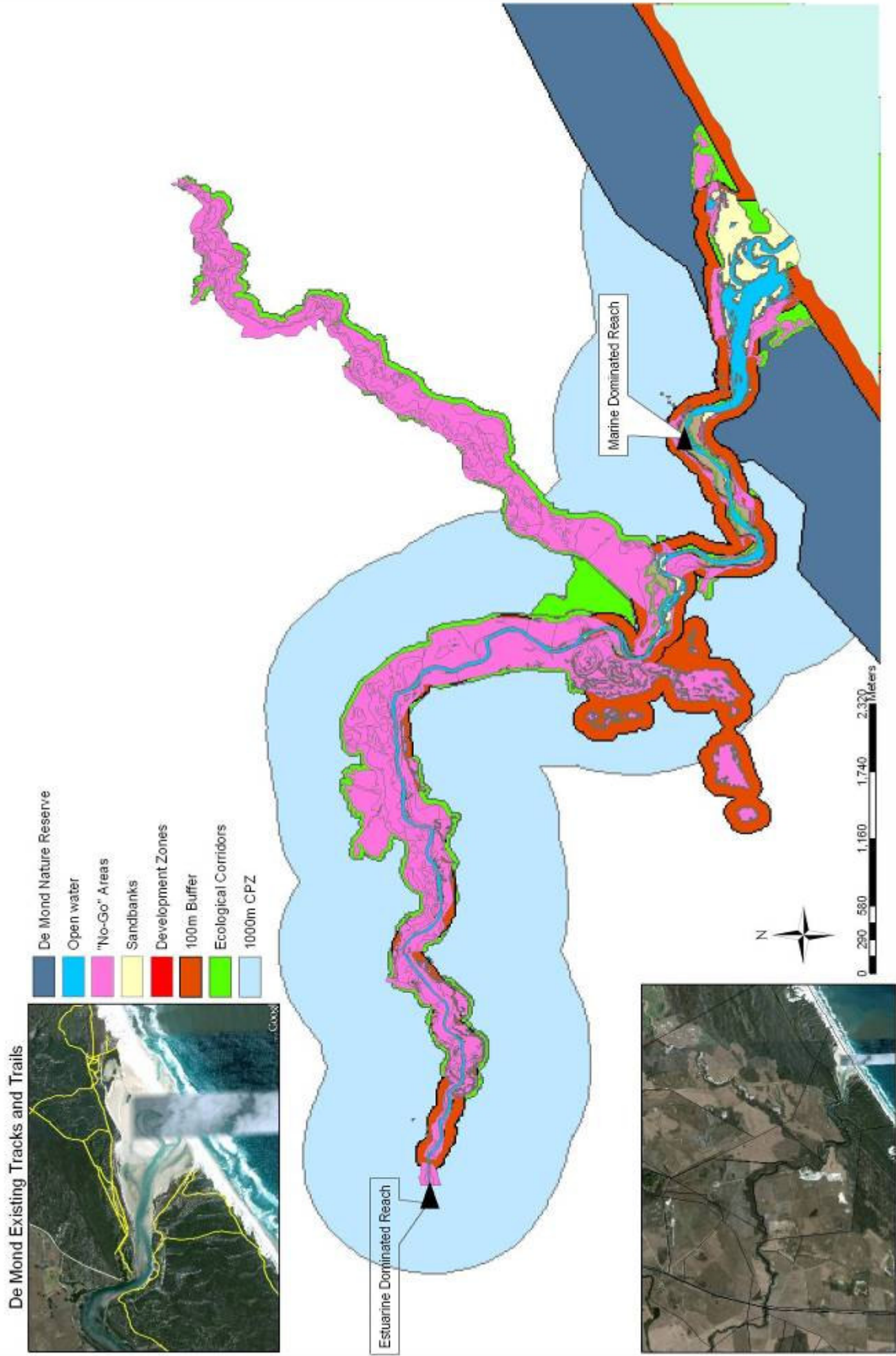


Figure 4A: Management Action Zonation Plan

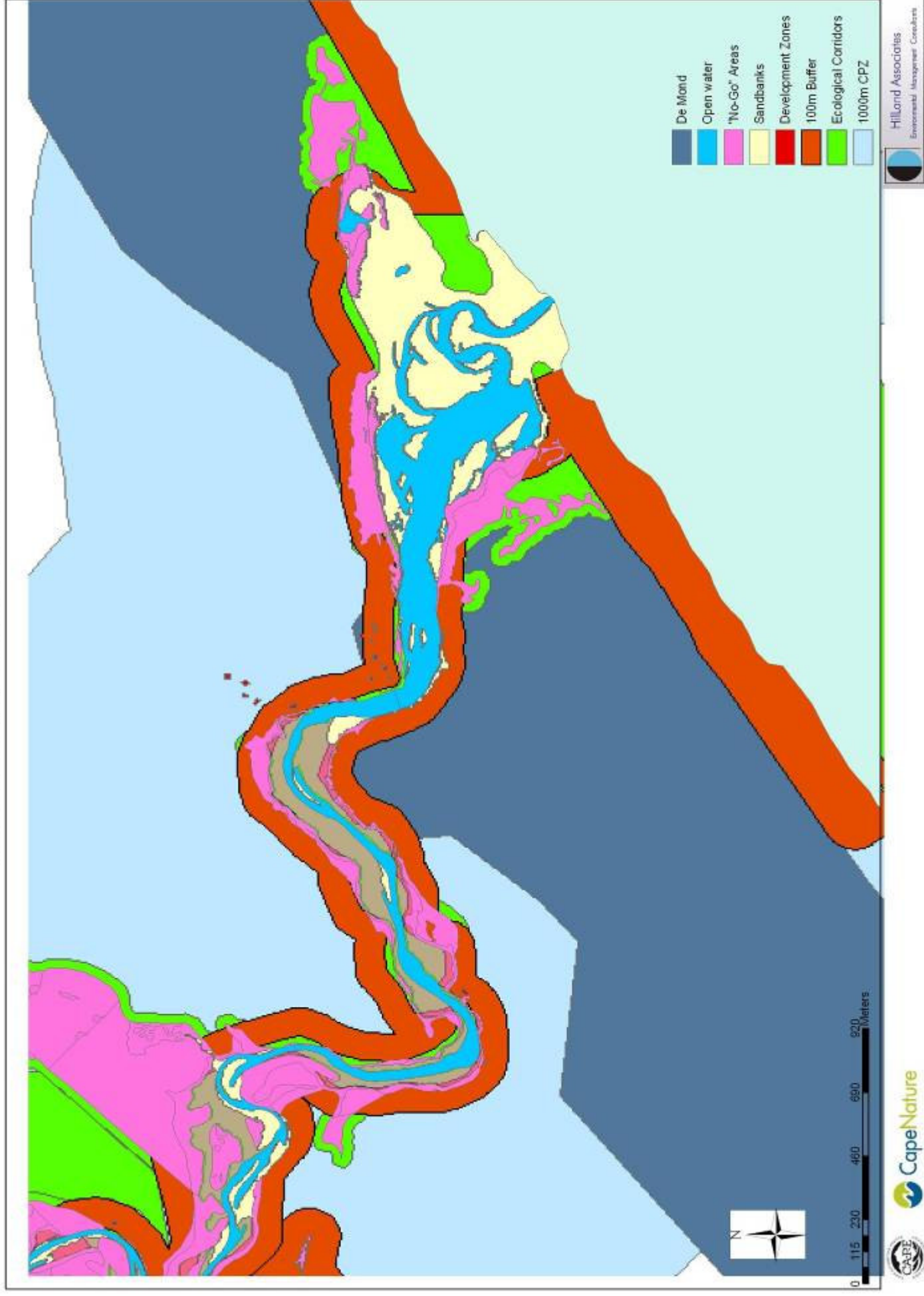


Figure 4B: Management Action Zonation Map

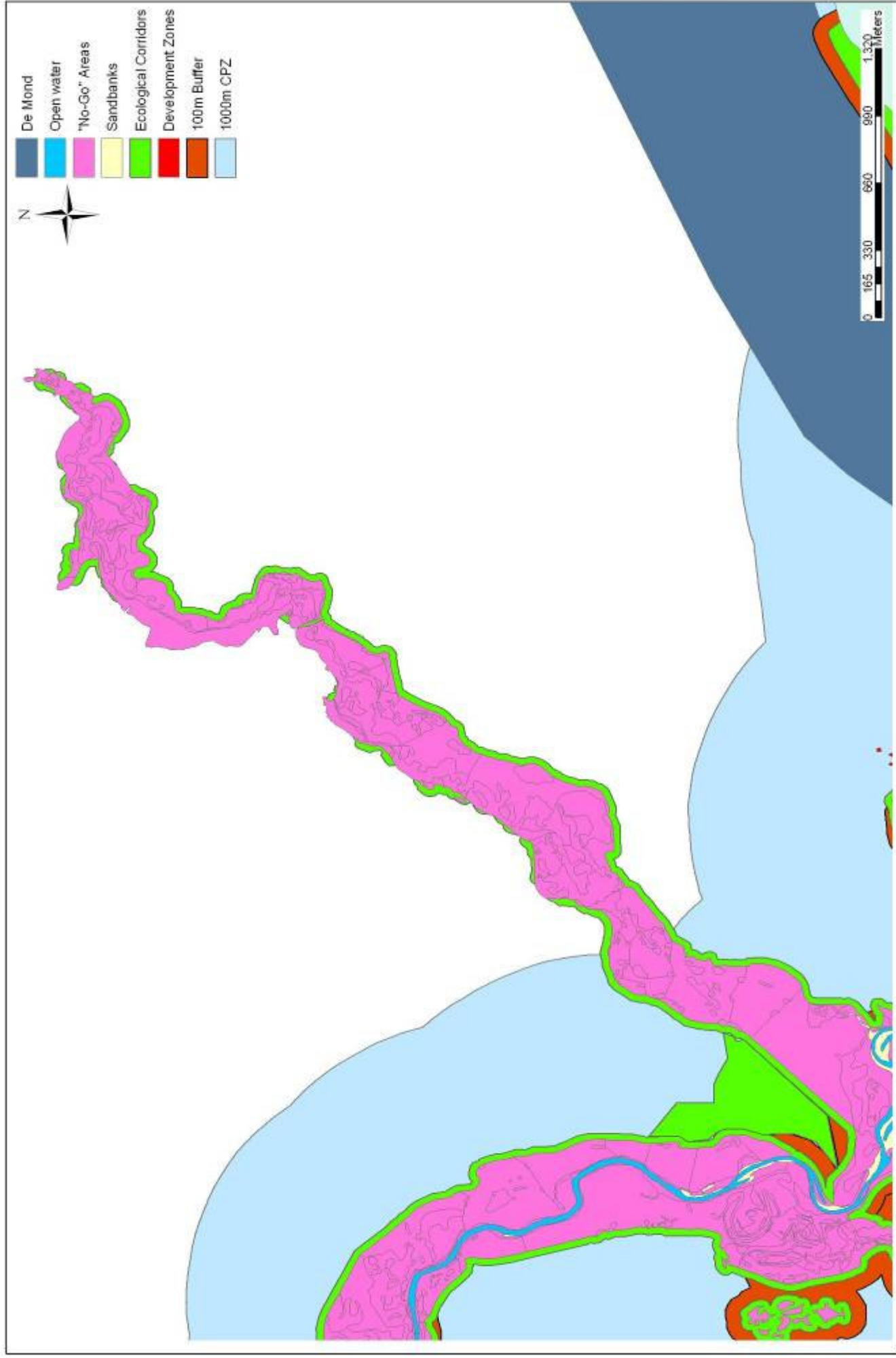


Figure 4C: Management Action Zonation Plan

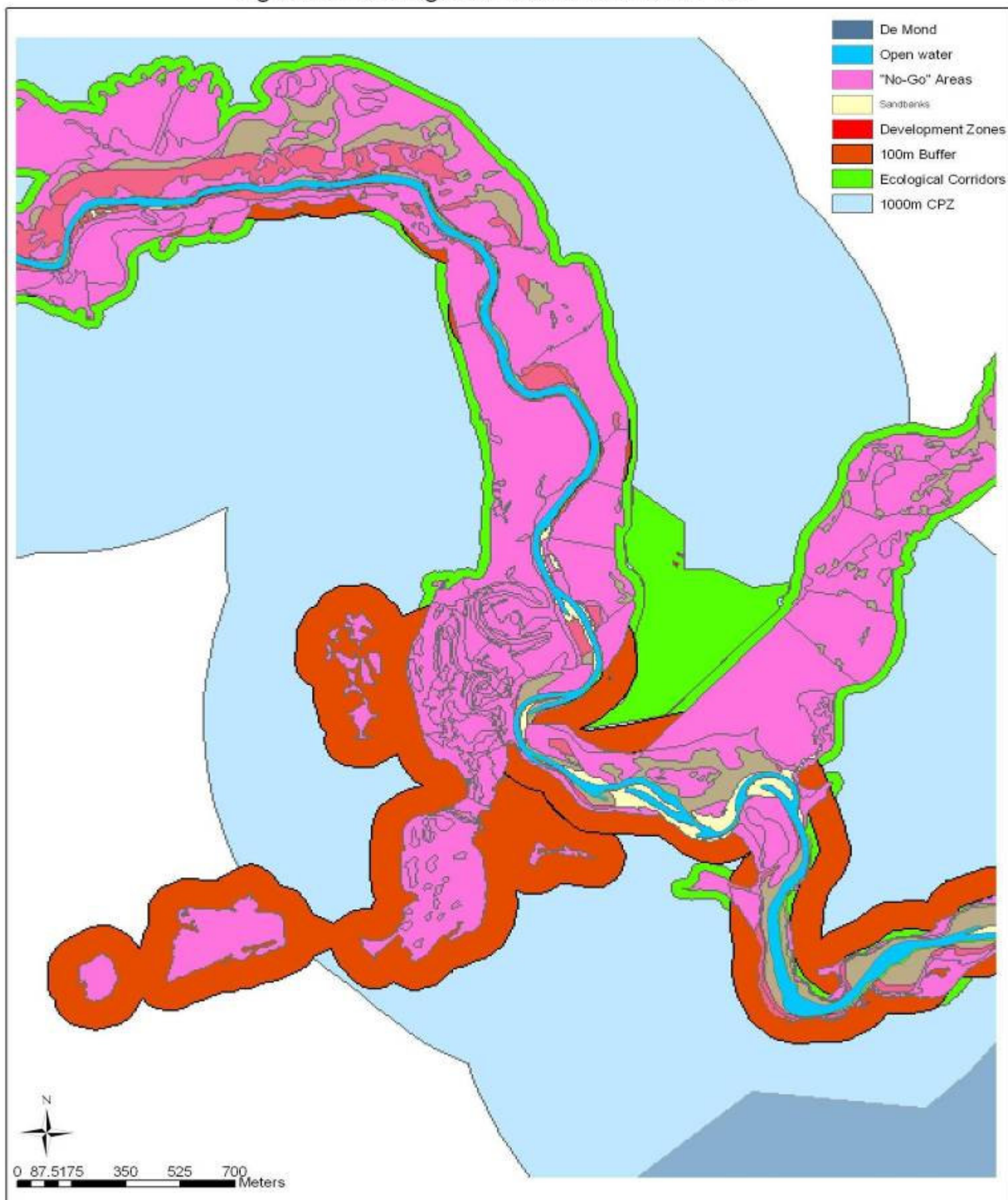


Figure 4D: Management Action Zonation Map

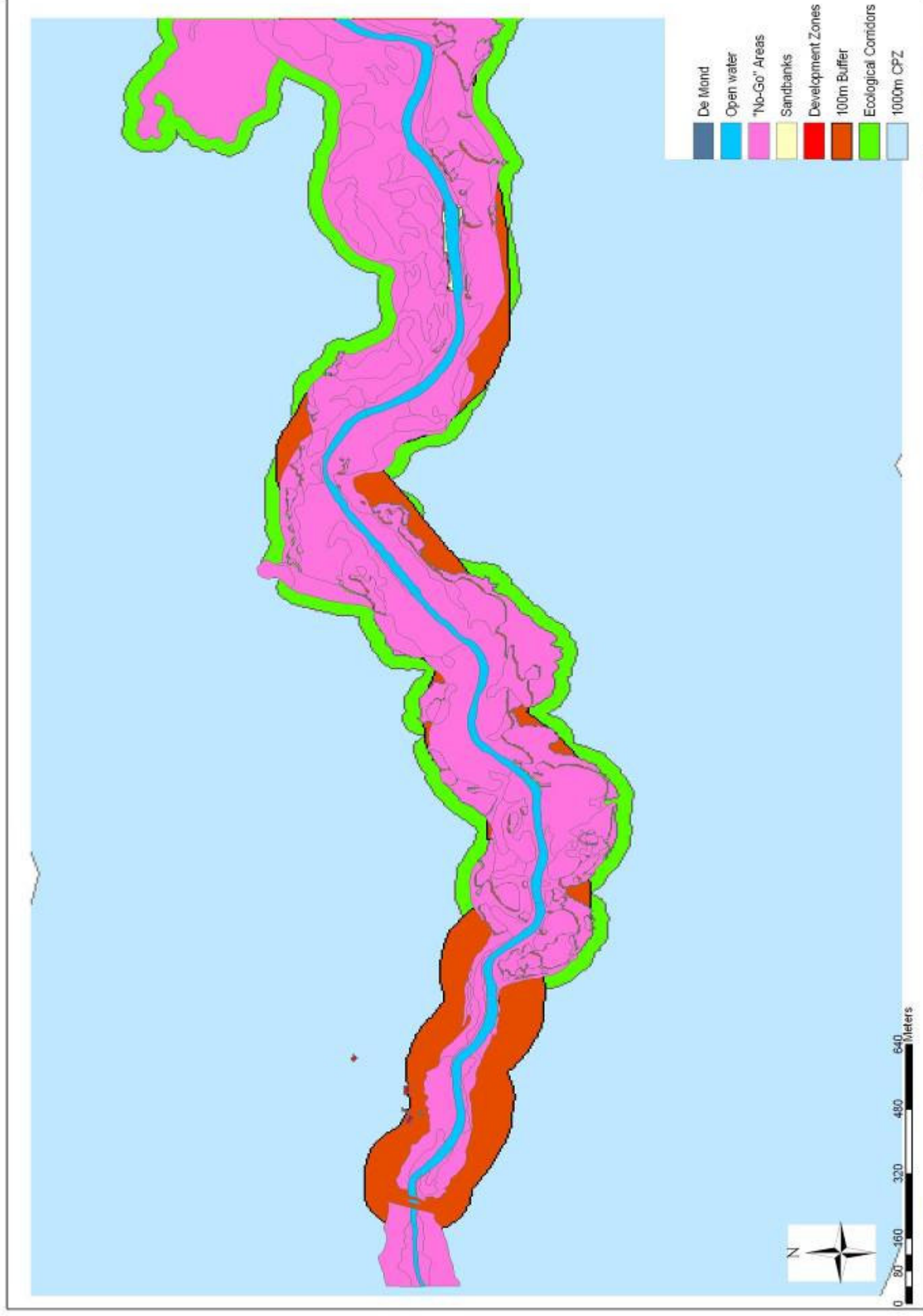
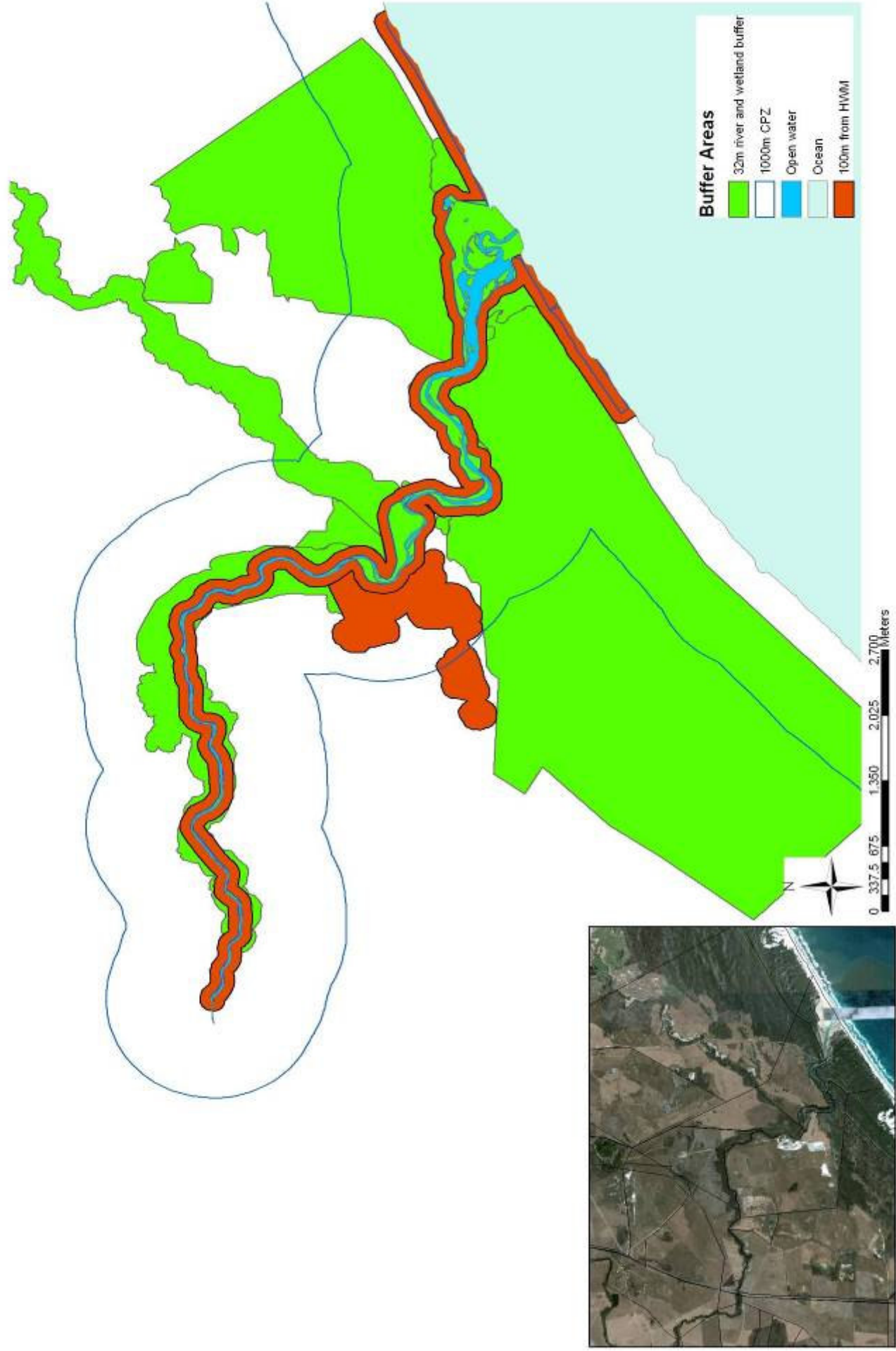


Figure 5: River Buffer Areas



Appendix 2 – Situation Assessment

SITUATION ASSESSMENT

for

HEUNINGNES ESTUARY



Compiled by: HillLand Associates

Prepared for



HillLand Associates Report
AGU07/596/02
February 2008

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SITUATION ASSESSMENT HEUNINGNES ESTUARY

Submitted for:
Stakeholder Information and Comment

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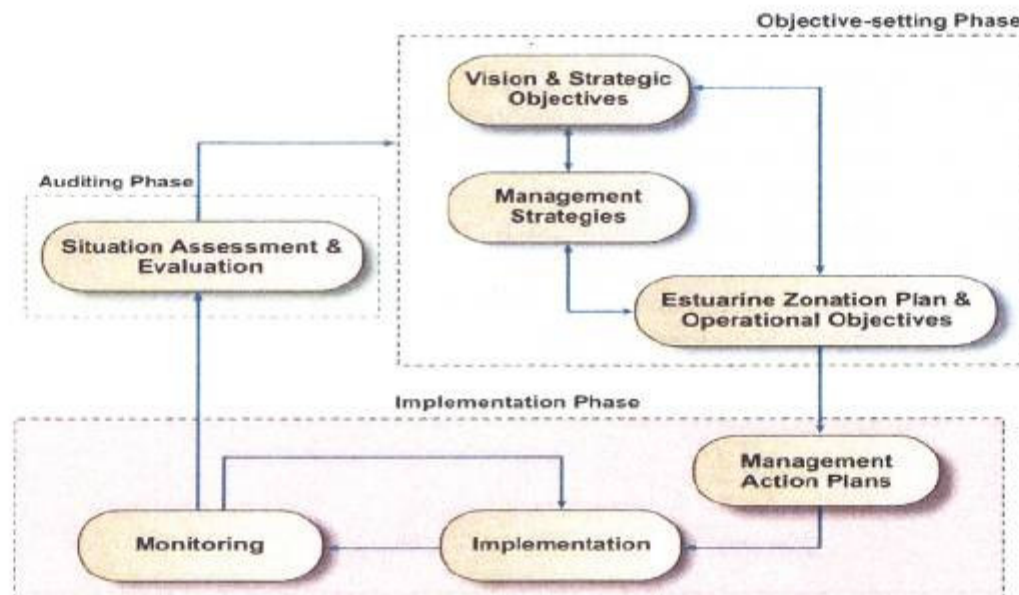
GLOSSARY OF ABBREVIATIONS

ABI	Agulhas Biodiversity Initiative
CAPE	Cape Action for People and the Environment
CFR	Cape Floral Region
CITES	Convention for the International Trade in Endangered Species
CSIR	Council for Scientific and Industrial Research
DEAT	Department of Environmental Affairs and Tourism
DWAF	Department of Water Affairs and Forestry
EC	Electrical Conductivity
EMP	Estuary Management Plan
GEF	Global Environment Facility
HROA	Heuningnes Riparian Owners Association
IDP	Integrated Development Plan
MCM	Marine and Coastal Management
MLRA	Marine and Living Resources Act
MPA	Marine Protected Area
NBSAP	National Biodiversity Strategy
NEMA	National Environmental Management Act
NGO	Non Government Organisation
NWA	National Water Act
ODM	Overberg District Municipality
SANParks	South African National Parks
SDF	Strategic Development Frameworks
SMA	Special Management Area
TDS	Total Dissolved Solids
UNDP	United Nations Development Program

1. INTRODUCTION

Hilland Associates, independent environmental practitioners, have been appointed by CAPE (Cape Action for People and the Environment) Estuaries Program, in conjunction with CapeNature, to develop a Management Plan for the Heuningnes Estuary. This forms the first part of a comprehensive initiative to develop management plans for all the estuaries within the Cape Floral Region (CFR). The Situation Assessment aims to provide an overview of the current status of the Heuningnes Estuary, identify areas of deficiency in terms of management and provide a platform for the Estuary Management Plan (EMP) envisaged. The document has been structured in order for the information to be pertinent to any and all readers.

The following flow diagram gives an indication of the process still to be followed.



The Situation Assessment will be used to inform the vision and strategic objectives for the Heuningnes Estuary as well as the management strategies and operational objectives.

CAPE is a long-term program initiated by the Government of South Africa for biodiversity conservation. The program aims to protect and reduce pressure on representative samples of biodiversity. CAPE identified 62 estuaries within the CFR.

The estuarine habitat forms an important interface between the freshwater river systems and the saltwater marine environment. They provide habitat for a variety of fauna and flora, act as nurseries for several fish species, provide a food source for both man and others and are a great source of recreation for people. Due to the vast

range of goods and services that an estuary provides, excessive use and mismanagement is a common occurrence.

Disturbance within an estuary has far reaching consequences and correct management is a vital tool in the task of sustainable development. Environmental legislation has often overlooked the importance of this interface, concentrating rather on rivers or seas themselves. CAPE and CapeNature have been tasked with the development of estuarine management plans in order to correct this oversight.

6 of the 62 estuaries were identified as part of the pilot project to provide management plans for each individual site. The estuaries identified are Heuningnes, Breede, Knysna, Olifants, Klein and the Gamtoos.

1.1. Vision and Strategic Objectives

The findings of literature reviews as part of the Situation Assessment as well as the outcomes of the initial stakeholder engagement process have led to the formulation of this vision:

"The sustainable, non-commercial management of this near pristine RAMSAR site while preserving and promoting biodiversity, fish recruitment and controlled Eco-Tourism Activities as well as the promotion of sustainable agriculture practices along the estuary banks for the benefit of present and future generations."

This vision along with the operational objectives needs to be evaluated against existing management strategies.

The following strategic objectives have been defined for estuaries within the Cape Floral Region.

Strategic Objectives for the Estuaries of the CFR:**Living resources:**

Achieve targets for ecosystem biodiversity and health in terms of the long-term habitat persistence of habitats, species, community structure, biomass and functioning by 2015.

Water quantity and quality:

Determine, implement, monitor and review RQOs (taking into account public health) in order to maintain or restore estuarine structure and function in the best attainable state for five priority estuaries within the CFR by 2010.

Land-use and infrastructure planning:

Define estuarine areas, assess their current status and values and formulate appropriate integrated management plans to regulate development and other activities impacting on them, with particular reference to cumulative impacts, by 2008 (focusing on mechanisms).

Institutional and management structures:

Cooperatively manage estuaries through relevant institutions of management comprising appropriate spheres of government and civil society and according to appropriate management plans by 2010.

Climate change:

Minimise the detrimental impacts of predicted climate change by 2010 through:

- 1) taking a long-term precautionary approach to infrastructure development and water-resource planning;
- 2) influencing land management in upper and middle catchments to reduce impacts on estuaries; and
- 3) promoting long-term sustainable livelihoods through estuarine management that minimises risks.

Education and awareness:

Generate education and awareness regarding CFR estuaries by 2010, having:

- 1) contributed to integrated, collaborative and informed action and decision making regarding estuaries;
- 2) contributed to a sustainable quality of life;
- 3) promoted good management practices that will sustain healthy estuarine functioning;
- 4) raised awareness of the intrinsic value of estuaries and developed a sense of ownership of estuaries not only among local communities but also throughout South Africa; and
- 5) raised awareness of and insight into the legal context and obligations of all levels of government (national, provincial, local and community).

2. STUDY SITE

2.1. Locality

The Heuningnes Estuary is located south of Bredasdorp and west of Arniston in the Overberg region of the Western Cape in South Africa. The mouth of the estuary has the coordinates 34° 42' 49"S and 20° 07' 03" E.

The river and estuary falls within the Agulhas Plain, an area that contains one of the largest lowland fynbos and Renosterveld habitats within the CFR. The diversity of habitat types, wetland ecosystems, red data plant species and local endemics is unmatched in the CFR.

Heuningnes is fed by two major tributaries, namely the Nuwejaars and Kars Rivers. The catchment of the Heuningnes has been given as 1 938km² (Bickerton, 1984). The estuary has been recorded as being tidal as far up as 12kms upstream of the mouth, although the majority of the tidal influence is within the first 2kms. The causeway that was built in the early 1940's to provide access across the river impeded the estuary, affecting the tidal influence. Since its removal, the tidal influence is noticeable further upstream. For the purposes of this EMP, it has been decided to delineate the area from the Bredasdorp / Struisbaai road to the mouth of the estuary. See Figure 1.

2.2. Climate

The region has a Mediterranean climate with hot dry summers and cold wet winters. Average monthly rainfall ranges between 20mm (December) and 52mm (April) with a mean annual measurement of 500mm.

Temperatures on average range between 10°C in winter and 28°C in summer. Winds are mainly from the southeast and southwest in summer and westerly in winter.

2.3. Historical Context

The Heuningnes estuary has been used by man for centuries. The coastal area has a rich history of shipwrecks and strandlopers. The area's suitability for intensive agriculture has been utilised since the early 1900's.

According to Bickerton (1984), old Admiralty charts of the area show minor sand drifts along the Bredasdorp coast and it is highly likely that the mouth of the Heuningnes remained open for the most part due to the naturally stabilized sand dunes. The destabilization of the dunes appears to be the impact of agricultural practices, particularly from grazing and the trampling effect of stock. This impact on the dune

system would have allowed the movement of sand to occur, thus causing the closing of the mouth and the resultant upstream flooding.

In 1937 two prominent farmers in the district, Major P Van der Byl and Mr M van Breda, approached the Minister of Agriculture and Forestry requesting that they expropriate the land around the estuary mouth and begin stabilising the surrounding sand dunes. The buying of the land began in 1939 and the dune reclamation work at De Mond was started in 1942. The mouth of the estuary has been kept open artificially since then, except for a 3-year period between 1973 and 1976. CapeNature currently keeps the mouth open as part of their management strategy and agreements with farmers upstream. There has been some debate regarding this practice, an issue that will be dealt with in the EMP.

The lower portion of the estuary is managed by CapeNature as a provincial nature reserve (De Mond Nature Reserve). The reserve was proclaimed under the auspices of the Department of Water Affairs and Forestry in 1986.

3. CURRENT MANAGEMENT STRATEGIES

3.1. Management Bodies

The Heuningnes falls under several management visions by various organisations. One of the aims of the development of the management plan is to consolidate these strategies, thus providing an enforceable product which takes into consideration all aspects of the estuary ie recreation, agriculture, biodiversity. The various bodies currently involved in the management of the Estuary are described below.

3.1.1. Heuningnes Riparian Owners Association (HROA)

The HROA was established in 1983 by the Van Breda, Albertyn, Kilpin and Findlay families to preserve the unspoilt nature of the Heuningnes River. The properties in question are all agricultural and border directly onto the river.

De Mond Trust, made up of the Kilpin family members controls access to De Mond farm. They have determined a "carrying capacity" for the property and restrict the recreational numbers accordingly.

Apart from the preservation of the sense of place along the river, the HROA has also made a commitment to protect the natural environment by protecting indigenous fauna and flora and removing alien vegetation.

Information received from the HROA indicates that several management plans dated from 1983/84 through to 2003 have been presented for the Heuningnes Estuary.

3.1.2. Nuwejaars Wetlands Special Management Area (SMA)

This SMA was established in August 2004 to facilitate and manage the ecology of the Nuwejaars river. Although it has no direct bearing on the Heuningnes in terms of its jurisdiction, it is important in that it provides the catchment area of the Heuningnes with a sustainability model.

The implementation of SMA's have been identified as a priority in the Overberg Spatial Development Framework (SDF).

3.1.3. De Mond Nature Reserve

De Mond Nature Reserve encompasses the lower regions and mouth of the Heuningnes Estuary. The De Mond Forest Reserve was established by the then Department of Agriculture and Forestry in 1939 in order to stabilise sand dunes to prevent upstream flooding of agricultural land. An area of 419ha, Portion 3 of 269 Bushy Park was transferred to the Union of South Africa in 1940. During 1977, 256ha of Section 8 of the farm Zoetendalsvlei and 279ha of the farm Bushy Park (east of the reserve) were expropriated for the purpose of dune stabilisation. A total area of 954ha.

In 1986, De Mond was proclaimed a nature reserve under the Forest Act and became a satellite station to De Hoop Nature Reserve under the Chief Directorate of Nature and Environmental Conservation of the Cape Provincial Administration. The dune stabilisation program was then terminated to preserve natural processes. De Mond is currently managed by CapeNature.

The reserve has been divided into 6 zones (management plan 1991), namely terrain, dune stabilisation, shifting sand, fynbos, estuarine and littoral zones. Nature Conservation prepared this management plan on project-based criteria as opposed to overall management strategies.

The reserve is currently managed under the Nature and Environmental Conservation Ordinance (Ordinance 19 of 1974). However, with the introduction of the Marine Living Resources Act (Act 18 of 1998), the jurisdiction of the estuarine environment was given to Marine and Coastal Management (MCM). The new Integrated Coastal Development Bill due to be tabled soon adds to the complex management strategies imposed on this estuary. The bill aims to provide an overarching national estuarine management protocol and management plans for individual sites.

The implementation of an overarching management plan requires the cooperation of various entities.

3.1.4. Agulhas National Park

The Agulhas National Park was proclaimed in 1998 and the focus of its establishment is the conservation of the internationally important biodiversity associated with the threatened lowland fynbos, notable wetlands and marine environment of the Agulhas Plain. The Agulhas National Park is under the jurisdiction and management of the South African National Parks (SANParks).

3.1.5. Cape Action for People and the Environment (CAPE)

In September 2000, the South African Government approved the Cape Action Plan for the Environment (CAPE Strategy), prepared with assistance from the GEF/ World Bank, under the Cape Peninsula Biodiversity Conservation Project. The CAPE strategy constitutes the first strategy developed for an entire biodiversity hotspot. The Government of South Africa is now moving to implement the Strategy through a comprehensive twenty-year national programmatic framework entitled Cape Action for People and the Environment (C.A.P.E.).

The long-term objective is to protect and where appropriate restore a representative sample of the biodiversity of the CFR, to optimise global and domestic environmental benefits. Under C.A.P.E., the policy foundations, institutional arrangements, capacities, financial instruments, and other tools needed to achieve this objective would be systematically developed, allowing for the effective integration of conservation objectives in the productive sectors. A suite of different conservation approaches are to be designed, tested, adapted and replicated to scale, accommodating the range of ecological, socio-economic and institutional conditions found in the CFR.

Over its 20 year timescale, C.A.P.E. aims at expanding the area under effective conservation management, supported by a strong policy framework, capacitated institutions, new financial mechanisms and other instruments needed to assure the sustainability and cost-effectiveness of management. An overriding objective is to create the foundations for a 'biodiversity economy': linking the environmental benefits of the CFR directly to economic growth and livelihood creation. A key strategic design feature of C.A.P.E. is a phased approach:

Activities are being scheduled over 20 years, providing an adequate time budget to systematically address current and emergent threats to biodiversity and ensure sustainable management. Interventions would be phased, with 3 distinct stages anticipated. From an international perspective, C.A.P.E. represents the most highly

developed of a number of biome-wide conservation initiatives being undertaken, and C.A.P.E.'s approach to strategic planning at regional scale is being used as a model in many regions.

Implementation will pilot a number of innovative approaches and will provide replicable experiences and lessons both within South Africa and beyond.

3.1.6. The Agulhas Biodiversity Initiative (ABI)

ABI is a joint partnership between SANParks, Flora and Fauna International and UNDP GEF and forms an integral part of the CAPE Programme. The Initiative aims to establish a sustainable conservation economy through inter-linked conservation, development and socio-economic activities across both formal conservation areas and private and communal land.

The program is designed to address the threats to the globally significant lowland fynbos biodiversity of the Agulhas Plain and to improve the livelihood of local communities living in the Agulhas Plains through a multiplicity of inter-linked conservation, development and socio-economic activities. ABI has four major components:

1. **Conservation planning and management systems in the Agulhas Plains:** increase of land under conservation; institutional needs assessment and capacity building of key stakeholders; development of a collaborative conservation management system between national and provincial parks, private reserves and conservancies; fire management; identification of priority areas for alien species clearance and assessment of the potential to declare the area a biosphere reserve.
2. **Sustainable use of wild fynbos flowers:** research on current harvesting; implement sustainable levels of harvesting; monitoring program for harvested wild fynbos flowers; establishment of a certification system for sustainably harvested flowers; micro-enterprise development and market development.
3. **Nature-based tourism strategy:** assessment of potential tourism opportunities; capacity building for local communities to participate in nature based tourism; development and implementation of a tourism strategy for the Agulhas Plains.
4. **Build local support for biodiversity conservation in the Agulhas Plain.**

3.1.7. RAMSAR

The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. There are presently 158 Contracting Parties to the Convention, with 1718 wetland sites, totaling 159 million hectares, designated for inclusion in the Ramsar List of Wetlands of International Importance.

The Heuningnes Estuary was nominated as a Ramsar status with regard to the waterfowl dependant on the site as habitat, these being the Damara tern (*Sterna balaenarum*) and Caspian tern (*Hydroprogne caspia*). See attached the motivation for the nomination.

3.1.8. Overberg District Municipality

The Integrated Development Plan (IDP) of the Overberg District Municipality (ODM) acts as a "direction setting guide" for the district and all local municipalities within the district for at least a time span of 10 years at a time. This means that revisions of the IDP will take place at regular intervals and will give a good indication of targets met and shifting trends.

The Overberg Spatial Development Framework (SDF) plays an integral part of the IDP and indicates the spatial implications of the IDP.

In terms of the Heuningnes estuary, the IDP and SDF will play important roles in the management strategies and its enforceability. The IDP states quite clearly in its Priority Building Blocks and Strategies the intentions for the environment, for example some of the key goals are the Sustainable Environmental Management (non-negotiable), Rehabilitation of the natural and urban environment and Development of National Parks and Nature Reserves (support role).

The SDF builds on the understanding of the three global imperatives, those being human well-being, environmental integrity and economic efficiency. In order for development to be considered sustainable, all three of these principles must be applied.

The first approach of the SDF is the land use classifications whereby different priorities and status are given to different areas. Based on these, various forms of conservation mechanisms may be implemented. See the categories for the ODM as provided below.

Using the structures and strategies of both the IDP and the SDF, additional conservation status can be applied to the Heuningnes estuary.

CATEGORY	DESCRIPTION	CLASSIFICATION CRITERIA & PURPOSES
Category A	Core Area (Consistent with UNESCO's Biosphere Reserve 'Core Areas').	a) Areas of high conservation importance (highly irreplaceable) that must be protected from change. b) Only <i>non-consumptive land-uses</i> may be allowed under strict conditions. c) No development allowed.
Category B	Buffer Area (Consistent with UNESCO's Biosphere Reserve 'Buffer Area').	a) Serving as a buffer between Category A Areas and Category C Areas. b) Providing an appropriate interim classification for conservation-worthy areas that do not have statutory protection, including ecological corridors, and former forestry and agricultural areas that are worthy of rehabilitation. c) Appropriate sustainable development and nonconsumptive land-uses may be allowed conditionally.
Category C	Agricultural areas (Consistent with UNESCO's Biosphere Reserve 'Transition Area').	a) Rural areas where extensive and intensive agriculture is practiced. b) Forestry areas.
Category D	Urban-related areas (Consistent with UNESCO's Biosphere Reserve 'Transition Area').	Accommodating a broad spectrum of nodal urban-related settlements and associated services and infrastructure.
Category E	Industrial areas	Representing the industrial areas where very high intensity of human activity and consumptive land-use occur.
Category F	Surface infrastructure and buildings	All surface infrastructure and buildings not catered for in the above categories, including roads, railway lines, power lines, communication structures, etc

3.2. Current Management SWOT Analysis

After review of the background information and comment from stakeholders, the following SWOT analysis of the estuary under the current management practices has been prepared. These will be expanded on and detailed within the EMP.

3.2.1. Strengths

- The RAMSAR status of the estuary
- The protected status of the De Mond as a provincial Nature Reserve
- Riparian owners commitment to biodiversity conservation
- Lack of high density infrastructure along the estuary
- Commitment in terms of the IDP and SDF

3.2.2. Weaknesses

- Capacity issues within Cape Nature

- Communication gaps between management authority and the Riparian Owners
- Access control to the estuary
- Data Collection - both scientific and statistical (users)
- Multiple entities controlling legal aspects of the estuary
- Problems with enforcement

3.2.3. Opportunities

- Establishment of honorary conservation officers to assist with management and law enforcement
- Establishment of a Marine Protected Area (MPA)
- Research opportunities regarding the effects of open mouth systems
- Possible eco tourism with emphasis on sustainability

3.2.4. Threats

- Biodiversity and river dynamics as a result of management practices
- Public liability due to sometimes uncontrolled access to private property
- Non Implementation of management plans
- Over- and unlicensed abstraction of water upstream
- Pollution both from the sea and upstream
- Waste Water Treatment Plant – Spillages during flooding
- Over utilisation of bait and fish stocks
- Poaching
- Alien Vegetation

4. LEGISLATIVE REVIEW

The Government of South Africa has long demonstrated a commitment to protecting biodiversity. The Constitution of South Africa guarantees the right to a healthy environment and environmental protection through conservation, pollution control and sustainable development.

Policy frameworks have been substantially transformed in the Post apartheid era. The Department of Environmental Affairs and Tourism (DEAT) has published a White Paper on Conservation and Sustainable Utilization of South Africa's Biological Diversity in 1997 and is in the process of developing the National Biodiversity Conservation Strategy and Action Plan (NBSAP) with assistance from GEF/UNDP.

The country has ratified the Ramsar and Bonn Convention, World Heritage Convention, Convention on International Trade in Endangered Species of Flora and

Fauna (CITES) and the Convention on Biological Diversity. In addition, the Government is in the process of developing a biome management program to advance biodiversity conservation at the bioregional scale. Eco-regional Conservation Plans developed for 4 regions (including the Agulhas plain), enjoy widespread recognition and institutional support and provide a unique platform to galvanize collective action and commitment.

National Biodiversity, Protected Area, Agricultural Resource Use and Land Management legislation is all currently under review or being redrafted. This provides a significant opportunity for successful pilot projects to lead policy development. Strict alien plant control laws have been in place since early 2001 but suffer from a lack of implementation and compliance provisions. Provincial ordinances enabling private conservation initiatives (co-operative conservation management) and affecting resource utilization (such as flower harvesting) date from 1974 and require significant amendments to reflect advances in scientific understanding, and assure integration into national legislation.

The National Environmental Management Act (NEMA, Act 107 of 1998) provides for the comprehensive control of development within the environment. Add to that the Marine Living Resources Act and the proposed Integrated Coastal Development Act, and the legislative watchdogs are all in place. The Department of Agriculture supports sustainable environmental practices in the form of its Conservation of Agricultural Resources Act (CARA).

The concern in many sectors is not the legislation, but the enforcement capabilities applicable to the legislation.

The following is a more in depth look at the various conventions and legislation.

4.1. Bonn Convention (CMS)

Convention on the Conservation of Migratory Species of Wild Animals. The Convention was a response to the need for nations to co-operate in the conservation of animals that migrate across their borders. These include terrestrial mammals, reptiles, marine species and birds. Special attention is paid to endangered species. South Africa is a major partner in this Convention as it is the terminus for many of the migratory species, both the Palearctic (birds) and the Antarctic species (whales and birds).

South Africa acceded to the Convention in December 1991. This Convention is the most promising of conventions for providing conservation status to southern African breeding seabirds.

4.2. World Heritage Convention

At the General Conference of the United Nations Education, Scientific and Cultural Organisation meeting in Paris in November 1972, the World Heritage Convention was ratified. The following is an excerpt from the convention vision:

- Noting that the cultural heritage and the natural heritage are increasingly threatened with destruction not only by the traditional causes of decay, but also by changing social and economic conditions which aggravate the situation with even more formidable phenomena of damage or destruction,
- Considering that deterioration or disappearance of any item of the cultural or natural heritage constitutes a harmful impoverishment of the heritage of all the nations of the world,
- Considering that protection of this heritage at the national level often remains incomplete because of the scale of the resources which it requires and of the insufficient economic, scientific, and technological resources of the country where the property to be protected is situated,
- Recalling that the Constitution of the Organization provides that it will maintain, increase, and diffuse knowledge by assuring the conservation and protection of the world's heritage, and recommending to the nations concerned the necessary international conventions,
- Considering that the existing international conventions, recommendations and resolutions concerning cultural and natural property demonstrate the importance, for all the peoples of the world, of safeguarding this unique and irreplaceable property, to whatever people it may belong,
- Considering that parts of the cultural or natural heritage are of outstanding interest and therefore need to be preserved as part of the world heritage of mankind as a whole,
- Considering that in view of the magnitude and gravity of the new dangers threatening them, it is incumbent on the international community as a whole to participate in the protection of the cultural and natural heritage of outstanding universal value, by the granting of collective assistance which, although not taking the place of action by the State concerned, will serve as an efficient complement thereto,
- Considering that it is essential for this purpose to adopt new provisions in the form of a convention establishing an effective system of collective protection of the cultural and natural heritage of outstanding universal value, organized on a permanent basis and in accordance with modern scientific methods.

The Overberg already has a World Heritage Site in the form of De Hoop Nature Reserve. South Africa became a signatory of the Convention in 1999.

4.3. Convention on International Trade in Endangered Species of Flora and Fauna (CITES)

CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. CITES was drafted as a result of a resolution adopted in 1963 at a meeting of members of IUCN (The World Conservation Union). The text of the Convention was finally agreed upon at a meeting of representatives of 80 countries in Washington DC., United States of America, on 3 March 1973, and on 1 July 1975 CITES entered in force.

The commercial value of wildlife has stimulated the sustainable use industry and has, since 1960, resulted in the establishment of conservancies, game ranches, private nature reserves and collaborative reserves. There are presently some 9 000 privately owned game ranches in South Africa, expanding at a rate of 300 000ha per annum. The contribution of these areas in maintaining our unique biodiversity is incalculable, its role in the social and economic development of the country illustrated by the following statistics:

- Private and community managed nature areas cover between 15 and 20% of the respective provincial land surface;
- They represent capital investments of approximately R6 billion;
- They provide fifteen times more job opportunities than cattle farming (and more skilled), and result in substantially higher per capita income; and
- Are key components in the expansion of South Africa's tourism industry.

During 1997 the hunting industry generated an income in excess of R176 million from day tariffs and trophy fees by the 7 500 foreign hunters and their parties. This figure excludes income from other sources such as air travel and personal expenses and taxidermy costs. In South Africa the international wildlife trade involves a wide range of role players, ranging from plant and animal breeders to professional hunters, each with its associated support staff. For the period January 1981 to March 1995 South Africa has exported more than 238 000 succulent plants and more than 790 000 seedlings.

Regulation of international trade in wildlife and their products is achieved through the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). This convention was signed in 1973 and entered into force in July 1975. South Africa deposited its instrument of ratification of CITES on 15 July 1975 and the Convention entered into force for South Africa on 13 October 1975. The Department of Environmental Affairs and Tourism is responsible for co-ordination and policy determination and international liaison.

4.4. Convention on Biological Diversity

Biological diversity - or biodiversity - is the term given to the variety of life on Earth and the natural patterns it forms.

This diversity is often understood in terms of the wide variety of plants, animals and microorganisms. So far, about 1.75 million species have been identified, mostly small creatures such as insects. Scientists reckon that there are actually about 13 million species, though estimates range from 3 to 100 million.

Biodiversity also includes genetic differences within each species - for example, between varieties of crops and breeds of livestock. Chromosomes, genes, and DNA - the building blocks of life - determine the uniqueness of each individual and each species.

Yet another aspect of biodiversity is the variety of ecosystems such as those that occur in deserts, forests, wetlands, mountains, lakes, rivers, and agricultural landscapes. In each ecosystem, living creatures, including humans, form a community, interacting with one another and with the air, water, and soil around them.

It is the combination of life forms and their interactions with each other and with the rest of the environment that has made earth a uniquely habitable place for humans. Biodiversity provides a large number of goods and services that sustain our lives.

At the 1992 Earth Summit in Rio de Janeiro, world leaders agreed on a comprehensive strategy for "sustainable development" -- meeting our needs while ensuring that we leave a healthy and viable world for future generations. One of the key agreements adopted at Rio was the Convention on Biological Diversity. This pact among the vast majority of the world's governments sets out commitments for maintaining the world's ecological underpinnings as we go about the business of economic development. The Convention establishes three main goals: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits from the use of genetic resources.

One of the most important targets of the Convention is to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on earth.

The World Summit on Sustainable Development subsequently endorsed this target.

The Conference of the Parties adopted a framework to facilitate the assessment of progress towards 2010 and communication of this assessment, to promote coherence among the programmes of work of the Convention and to provide a flexible

framework within which national and regional targets may be set, and indicators identified.

The National Biodiversity Strategy and Action Plan (NBSAP) is a product of this Convention.

The Department of Environmental Affairs and Tourism (DEAT) has been mandated to ensure environmental responsibility through the development of an effective biosafety system that foster the safe use of technology while protecting the integrity of the environment. To do this, DEAT has created its own regulatory framework, which includes:

- The Environmental Conservation Act 73 of 1998 (to be repealed);
- The National Environmental Management Act 107 of 1998 EIA Regulations; and
- The National Environmental Management: Biodiversity Act 10 of 2004.

4.5. The National Environmental Management Act 107 of 1998 (NEMA)

Excerpt from NEMA:

(1) The principles set out in this section apply throughout the Republic to the actions of all organs of state that may significantly affect the environment and—

- shall apply alongside all other appropriate and relevant considerations, including the State's responsibility to respect, protect, promote and fulfill the social and economic rights in Chapter 2 of the Constitution and in particular the basic needs of categories of persons disadvantaged by unfair discrimination;
- serve as the general framework within which environmental management and implementation plans must be formulated;
- serve as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of this Act or any statutory provision concerning the protection of the environment;
- serve as principles by reference to which a conciliator appointed under this Act must make recommendations; and
- guide the interpretation, administration and implementation of this Act, and any other law concerned with the protection or management of the environment.

(2) Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.

(3) Development must be socially, environmentally and economically sustainable.

(4) (a) Sustainable development requires the consideration of all relevant factors including the following:

- That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;
- that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;
- that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;
- that waste is avoided, or where it cannot be altogether avoided, minimised and reused or recycled where possible and otherwise disposed of in a responsible manner;
- that the use and exploitation of nonrenewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;
- that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;
- that a risk averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and
- that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.

(b) Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practical environmental option.

(c) Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.

(d) Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.

- (e) Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.
- (f) The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.
- (g) Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge.
- (h) Community well-being and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.
- (i) The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.
- (j) The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected.
- (k) Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law.
- (l) There must be intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment.
- (m) Actual or potential conflicts of interest between organs of state should be resolved through conflict resolution procedures.
- (n) Global and international responsibilities relating to the environment must be discharged in the national interest.
- (o) The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.
- (p) The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.

(q) The vital role of women and youth in environmental management and development must be recognised and their full participation therein must be promoted.

(r) Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.

NEMA is enforced by DEAT. NEMA includes a Duty of Care clause that provides an avenue for enforcement that may not necessarily be covered by specific schedules, for example Listed Activities in the Environmental Impact Assessment regulations.

4.6. Marine Living Resources Act

To provide for the conservation of the marine ecosystem, the long-term sustainable utilisation of marine living resources and the orderly access to exploitation, utilisation and protection of certain marine living resources; and for these purposes to provide for the exercise of control over marine living resources in a fair and equitable manner to the benefit of all the citizens of South Africa; and to provide for matters connected therewith.

The Marine Living Resources Act is enforced by Marine and Coastal Management.

4.7. Conservation of Agricultural Resources Act

To provide for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water resources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.

The realities of the detrimental influence of undesirable or problem plants on the natural resources of South Africa are well known and are documented in popular, technical and scientific publications. The mandate to combat these plants rests with the Act on the Conservation of Agricultural Resources, 1983 (Act 43 of 1983) where they are defined as weeds and invaders plants. It became increasingly important to revise the regulations governing the combating of these plants because their threat is not diminishing and they are spreading at an alarming rate.

4.8. Integrated Coastal Development Act

The coast is a unique part of the environment. It is the meeting place of the land and sea – a limited spatial area that supports many human activities. The coast is a distinctive system in which a range of considerations – biophysical, economic, social and institutional – interconnect, in a manner, which requires a dedicated and integrated management approach. The coast needs to be managed as a system in order to make optimal use of the opportunities and benefits it provides. However, this system – orientated approach has failed to materialize to date and various sectors of government continue to adopt a management approach focusing on their specific sectors such as land-use planning, agriculture, water affairs, nature conservation and others.

This Bill promotes a holistic way of thinking by promoting co-ordinated and integrated coastal management, which views the coast as a system and emphasizes the importance of managing it as such.

In the past, the value of coastal ecosystems as a cornerstone for development was not sufficiently acknowledged in decision-making in South Africa. The White Paper highlights the importance of recognising the value of the coast. The value of the direct benefits obtained from coastal “goods and services” was estimated in 1998 to be about R168 billion annually, which was equivalent to about 35% of our annual Gross Domestic Product. Much of the wealth locked up in our coast continues to be wasted due to environmentally insensitive development and activities. Economic and social opportunities for wealth creation and equity are being missed and coastal ecosystems are being degraded.

The White Paper also emphasizes the importance of facilitating coastal development, which is sustainable. This requires development to be ecologically, socially and economically sustainable. For coastal development to be ecologically sustainable, it should involve protection of coastal ecosystems and sustainable use of marine and coastal resources.

For coastal development to be socially sustainable, it should emphasise public awareness and shared responsibility, empowering disadvantaged individuals and communities, including women and the poor.

For coastal development to be economically sustainable it should diversify opportunities, provide jobs and facilitate access to productive resources. The White Paper did not merely provide a vision, principles, goals and objectives for coastal management in South Africa. It took a step further by providing a Plan of Action which outlines in detail how the White Paper is to be implemented. One of the elements of this Plan of Action is Institutional and Legal Development. After the Cabinet approved the White Paper a comprehensive legal review was carried out. Its purpose was to determine whether the White Paper could be implemented in terms of existing laws. The review concluded that a dedicated Coastal Management Act was required for implementing the White Paper.

The Bill has not yet been promulgated, but is expected this year (2008).

4.9. Western Cape Nature Conservation Laws Amendment Act,

The Nature Conservation Ordinance (19 of 1974) was amended in 2000 in order to update the changes in the structure of Cape Nature Conservation and to determine the duties and priorities.

Many of the duties previously delegated to the Ordinance have been superceded by Acts such as the Marine and Living Resources Act and the Integrated Coastal Development Bill.

4.10. National Water Act

- Recognizing that water is a scarce and unevenly distributed national resource which occurs in many different forms which are all part of a unitary, inter-dependent cycle; Recognizing that while water is a natural resource that belongs to all people, the discriminatory laws and practices of the past have prevented equal access to water, and use of water resources;
- Acknowledging the National Government's overall responsibility for and authority over the nation's water resources and their use, including the equitable allocation of water for beneficial use, the redistribution of water, and international water matters;
- Recognizing that the ultimate aim of water resource management is to achieve the sustainable use of water for the benefit of all users;
- Recognizing that the protection of the quality of water resources is necessary to ensure sustainability of the nation's water resources in the interests of all water users; and
- Recognizing the need for the integrated management of all aspects of water resources and, where appropriate, the delegation of management functions to a regional or catchment level so as to enable everyone to participate.

The NWA also further describes the principles for Water Demand Management for Municipal areas, as well as sustainable and best practice for catchments. This is important in terms of estuarine management, as the catchment directly affects the estuarine environment.

The legislation and commitments described above are to provide an overview for the reader as to what is applicable to estuarine management in terms of legal perspectives. This list is far from exhaustive and acts purely as an introduction. The

EMP will address legislative regulations that directly affect the estuary in terms of strategies and objectives where necessary.

5. GOODS AND SERVICES

The estuary is a delicate but vital component of the hydrological and biodiversity aspects of a river system. It provides both tangible and intangible products to the users of the system. Disturbances or imbalances with one of these products can cause knock on effects to others.

5.1. Tourism

De Mond Nature Reserve caters for mostly low impact eco tourism activities. Tourists visiting De Mond primarily do so for recreational angling, although the walking trails (internal trails as well as a starting point from De Mond to Struisbaai) and bird watching are other popular activities.

De Mond Nature Reserve does provide limited overnight accommodation in the form of a single chalet (fully booked for months in advance).

Other tourism activities outside of the De Mond Nature Reserve are extremely limited. No private tourism initiatives linked to the estuary were identified.

5.2. Marine Living Resources

The estuary provides a popular angling destination for recreational anglers.

Although the estuary does form an important nursery for certain marine species, due to its accessibility, it is not widely, directly utilised by local communities for protein requirements. The section of coast between the mouth and Cape Agulhas and Struisbaai is widely utilised by local commercial fishermen.

According to local residents, illegal gill netting does take place within the estuary (this is described in more detail in section 6 of the situation assessment)

An actual determination of the importance of the Heuningnes Estuary as a nursery for certain marine species needs to take place.

5.3. Agricultural

Many of the farms adjacent to the estuary use groundwater for irrigation purposes. This groundwater is directly linked to the estuary. There are no visible signs of livestock accessing the estuary, but this will be determined in part 2 of the Management Plan.

5.4. Economic Benefits

The economic benefit of the estuary and aquatic ecosystems is something that is yet to be properly quantified. The economic benefits of the Heuningnes as with most other estuaries are often underestimated or not realised at all mostly due to the fact that most of the services are to passive users and not directly associated with the estuary.

A full economic determination of the estuary is not within the scope of this management plan. This, however, does provide research opportunities in order to fill this gap in knowledge

6. EXPLOITATION OF LIVING RESOURCES

As mentioned above under the goods and services provided by the estuary, the majority of utilization of living resources within the estuary is mostly limited to recreational fishing and bait collection as well as an un-quantified amount of poaching in the form of gill netting and illegal bait collection.

The number of recreational fishermen/women is limited to the number of people able to access the estuary through De Mond Nature Reserve as well as the riparian owners. Access to the estuary is also possible from the R319 road bridge, but this seems to be minimal.

Although it seems as if the utilization of living resources seems to be taking place on a small, possibly sustainable scale, this needs to be quantified along with estimation of fish stocks in order to inform management actions.

7. WATER QUANTITY AND QUALITY

Much of the details regarding the Classification, Reserve and Resource Quality are still pending from DWAF. These will be included as soon as they become available.

7.1. Water Quantity

Cleaver and Brown (2005) conclude that the headwaters of the Nuwejaars River are in the south-facing slopes of the Bredasdorp Mountains, the Koueberge to the west, the hills to the south of Elim and the north-facing slopes of the Soetanys Mountains (Toens et. al., 1998). The five tributaries of the Nuwejaars River are the Koue, Wolwegatskloof, Jan Swartskraal, Boskloof and Uintjieskuil (Bickerton, 1984). The length of the Nuwejaars River from its western most source, through Soetendalsvlei to the confluence of the vlei's overflow channel with the Kars River is 55km (Bickerton, 1984). The simulated mean annual run-off is $27,57 \times 10^6 \text{ m}^3$ (Toens et. al., 1998).

Soetendalsvlei is approximately 8 km along its north/south axis and 3 km wide at the middle and the most southerly lake in Africa (Bickerton, 1984). Soetendalsvlei is also the second largest lacustrine wetland in South Africa (ABI, Undated).

7.2. Water Quality

Cleaver and Brown (2005) also find that the river waters (referring mostly to the upper catchment areas) are generally alkaline and brackish as a result of passage through limestone-bearing Strandveld sands (Toens et. al., 1998). Voëlvlei and Soetendalsvlei are moderately saline with Electrical Conductivity (EC) of between 300 to 700 mS/m (compared to 5,600 for seawater), whereas several of the smaller pans (Soutpan, Melkbospan, Vispan) are strongly saline to hypersaline with EC's of between 2,460 and 13,230 mS/m (Toens et. al., 1998). These highly saline levels render the water unsuitable for domestic consumption and irrigation of all but salt tolerant crops (Toens et. al., 1998).

Water in the upper mountain streams has a low pH (4.5 – 5) and an EC of around 43 mS/m (Toens et. al., 1998). The passage of rivers through limestone-bearing sands and Bokkeveld shale has had the effect of increasing both pH and total dissolved solids (TDS) (where $1 \text{ mS/m} = 6.5 \text{ mg/l TDS}$) concentrations (Toens et. al., 1998). According to Toens et. al., (1998), the pH in the Heuningnes River system is roughly 7.0 in the vicinity of Elim, increasing to 8.5 in the Soetendalsvlei. The pH of the water in most of the lowland wetlands varies from 6 to 8 (Toens et. al., 1998).

At the point where the Kars and the Nuwejaars Rivers flow into Soetendalsvlei, the EC's of the river water during the dry season (January 1998) are 278 and 228 mS/m respectively (Toens et. al., 1998). The EC of the groundwater in the area Soetendalsvlei varies between 400 and 1,000 mS/m (Toens et. al., 1998)

There is not much data available regarding the water quality of the lower reaches of the estuary. An overall water quality assessment of the estuary and management implications thereof will form part of Section 2 of the management plan.

8. PRIORITY RESTORATION ACTIONS

From the initial desktop mapping and site evaluation, one of the most important restoration actions that was identified was the need for ecological buffer areas on many of the agricultural areas. As can be seen in the attached figure 6, many of the agricultural areas extend right to the banks of the estuary. A 100m buffer has been placed on the estuary and specific priorities within this buffer area will be defined and allocated to specific management objectives during Objective 2 of the EMP.

Significant bank stabilization has taken place on the western bank within De Mond Nature Reserve. The viability of the methodology used needs to be assessed and the need for further stabilization needs to be determined. One must however remember that the stabilization of these banks may require authorization in terms of the National Environmental Management Act (NEMA)

Alien Vegetation Management. From the desktop mapping exercise and initial site assessment, the infestation of certain species of alien vegetation (mostly *Acacia Cyclops* and *Acacia saligna*) has taken place along certain portions of the estuary. The extent of these will be mapped as part of the detailed mapping exercise for Objective 2 of the process.

9. PROTECTED AREA POTENTIAL

The potential for acquiring additional protected area status for the Heuningnes is very high. The commitment from the ODM in terms of its IDP and SDF alongside the existing protection in terms of the Cape Nature Ordinance, RAMSAR and other legislation should ensure that this estuary receives sufficient legislative protection

Further options to investigate include that of Special Management Area (SMA), Marine Protected Area (MPA), Conservancies and Stewardship Programs and applicable protection in terms of the Integrated Coastal Development Act.

10. STAKEHOLDERS

10.1. Stakeholder Demographics

According to the Census 2001 results, the population for the Overberg District Municipality was at that stage approximately 203 520 persons. When compared with the 1996 results, a 27,97% increase in population is thus indicated. Since 2001 the growth in population continued unabated and the planning process should therefore

take cognizance thereof. Unfortunately there are no up-to-date census figures available. One can therefore only rely on a projection of population growth from 2001 up to 2005.

Table 1 shows a projection of probable figures for 2005 and beyond.

As a result of the differences between the demographic characteristics of the various local municipal areas in the district, the growth rates of each municipal area can be calculated, as well as the average growth rate for the entire district over the period 1996-2001.

Table 1: Population projections

MUNICIPAL AREA	2001	2005	2010	2015
Overberg District (total)	203 520	253 082	332 339	436 416
Theewaterskloof	93 276	113 809	145 944	188 044
Overstrand	55 738	81 309	130 353	208 982
Cape Agulhas	26 182	30 394	36 624	44 131
Swellendam	28 075	31 353	35 995	41 323

Although the demographics for the Agulhas region is relatively low in comparison to the other municipal areas, the "weekend impact" from recreational users considerably increases the total number.

The district with its largely rural character and high dependence on agriculture and tourism is hugely dependent on the natural environment for its existence. However, immigration of both younger Black Africans in search of job opportunities and a better livelihood, as well as of older people seeking a place to retire along the Overberg coastline, poses a constant threat of overexploitation of the natural environment.

This is resulting in the following environmental threats:

- Urban sprawl along the Overberg coastline and also on the lower mountain slopes along the coast;
- Negative impacts on under-ground water resources, especially along the coastal plains;
- A growing demand for water from the adjacent metropolitan area threatening water sources and water supply to the Overberg, with special reference to the Theewaterskloof Dam, the Palmiet River catchment area and the aqua-sphere below the Kogelberg Biosphere Reserve;
- A growing demand, in the face of poverty and deprivation, to have access to natural resources, e.g. fynbos, wildlife, etc;
- Human settlement threatening high-value agricultural land, especially in the Grabouw area; and

- Over-exploitation of the marine resources as a result of poverty and the present system of allocating permits.

Tourism statistics will be sourced from De Mond Nature Reserve and Overberg Tourism in order to provide baseline data. The determination of the social carrying capacity is not within the scope of this report and has been identified as a potential research opportunity.

10.2. Stakeholder Participation

In order to provide a product that is suitable to all users of the estuary, the input from all affected stakeholders has been an important aspect of this process.

Various governmental bodies were identified and invited to an Authorities meeting with the aim of introducing the concept to them and garnering support. The meeting also helped to identify additional parties, especially NGO's.

Advertisements were placed in the local media calling for affected stakeholders to attend a secondary meeting. Those identified during the initial round of meetings and the registered authorities were also requested to attend. The meeting was held on the 13th December 2007 at the Overberg District Municipality offices with the respondent stakeholders to introduce them to the concept.

The input to date that has been provided by the stakeholders; especially the adjacent landowners have provided an important basis for the proposed EMP. The landowners have been very instrumental to date in retaining the rural nature of the estuary.

11. GIS MAPPING

For the purpose of this situation assessment, all the GIS mapping done to date has been desktop mapping. A field mapping and ground-truthing exercise will take place during March 2008, where the entire estuary will be mapped in detail in order to inform management actions. This mapping will include Zonation, Priority Restoration Areas, Environmental Sensitivity and current impacts.

The following desktop maps have been produced thus far:

Figure 1 Location Map of Heuningnes Estuary

This map shows the location of Heuningnes estuary in relation to the surrounding areas.

Figure 2 Spatial Scale of the Estuary Management Plan

This map indicates the spatial extent of the study site.

Figure 3 Die Mond Infrastructure

This plan indicates all infrastructure in the lower reaches of the estuary on both private and state land

Figure 4 Total Infrastructure

This plan indicates the total infrastructure along the length of the study site.

Figure 5 Land Uses

This plan shows a linear representation of the land uses adjacent to the study site.

Figure 6 Priority Restoration Areas – Reinstatement of riparian buffers

This plan indicates possible areas where riparian buffers need to be reinstated. The specifics in this regard will be detailed in Objective 2.

12. KNOWLEDGE GAPS

The following gaps in existing knowledge have been identified and are herewith listed in point form:

- Classification, Reserve Determination and Resource Quality of water for the Heuningnes Estuary
- Updated calculations of mean annual run off
- Detailed Water Quality assessment of the lower reaches of the estuary
- Determination of the social carrying capacity of the estuary

12.1. Research Opportunities

With the identification of the gaps in knowledge, certain research opportunities for the Heuningnes have become apparent.

- There is much information available regarding the management practice of maintaining the Heuningnes as an open system. Most studies find that, due to the extended time period that the estuary has been managed as an open system, the estuary dynamics and associated diversity characteristics have now to a degree naturalized to this open system. The economic effects of maintaining it as an open system however need to be quantified.

- There is also a need to undertake an economic assessment of the goods and services provided by the estuary in order to motivate funding for the proper management thereof.
- A continual low level environmental observation (CLEO) program should be implemented by the management authority. This should start with the collation of all historical environmental data (rainfall, water levels, water quality etc).
- The possibility also exists to implement a fish tagging program in order to become part of a greater project to further understand fish recruitment from estuaries.

13. REFERENCES

Bickerton, I.B.(1984) Estuaries of the Cape Part II: Synopsis of Available Information on Individual Systems. Report No. 25: Heuningnes (CSW 19). CSIR Report 424

Cleaver, G and Brown, L.R. (2005) Wetland Restoration: Nuwejaars, Heuningnes, Kars and Rater Wetland and River Systems: Information Status Quo Report and Recommendations

Kilpin, D.B. (1992) De Mond: A Family History of De Mond since 1965. Personal Memoirs.

Kilpin, P (2007) Personal Communication.

Scott, R.M. (1992) Proposed Management Plan for the De Mond Nature Reserve, Southwestern Cape. Cape Nature Conservation.

Dennis Moss Partnership (2004) Overberg Spatial Development Framework, Project No. D3049. Overberg District Municipality

Prins, J. Revised Integrated Development Plan 2006/07. Overberg District Municipality

Western Cape Nature Conservation Laws Amendment Act (2000), Province of Western Cape.

Marine and Living Resources Act (1998), Republic of South Africa

World Heritage Convention Act (1999), Republic of South Africa

National Water Act (Act 36 of 1998), Republic of South Africa

National Environmental Management Act (Act 107 of 1998), Republic of South Africa

Agulhas Biodiversity Initiative, CAPE

Convention on International Trade in Endangered Species of Flora and Fauna (CITES)

Cape Action for People and the Environment (CAPE)

Toens, P.D. 1996. Proposed multi-disciplinary investigations covering the wetlands and

vleis between Elim and De Mond in the District of Bredasdorp Western Cape. Quote Document 4Z/P/CT

Figure 1: Location Map for Heuningnes Estuary



Aerial image courtesy of Google Earth Pro 2008



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ENVIRONMENTAL MANAGEMENT
CONSULTANTS

Figure 2: Spatial Scale of the Estuary Management Plan

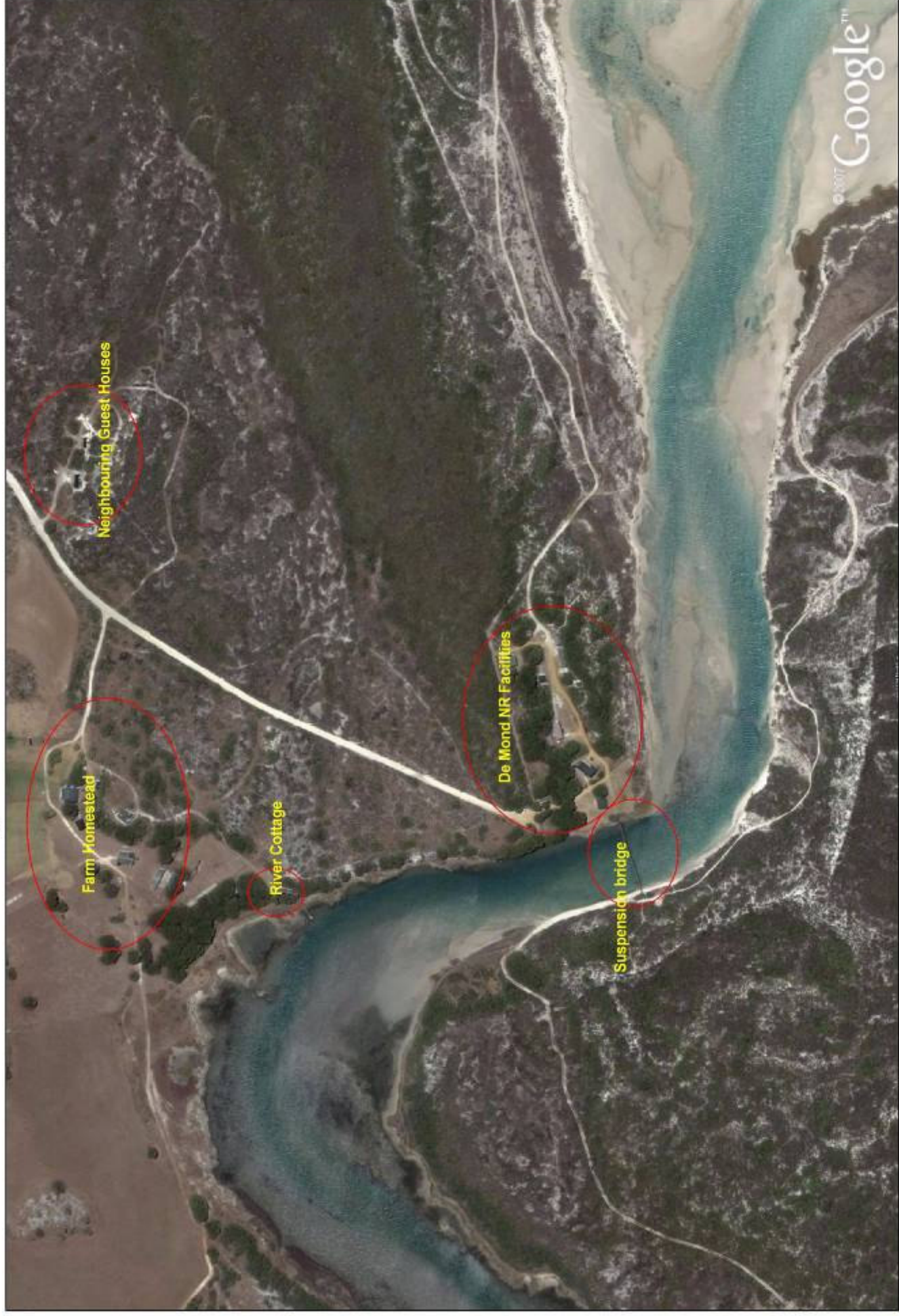


Aerial image courtesy of Google Earth Pro 2008



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ENVIRONMENTAL MANAGEMENT
CONSULTANTS

Figure 3: Die Mond Infrastructure



Aerial Image courtesy of Google Earth Pro 2008



Hilland Associates
ENVIRONMENTAL MANAGEMENT
CONSULTANTS

Figure 4: Total Infrastructure

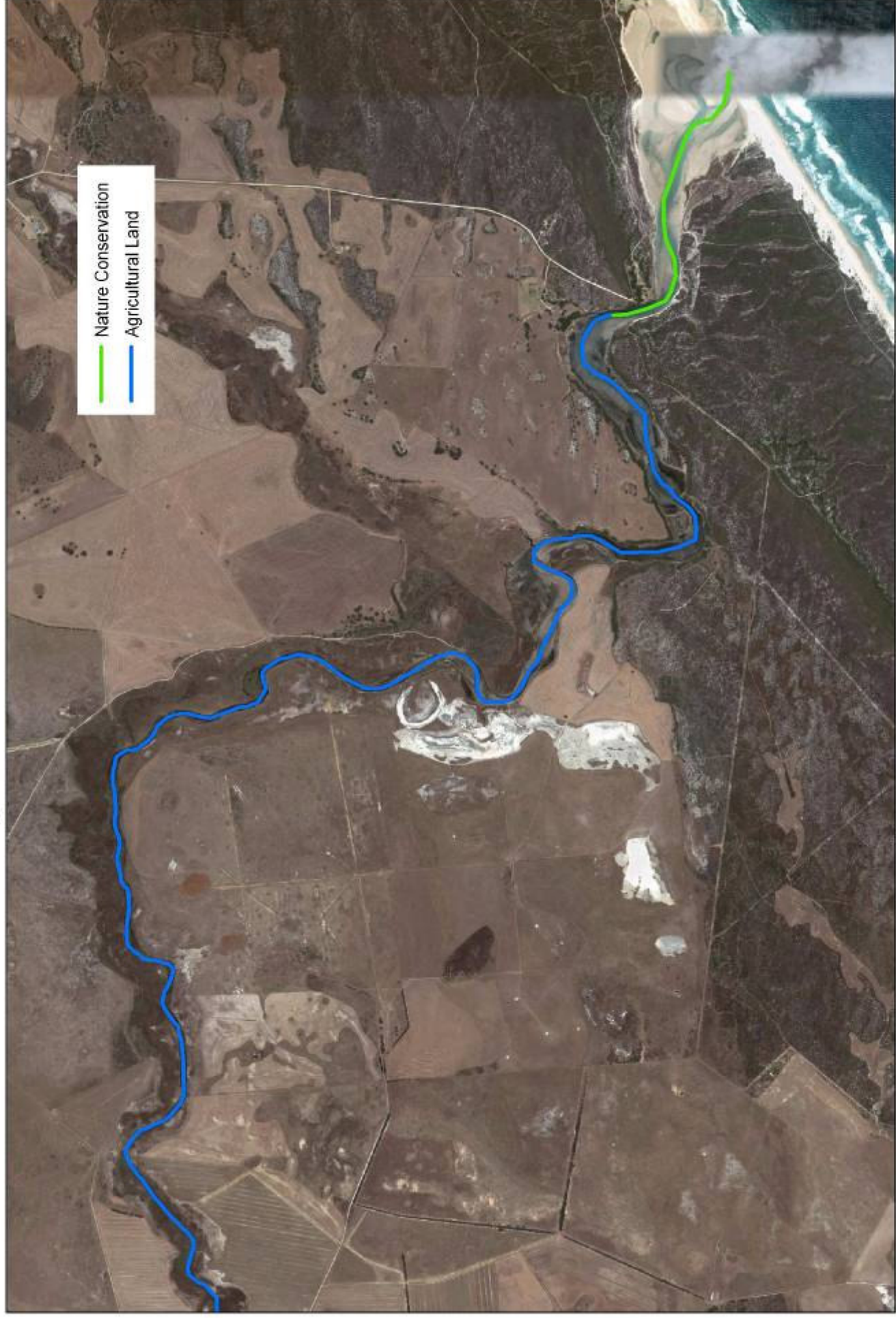


Aerial image courtesy of Google Earth Pro 2008



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ENVIRONMENTAL MANAGEMENT
CONSULTANTS

Figure 5: Land Uses



Aerial image courtesy of Google Earth Pro 2008



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CONSULTANTS

Figure 6: Priority Restoration Areas - Reinstatement of Riparian Buffers



Aerial image courtesy of Google Earth Pro 2008



HILL AND ASSOCIATES
ENVIRONMENTAL MANAGEMENT
CONSULTANTS

Appendix 3 – Title Deed extract and Legal extract

B) 1)

15. 03. 93 18:59

*SONNENBERG, HOFF & GALO PO 1

SONNENBERG HOFFMANN & GALOMBIK

Attorneys, Notaries and Conveyancers

Liberty Life Centre
22 Long Street
8001 Cape Town
PO Box 2293
8000 Cape Town
Telephone (021) 419 2360
International + 2721
Telex 5-21037
Telefax 211250/419 8928
DX14

Our Ref: AMJM/rm/office

Your Ref:

Date: 15th March 1993

ATTENTION: MR P D KILPIN
c/o Boesmansrug Farm Trust
ELGIN
FAX NUMBER: (0225) 4219

Dear Mr Kilpin

**RE: TITLE CONDITION :
REMAINDER PORTION 1 (DE MOND) of the farm BUSHY PARK NO. 269**

We refer to the above matter and the telephonic discussions the writer held with yourself during the course of last week.

The writer attended the Deeds Office this morning to conduct a search to obtain further information in this matter and would like to advise as follows :-

1. By Deed of Transfer No. 2289/1940 the property described as **portion 3 of the farm Bushy Park No. 269** was transferred to the Union of South Africa.
2. The condition contained in paragraph B of the Title Deed to the **Remainder Portion 1 (De Mond) of the Farm Bushy Park No. 269** (registered in the name of De Mond Farm (Pty) Ltd) was reserved by C J Odendaal in favour of the said property when the transfer of the property referred to in para 1 was registered.
3. The property which is subject to the relevant title condition has not been alienated since 1940 and is still registered in the name of the Republic of South Africa. Presumably the land has been made available to the Parks Board for nature conservation purposes.
4. It is noted that the relevant condition contains a restriction to the effect that no buildings shall be erected on the "servient property" for business or trade purposes except with the consent of the owner of the "dominant property" or his/its successors-in-title. Although the condition appears to be of a "personal nature" (ie was imposed by the then owner of the "dominant property" in his favour) the wording is clear that the benefits thereof shall pass to the successors-in-title of the owner.

It thus appears that De Mond Farm (Pty) Ltd is entitled to insist on the compliance by the owner of **portion 3 of farm 269** with the title deed restriction and should the latter at any stage proceed to develop the relevant property in contravention to the provisions of the condition and without the consent of De Mond Farm (Pty) Ltd having been obtained, it would be possible for the Company to interdict it from doing so.



B) 2)

CERTAIN piece of extinguished quitrent land being the remaining extent of the place called "DE MOND", portion of "BUSHY PARK", situate in the Division of Bredasdorp.

MEASURING as such:-

Three Hundred and Forty-Nine point One Six Eight Two
(349.1682) Morgen.

EXTENDING as appears from the Deed of Transfer No. 3758 dated 7 May 1930 (with Diagram) in favour of D.J. Human, held by the said C.J. Odendal by Transfer No. 7669 dated 10 July 1942, and

- 092,9297
1441
99,0738
- (A) SUBJECT to the conditions referred to in Certificate of Amended Title No. 3757 dated 7 May 1930,
(B) ENTITLED to the Servitude referred to in an endorsement dated 13 March 1940, endorsed on Transfer No. 3137 dated 26 April 1934, which reads :

By Transfer No. 2289 dated 13.3.1940 the property conveyed thereby shall not be leased or otherwise disposed of without being first offered to the Owner or Successors of the remainder held hereunder, nor shall any building be erected thereon for business or trade, except with the consent of said owner or Successors of remainder, as will more fully appear on reference to the said Township Transfer.

Appendix 4 – NEMA EIA Activities triggered and Application forms

APPLICATION FORM



WESTERN CAPE DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING

Application for authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2006

JULY 2006

Kindly note that:

1. This form must be used in all instances for applications for Basic Assessment, Scoping & Environmental Impact Assessment as well as any Exemption applications
2. This form is current as of 1 July 2006. It is the responsibility of the Applicant / EAP to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
3. The required information must be typed within the spaces provided in the form. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. It is in the form of a table that can extend itself as each space is filled with typing.
4. Incomplete applications may be rejected or returned to the applicant for amendment.
5. The use of "not applicable" in the form must be done with circumspection. Where it is used in respect of material information that is required by the competent authority for assessing the application, this may result in the rejection of the application as provided for in the regulations.
6. No faxed or e-mailed applications will be accepted.
7. Unless protected by law all information contained in, and attached to this application, will become public information on receipt by the competent authority. Upon request, any interested and affected party should be provided with the information contained in and attached to this application. During any stage of the application process, the information contained in and attached to it must be provided by the applicant / EAP.
8. This form must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Should the application form and attached reports not be submitted to the addresses given below it will be rejected.

DEPARTMENTAL DETAILS

CAPE TOWN OFFICE REGION A (Breede River/ Winelands, City of Cape Town: Tygerberg and Oostenberg Administrations)	CAPE TOWN OFFICE REGION B (West Coast, Overberg, City of Cape Town: Helderberg, South Peninsula, Cape Town and Blauwberg Administrations)	GEORGE OFFICE (Eden and Central Karoo)
Department of Environmental Affairs and Development Planning Attention: Directorate: Integrated Environmental Management (Region A2) Private Bag X 9086 Cape Town, 8000 Registry Office 1 st Floor Utilitas Building 1 Dorp Street, Cape Town Queries should be directed to the Directorate: Integrated Environmental Management (Region A2) at: Tel: (021) 483-4793 Fax (021) 483-3633	Department of Environmental Affairs and Development Planning Attention: Directorate: Integrated Environmental Management (Region B) Private Bag X 9086 Cape Town, 8000 Registry Office 1 st Floor Utilitas Building 1 Dorp Street, Cape Town Queries should be directed to the Directorate: Integrated Environmental Management (Region B) at: Tel: (021) 483-4094 Fax (021) 483-4372	Department of Environmental Affairs and Development Planning Attention: Directorate: Integrated Environmental Management (Region A1) Private Bag X 6509 George, 6530 Registry Office 4 th Floor, York Park Building 93 York Street George Queries should be directed to the Directorate: Integrated Environmental Management (Region A1) at: Tel: (044) 874-2160 Fax (021) 874-2423

View the Department's website at <http://www.westerncape.gov.za/eadp> for the latest version of the documents.

APPLICATION FORM

1. BACKGROUND INFORMATION

Project applicant:			
Trading name (if any):			
Contact person:			
Postal address:			
		Postal code:	
Telephone: ()		Cell:	
E-mail:		Fax: ()	
Project Consultant			
Contact person:			
Postal address:			
		Postal code:	
Telephone: ()		Cell:	
E-mail:		Fax: ()	
Environmental Assessment Practitioner (EAP):			
Contact person:			
Postal address:			
		Postal code:	
Telephone: ()		Cell:	
E-mail:		Fax: ()	
EAP Qualifications			
EAP Registrations/Associations			
Landowner:			
Contact person:			
Postal address:			
		Postal code:	
Telephone: ()		Cell:	
E-mail:		Fax: ()	

Please note that in instances where there is more than one landowner, please attach a list of landowners with their contact details to the back of this page.

Municipality in whose area of jurisdiction the proposed activity will fall:			
Contact person:			
Postal address:			
		Postal code:	
Telephone ()		Cell:	
E-mail:		Fax: ()	

Please note that in instances where there is more than one Municipality involved, please attach a list of Municipality with their contact details to the back of this page.

Project title:			
Property location:			
Farm/Erf name & number including portion)			
SG21 Digit code			

Please note where a large number of properties are involved (e.g. linear activities), attach a list of property descriptions to the back of this page.

Street address:			
Magisterial District or Town:			

Please note that in instances where there is more than one town or district involved, please attach a list of towns or districts as well as complete physical address information for the entire area to the back of this page.

APPLICATION FORM

Closest City/Town:		Distance	(km)
Zoning of Property:			

Please note that in instances where there is more than one zoning, please attach a list of zonings that also indicate which portions each use pertains to, to this application.

Is a rezoning application required?	YES	NO
Is a consent use application required?	YES	NO
Locality map:	A locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be at least 1:50 000. The scale must be indicated on the map. The map must indicate the following: - An accurate indication of the project site and all site alternatives. - Road names or numbers of all the major roads as well as the roads that provide access to the site(s) - A north arrow.	
Site Plan:	Detailed site plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix B to this document. The site plan must contain or conform to the following: - The detailed site plan must be at a scale of 1:500 or larger. The scale must be indicated on the plan. - The property boundaries and numbers of all the properties within 50m of the site must be indicated on the site plan. - The current land use (not zoning) as well as the land use zoning of each of the adjoining properties must be indicated on the site plan. - The position of each element of the application as well as any other structures on the site must be indicated on the site plan. - Services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, sewage pipelines, storm water infrastructure and access roads that will form part of the development must be indicated on the site plan. - Servitudes indicating the purpose of the servitude must be indicated on the site plan. - Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to): - Rivers. - Flood lines (i.e. 1:10, 1:50, year and 32 meter set back line from the banks of a river/stream). - Ridges. - Cultural and historical features. - Areas with indigenous vegetation (even if it is degraded or infested with alien species). - Whenever the slope of the site exceeds 1:10, then a contour map of the site must be submitted. Please Note: If the above mentioned site plan(s) is not attached to this application, such plan(s) must be submitted as part of the Basic Assessment Report or Scoping Report.	
Owners consent:	Letters of consent from all landowners or a detailed explanation by the applicant explaining why such letters of consent are not furnished must be attached to the back of this document as Appendix C. Attached to this application form is a landowner's consent form that could be used.	

APPLICATION FORM

2. ACTIVITIES APPLIED FOR

All potential listed activities (basic assessment (Government Notice R386 activities) and Scoping & EIA (Government Notice R387 activities)) associated with the proposed development must be indicated below. (See Annexures A & B).

Government Notice R386 Activity No(s):	Describe the relevant Basic Assessment Activity in writing
Government Notice R387 Activity No(s):	Describe the relevant Scoping and EIA Activity in writing
Please note: Only those activities for which the applicant applies will be considered for authorization. The onus is on the applicant to ensure that all the applicable listed activities are included in the application. Failure to do so may invalidate the application.	

3. TYPE OF APPLICATION

Is this an application for conducting a basic assessment?	YES	NO
Is this an application for Scoping and EIA?	YES	NO
Is exemption from any provisions of the regulations being applied for? If yes, please complete section 4 below.	YES	NO

4. APPLICATION FOR EXEMPTION

The relevant parts of this section must be completed for any application for exemption from provisions of the regulations.

4.1 TYPE OF EXEMPTION APPLICATION

I hereby apply for exemption in terms of regulation 51 of the Environmental Impact Assessment Regulations, 2006 ("regulations"), from the following: (tick ("✓") appropriate boxes):

a) Appointing an Environmental Assessment Practitioner as required by regulation 17.	
b) Assessing alternatives as required by section 24(4)(b) of the National Environmental Management Act, 1998 (Act No. 107 of 1998).	
c) Provisions of Public Participation as required by regulation 56 (2) of the regulations.	
d) Any other provision of the regulations.	

APPLICATION FORM

(a) APPLICATION FOR EXEMPTION FROM APPOINTING AN ENVIRONMENTAL ASSESSMENT PRACTITIONER:

Please Note: Before completing the application for exemption the applicant should familiarize him/herself with the Department's Guideline on Exemption Applications.

Provide a detailed motivation for not appointing an Environmental Assessment Practitioner (supporting documents, if any, should be attached to this report):

(b) APPLICATION FOR EXEMPTION FROM ASSESSING ALTERNATIVES:

Provide a detailed motivation for not considering alternatives (supporting documents, if any, should be attached to this report):

(c) APPLICATION FOR EXEMPTION FROM PUBLIC PARTICIPATION:

I hereby apply for exemption in terms of regulation 51 of the Environmental Impact Assessment Regulations, 2006, from having to give notice in terms of regulation 56 (2) to all potential interested and affected parties of the application by (tick ("✓") relevant box/es below):

(a) fixing a notice board at a place conspicuous to the public at the boundary or on the fence of -	
(i) the site where the activity to which the application relates is or is to be undertaken; and	
(ii) any alternative site mentioned in the application;	
(b) written notice to -	
(i) the owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site;	
(ii) the owners and occupiers of land within 100 meters of the boundary of the site or alternative site who are or may be directly affected by the activity;	
(iii) the municipal councillors of the ward in which the site or alternative site is situated and any organisation of ratepayers that represents the community in the area;	
(iv) the municipality which has jurisdiction in the area; and	
(v) any organ of state having jurisdiction in respect of any aspect of the activity;	
(c) placing an advertisement in -	
(i) one local newspaper; or	
(ii) any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of the Regulations; and	
(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken	

APPLICATION FORM

Provide a detailed motivation for not undertaking the public participation requirements ticked off above (supporting documents, if any, should be attached to this report):

(d) APPLICATION FOR EXEMPTION FROM ANY OTHER PROVISIONS OF THE REGULATIONS:

Please list and describe the relevant provision(s) of the regulations for which exemption is being applied for:

Provide a detailed motivation for each provision including (supporting documents, if any, should be attached to this report):

4.2 RIGHTS AND INTERESTS OF OTHER PARTIES

Was the application for the exemption(s) included in a public participation process? Please explain	YES	NO

APPLICATION FORM

Will the rights and interests of other parties be adversely affected by the proposed exemption(s)? Please Explain	YES	NO

APPLICATION FORM

5. DECLARATIONS

5.1 The Applicant

I....., in my personal capacity or duly authorized thereto hereby declare that:

- The information contained in this application form is true and correct, and
- I am fully aware of my responsibilities in terms of the National Environmental Management Act of 1989 ("NEMA") (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations ("EIA Regulations") in terms of NEMA (Government Notice No. R. 385, R. 386, and R. 387 in the Government Gazette of 21 April 2006 refer), and that failure to comply with these requirements may constitute an offence in terms of NEMA and the EIA Regulations.

Please Note: If acting in a representative capacity, a certified copy of the resolution or power of attorney must be attached.

Signature of the applicant:

Name of company:

Date:

5.2 The independent Environmental Assessment Practitioner

I....., as the appointed independent environmental practitioner hereby declare that:

- The information contained in this application form is true and correct, and
- I am fully aware of my responsibilities in terms of the National Environmental Management Act of 1989 ("NEMA") (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations ("EIA Regulations") in terms of NEMA (Government Notice No. R. 385, R. 386, and R. 387 in the Government Gazette of 21 April 2006 refer), and that failure to comply with these requirements may constitute an offence in terms of NEMA and the EIA Regulations.

Note: The terms of reference must be attached.

Signature of the environmental assessment practitioner:

Name of company:

Date:

ANNEXURE A

DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND TOURISM

No. R. 386

21 April 2006

LIST OF ACTIVITIES AND COMPETENT AUTHORITIES IDENTIFIED IN TERMS OF SECTIONS 24 AND 24D OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998

The Minister of Environmental Affairs and Tourism has in terms of sections 24 and 24D of the National Environmental Management Act, 1998 (Act No. 107 of 1998), listed the activities in the Schedule.

This Notice comes into effect on the date of commencement of the Environmental Impact Assessment Regulations, 2006, made under section 24(5) of the Act and published in Government Notice No. R. 385 of 2006.

Definitions

In this Notice, any word or expression to which a meaning has been assigned in the Act shall have the meaning so assigned, and unless the context otherwise indicates -

"agri-industrial" means an undertaking involving the production, processing, manufacture, packaging or storage of agricultural produce and includes battery farm operations that are under roof;

"aquaculture" means the farming of animals or plants in an aquatic environment;

"asbestos" means any fibrous mineral silicates, including actinolite, amosite, anthophyllite, chrysotile, crocidolite or tremolite;

"associated structures or infrastructure" means any building or infrastructure that is necessary for the functioning of a facility or activity or that is used for an ancillary service or use from the facility;

"canal" means an open structure that is lined or reinforced for the conveying of a liquid or that serves as an artificial watercourse;

"channel" means an excavated hollow bed for running water or an artificial underwater depression to make a water body navigable or to improve the flow of water in a natural stream, river or the sea;

"concentration of animals" means the keeping of animals in a confined space or structure, including a feedlot, where they are fed in order to prepare them for slaughter or to produce secondary products such as milk or eggs;

"construction" means the building, erection or expansion of a facility, structure or infrastructure that is necessary for the undertaking of an activity, but excludes any modification, alteration or upgrading of such facility, structure or infrastructure that does not result in a change to the nature of the activity being undertaken or an increase in the production, storage or transportation capacity of that facility, structure or infrastructure;

"dangerous goods" means goods that are capable of posing a significant risk to the health and safety of people or the environment and which are listed in South African National Standard No.10228 designated "The identification and classification of dangerous goods for transport", SANS 10228:2003, edition 3, published by Standards South Africa, ISBN 0-626-14417-5, as may be amended from time to time;

"expansion" means the modification, extension or alteration of a facility, structure or infrastructure at which an activity takes place in such a manner that the production, treatment, storage or capacity of the facility is increased;

"floodplain" means a discernable flat landscape feature next to a river or stream that was created by weathering and sedimentation over time;

"high-water mark" means the highest line reached by the water of the sea during ordinary storms occurring during the most stormy period of the year, excluding exceptional or abnormal floods;

"infill development" means urban development, including residential, commercial, retail, institutional, educational and mixed use development, but excluding industrial development, in a built up area which is at least 50 percent abutted by urban development and which can be readily connected to municipal bulk infrastructure services;

"mariculture" means the culture or husbandry of fish in sea water;

"mine" when used as a noun or a verb as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"mineral" means a mineral as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002);

"mining area" means an area as defined in terms of section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"mining permit" means a permit as defined in terms of section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"mixed use", with regard to an activity, means the presence of two or more types of land use in an area;

"petroleum" means any liquid, solid hydrocarbon or combustible gas as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"phased development" means an activity that is developed in phases over time on the same or adjacent properties to create a single or linked entity through interconnected internal vehicular or pedestrian circulation, sharing of infrastructure, or the continuum of design, style or concept by the same proponent or his or her successors.

"prospecting" means prospecting as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002);

"prospecting area" means an area as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"prospecting right" means a right as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"reconnaissance permit" means a permit as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"retention area" means an area as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"retention permit" means a permit as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"sea" means the water and the bed of the sea and the subsoil thereof, below the high-water mark, including the water and the bed of any tidal river and tidal lagoon;

"South African Manual for Outdoor Advertising Control" means the Department of Environmental Affairs and Tourism and the Department of Transport publication titled "South African Manual for Outdoor Advertising Control", published by the Department of Environmental Affairs and Tourism, April 1998, ISBN: 0-621-27343-0;

"the Act" means the National Environmental Management Act, 1998 (Act No. 107 of 1998); and

"the regulations" means the Environmental Impact Assessment Regulations, 2006.

SCHEDULE

ACTIVITIES IDENTIFIED IN TERMS OF SECTION 24(2)(a) AND (d) OF THE ACT, WHICH MAY NOT COMMENCE WITHOUT ENVIRONMENTAL AUTHORISATION FROM THE COMPETENT AUTHORITY AND IN RESPECT OF WHICH THE INVESTIGATION, ASSESSMENT AND COMMUNICATION OF POTENTIAL IMPACT OF ACTIVITIES MUST FOLLOW THE PROCEDURE AS DESCRIBED IN REGULATIONS 22 TO 26 OF THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2006, PROMULGATED IN TERMS OF SECTION 24(5) OF THE ACT -

Activity number	Activity description
1	The construction of facilities or infrastructure, including associated structures or infrastructure, for - (a) the generation of electricity where the electricity output is more than 10 megawatts but less than 20 megawatts; (b) the above ground storage of 1 000 tons or more but less than 100 000 tons of ore; (c) the storage of 250 tons or more but less than 100 000 tons of coal; (d) resorts, lodges, hotels or other tourism and hospitality facilities in a protected area contemplated in the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003); (e) any purpose where lawns, playing fields or sports tracks covering an area of more than three hectares, but less than 10 hectares, will be established; (f) sport spectator facilities with the capacity to hold 8 000 spectators or more; (g) the slaughter of animals with a product throughput of 10 000 kilograms or more per year; (h) the concentration of animals for the purpose of commercial production in densities that exceed - (i) 20 square metres per head of cattle and more than 500 head of cattle per facility per year; (ii) eight square metres per sheep and more than 1 000 sheep per facility per year; (iii) eight square metres per pig and more than 250 pigs per facility per year excluding piglets that are not yet weaned; (iv) 30 square metres per crocodile at any level of production, excluding crocodiles younger than 6 months; (v) three square metres per head of poultry and more than 250 poultry per facility at any time, excluding chicks younger than 20 days; (vi) three square metre per rabbit at and more than 250 rabbits per facility at any time; or (vii) 100 square metres per ostrich and more than 50 ostriches per facility per year or 2500 square metres per breeding pair; (i) aquaculture production, including mariculture and algae farms, with a product throughput of 10 000 kilograms or more per year; (j) agri-industrial purposes, outside areas with an existing land use zoning for industrial purposes, that cover an area of 1 000 square metres or more; (k) the bulk transportation of sewage and water, including storm water, in pipelines with - (i) an internal diameter of 0,36 metres or more; or (ii) a peak throughput of 120 litres per second or more; (l) the transmission and distribution of electricity above ground with a capacity of more than 33 kilovolts and less than 120 kilovolts; (m) any purpose in the one in ten year flood line of a river or stream, or within 32 metres from the bank of a river or stream where the flood line is unknown, excluding purposes associated with existing residential use, but including - (i) canals; (ii) channels; (iii) bridges; (iv) dams; and (v) weirs; (n) the off-stream storage of water, including dams and reservoirs, with a capacity of 50 000 cubic metres or more, unless such storage falls within the ambit of the activity listed in item 6 of Government Notice No. R. 387 of 2006;

	(o) the recycling, re-use, handling, temporary storage or treatment of general waste with a throughput capacity of 20 cubic metres or more daily average measured over a period of 30 days, but less than 50 tons daily average measured over a period of 30 days; (p) the temporary storage of hazardous waste; (q) the landing, parking and maintenance of aircraft including - (i) helicopter landing pads, excluding helicopter landing facilities and stops used exclusively by emergency services; (ii) unpaved aircraft landing strips shorter than 1,4km; (iii) structures for equipment and aircraft storage; (iv) structures for maintenance and repair; (v) structures for fuelling and fuel storage; and (vi) structures for air cargo handling; (r) the outdoor racing of motor powered vehicles including - (i) motorcars; (ii) trucks; (iii) motorcycles; (iv) quad bikes; (v) boats; and (vi) jet skis; (s) the treatment of effluent, wastewater or sewage with an annual throughput capacity of more than 2 000 cubic metres but less than 15 000 cubic metres; (t) marinas and the launching of watercraft on inland fresh water systems; (u) above ground cableways and funiculars; (v) advertisements as defined in classes 1(a), 1(b), 1(c), 3(a), 3(b), 3(l) of the South African Manual for Outdoor Advertising Control.
2	Construction or earth moving activities in the sea or within 100 metres inland of the high-water mark of the sea, in respect of - (a) facilities for the storage of material and the maintenance of vessels; (b) fixed or floating jetties and slipways; (c) tidal pools; (d) embankments; (e) stabilising walls; (f) buildings; or (g) infrastructure.
3	The prevention of the free movement of sand, including erosion and accretion, by means of planting vegetation, placing synthetic material on dunes and exposed sand surfaces within a distance of 100 metres inland of the high-water mark of the sea.
4	The dredging, excavation, infilling, removal or moving of soil, sand or rock exceeding 5 cubic metres from a river, tidal lagoon, tidal river, lake, in-stream dam, floodplain or wetland.
5	The removal or damaging of indigenous vegetation of more than 10 square metres within a distance of 100 metres inland of the high-water mark of the sea.
6	The excavation, moving, removal, depositing or compacting of soil, sand, rock or rubble covering an area exceeding 10 square metres in the sea or within a distance of 100 metres inland of the high-water mark of the sea.
7	The above ground storage of a dangerous good, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres at any one location or site.
8	Reconnaissance, prospecting, mining or retention operations as provided for in the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), in respect of such permissions, rights, permits and renewals thereof.
9	In relation to permissions, rights, permits and renewals granted in terms of 8 above, or any other similar right granted in terms of previous mineral or mining legislation, the undertaking of any prospecting or mining related activity or operation within a prospecting, retention or mining area, as defined in terms of section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).
10	The establishment of cemeteries.
11	The decommissioning of a dam where the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, is 5 metres or higher or where the high-water mark of the dam covers an area of more than 10 hectares.
12	The transformation or removal of indigenous vegetation of 3 hectares or more or of any size where the transformation or removal would occur within a critically endangered or an endangered ecosystem listed in terms of section 52 of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).
13	The abstraction of groundwater at a volume where any general authorisation issued in terms of the National Water Act, 1998 (Act No. 36 of 1998) will be exceeded.

14	The construction of masts of any material or type and of any height, including those used for telecommunication broadcasting and radio transmission, but excluding - (a) masts of 15 metres and lower exclusively used (i) by radio amateurs; or (ii) for lighting purposes (b) flag poles; and (c) lightning conductor poles.
15	The construction of a road that is wider than 4 metres or that has a reserve wider than 6 metres, excluding roads that fall within the ambit of another listed activity or which are access roads of less than 30 metres long.
16	The transformation of undeveloped, vacant or derelict land to - (a) establish infill development covering an area of 5 hectares or more, but less than 20 hectares; or (b) residential, mixed, retail, commercial, industrial or institutional use where such development does not constitute infill and where the total area to be transformed is bigger than 1 hectare.
17	Phased activities where any one phase of the activity may be below a threshold specified in this Schedule but where a combination of the phases, including expansions or extensions, will exceed a specified threshold.
18	The subdivision of portions of land 9 hectares or larger into portions of 5 hectares or less.
19	The development of a new facility or the transformation of an existing facility for the conducting of manufacturing processes, warehousing, bottling, packaging, or storage, which, including associated structures or infrastructure, occupies an area of 1 000 square metres or more outside an existing area zoned for industrial purposes.
20	The transformation of an area zoned for use as public open space or for a conservation purpose to another use.
21	The release of genetically modified organisms into the environment in instances where assessment is required by the Genetically Modified Organisms Act, 1997 (Act No. 15 of 1997) or the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).
22	The release of any organism outside its natural area of distribution that is to be used for biological pest control.
23	The decommissioning of existing facilities or infrastructure, other than facilities or infrastructure that commenced under an environmental authorisation issued in terms of the Environmental Impact Assessment Regulations, 2006 made under section 24(5) of the Act and published in Government Notice No. R. 385 of 2006, for - (a) electricity generation; (b) nuclear reactors and storage of nuclear fuel; (c) industrial activities where the facility or the land on which it is located is contaminated or has the potential to be contaminated by any material which may place a restriction on the potential to re-use the site for a different purpose; (d) the disposal of waste; (e) the treatment of effluent, wastewater and sewage with an annual throughput capacity of 15 000 cubic metres or more; (f) the recycling, handling, temporary storage or treatment of general waste with a daily throughput capacity of 20 cubic metres or more; or (g) the recycling, handling, temporary storage or treatment of hazardous waste.
24	The recommissioning or use of any facility or infrastructure, excluding any facility or infrastructure that commenced under an environmental authorisation issued in terms of the Environmental Impact Assessment Regulations, 2006 made under section 24(5) of the Act and published in Government Notice No. R. 385 of 2006, after a period of two years from closure or temporary closure, for - (a) electricity generation; (b) nuclear reactors and nuclear fuel storage; or (c) facilities for any process or activity, which require permission, authorisation, or further authorisation, in terms of legislation governing the release of emissions, pollution, effluent or waste prior to the facility being recommissioned.
25	The expansion of or changes to existing facilities for any process or activity, which requires an amendment of an existing permit or license or a new permit or license in terms of legislation governing the release of emissions, pollution, effluent.

DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND TOURISM

No. R. 387

21 April 2006

LIST OF ACTIVITIES AND COMPETENT AUTHORITIES IDENTIFIED IN TERMS OF SECTIONS 24 AND 24D OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998

The Minister of Environmental Affairs and Tourism has in terms of sections 24 and 24D of the National Environmental Management Act, 1998 (Act No. 107 of 1998), listed the activities in the Schedule.

This Notice comes into effect on the date of commencement of the Environmental Impact Assessment Regulations, 2006, made under section 24(5) of the Act and published in Government Notice No. R. 385 of 2006.

Definitions

In this Notice, any word or expression to which a meaning has been assigned in the Act shall have the meaning so assigned, and unless the context otherwise indicates -

"asbestos" means any fibrous mineral silicates, including actinolite, amosite, anthophyllite, chrysotile, crocidolite or tremolite;

"associated structures or infrastructure" means any building or infrastructure that is necessary for the functioning of a facility or activity or that is used for an ancillary service or use from the facility;

"construction" means the building, erection or expansion of a facility, structure or infrastructure that is necessary for the undertaking of an activity, but excludes any modification, alteration or upgrading of such facility, structure or infrastructure that does not result in a change to the nature of the activity being undertaken or an increase in the production, storage or transportation capacity of that facility, structure or infrastructure;

"dangerous goods" means goods that are capable of posing a significant risk to the health and safety of people or the environment and which are listed in South African National Standard No.10228 designated "The identification and classification of dangerous goods for transport", SANS 10228:2003, edition 3, published by Standards South Africa, ISBN 0-626-14417-5, as may be amended from time to time;

"expansion" means the modification, extension or alteration of a facility, structure or infrastructure at which an activity takes place in such a manner that the production, treatment, storage or capacity of the facility is increased;

"exploration area" means an area as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"exploration right" means the rights as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"filling station" means a site where petrol, diesel, liquid petroleum gas or paraffin is offered for sale, and includes shops and car-washing facilities that are located on the same property or form part of the same development but excludes retail shops that sell gas or paraffin in small containers;

"high-water mark" means the highest line reached by the water of the sea during ordinary storms occurring during the most stormy period of the year, excluding exceptional or abnormal floods;

"mine" used as a noun or a verb as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"mineral" means a mineral as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002);

"mining area" means an area as defined in terms of section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"mining operation" means an operation as defined in terms of section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"mining right" means a right as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"petroleum" means any liquid, solid hydrocarbon or combustible gas as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"production area" means an area as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"production operation" means an operation as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"production right" means a right as defined in section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended;

"sea" means the water and the bed of the sea and the subsoil thereof, below the high-water mark, including the water and the bed of any tidal river and tidal lagoon;

"the Act" means the National Environmental Management Act, 1998 (Act No. 107 of 1998); and

"the regulations" means the Environmental Impact Assessment Regulations, 2006.

SCHEDULE

ACTIVITIES IDENTIFIED IN TERMS OF SECTION 24(2)(a) AND (d) OF THE ACT, WHICH MAY NOT COMMENCE WITHOUT ENVIRONMENTAL AUTHORISATION FROM THE COMPETENT AUTHORITY AND IN RESPECT OF WHICH THE INVESTIGATION, ASSESSMENT AND COMMUNICATION OF POTENTIAL IMPACT OF ACTIVITIES MUST FOLLOW THE PROCEDURE AS DESCRIBED IN REGULATIONS 27 TO 36 OF THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2006, PROMULGATED IN TERMS OF SECTION 24(5) OF THE ACT -

Activity number	Activity description
1	The construction of facilities or infrastructure, including associated structures or infrastructure, for - (a) the generation of electricity where - (i) the electricity output is 20 megawatts or more; or (ii) the elements of the facility cover a combined area in excess of 1 hectare; (b) nuclear reaction including the production, enrichment, processing, reprocessing, storage or disposal of nuclear fuels, radioactive products and waste; (c) the above ground storage of a dangerous good, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of 1 000 cubic metres or more at any one location or site including the storage of one or more dangerous goods, in a tank farm; (d) the refining of gas, oil and petroleum products; (e) any process or activity which requires a permit or license in terms of legislation governing the generation or release of emissions, pollution, effluent or waste and which is not identified in Government Notice No. R. 386 of 2006; (f) the recycling, re-use, handling, temporary storage or treatment of general waste with a throughput capacity of 50 tons or more daily average measured over a period of 30 days; (g) the use, recycling, handling, treatment, storage or final disposal of hazardous waste; (h) the manufacturing, storage or testing of explosives, including ammunition, but excluding licensed retail outlets and the legal end use of such explosives; (i) the extraction or processing of natural gas including gas from landfill sites; (j) the bulk transportation of dangerous goods using pipelines, funiculars or conveyors with a throughput capacity of 50 tons or 50 cubic metres or more per day; (k) the landing, parking and maintenance of aircraft, excluding unpaved landing strips shorter than 1,4 kilometres in length, but including - (i) airports; (ii) runways; (iii) waterways; or (iv) structures for engine testing; (l) the transmission and distribution of above ground electricity with a capacity of 120 kilovolts or more; (m) marine telecommunications; (n) the transfer of 20 000 cubic metres or more water between water catchments or impoundments per day; (o) the final disposal of general waste covering an area of 100 square metres or more or 200 cubic metres or more of airspace; (p) the treatment of effluent, wastewater or sewage with an annual throughput capacity of 15 000 cubic metres or more; (q) the incineration, burning, evaporation, thermal treatment, roasting or heat sterilisation of waste or effluent, including the cremation of human or animal tissue; (r) the microbial deactivation, chemical sterilisation or non-thermal treatment of waste or effluent; (s) rail transportation, excluding railway lines and sidings in industrial areas and underground railway lines in mines, but including - (i) railway lines;

	(ii) stations; or (iii) shunting yards; (t) any purpose where lawns, playing fields or sports tracks covering an area of 10 hectares or more, will be established.
2	Any development activity, including associated structures and infrastructure, where the total area of the developed area is, or is intended to be, 20 hectares or more.
3	The construction of filling stations, including associated structures and infrastructure, or any other facility for the underground storage of a dangerous good, including petrol, diesel, liquid petroleum gas or paraffin.
4	The extraction of peat.
5	The route determination of roads and design of associated physical infrastructure, including roads that have not yet been built for which routes have been determined before the publication of this notice and which has not been authorised by a competent authority in terms of the Environmental Impact Assessment Regulations, 2006 made under section 24(5) of the Act and published in Government Notice No. R. 385 of 2006, where – (a) it is a national road as defined in section 40 of the South African National Roads Agency Limited and National Roads Act, 1998 (Act No. 7 of 1998); (b) it is a road administered by a provincial authority; (c) the road reserve is wider than 30 metres; or (d) the road will cater for more than one lane of traffic in both directions.
6	The construction of a dam where the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, is 5 metres or higher or where the high-water mark of the dam covers an area of 10 hectares or more.
7	Reconnaissance, exploration, production and mining as provided for in the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended in respect of such permits and rights.
8	In relation to permits and rights granted in terms of 7 above, or any other right granted in terms of previous mineral legislation, the undertaking of any reconnaissance exploration, production or mining related activity or operation within a exploration, production or mining area, as defined in terms of section 1 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).
9	Construction or earth moving activities in the sea or within 100 metres inland of the high-water mark of the sea, excluding an activity listed in item 2 of Government Notice No. R. 386 of 2006 but including construction or earth moving activities in respect of – (h) facilities associated with the arrival and departure of vessels and the handling of cargo; (i) piers; (j) inter- and sub-tidal structures for entrapment of sand; (k) breakwater structures; (l) rock revetments and other stabilising structures; (m) coastal marinas; (n) coastal harbours; (o) structures for draining parts of the sea; (p) tunnels; or (q) underwater channels.
10	Any process or activity identified in terms of section 53(1) of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).

**CONSENT IN TERMS OF REGULATION 15(2) OF THE ENVIRONMENTAL IMPACT
ASSESSMENT REGULATIONS, 2006 BY THE LANDOWNER AUTHORIZING AN
APPLICANT, OTHER THAN THE LANDOWNER, TO UNDERTAKE IDENTIFIED
ACTIVITIES ON THAT LAND**

When to use this form

This form must be completed when application is made for environmental authorisation in terms of the Environmental Impact Assessment Regulations, 2006 where the applicant is not the owner of the land on which the proposed activity will take place.

Notes for completing and submitting this form

- (1) This form is current as of 1 July 2006. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
- (2) This form must be attached the application form for environmental authorisation.
- (3) No faxed or e-mailed forms will be accepted.
- (4) Unless protected by law, all information contained in the form will become public information.

CONTACT INFORMATION

Name of land owner			
Trading name (if any):			
Contact person:			
Physical address:			
Postal address:			
Postal code:		Cell:	
Telephone:		Fax:	
E-mail:			
If there is more than one landowner, please attach a list of their contact details to this application and tick the box ☐ Extra page attached			

CONSENT

1. I/we the undersigned *(insert the name/s of the owner/s of the land)*

of identity number/registration number *(insert the owner/s ID number/s or the registration number of the legal entity)*

am/ are the registered owner/s of the property *(insert description of the property/ies and title deed numbers)*

located at *(insert physical address or a brief description of the location of the property)* _____

2. I/ we hereby give consent to the applicant *(insert the name/s of the applicant/s)*

of identity number/registration number *(insert the owner/s ID number/s or the registration number of the legal entity)* _____

to undertake the following activity/ies on the property *(insert a brief description of the project and identified activity/ies that will be applied for):*

i. _____

ii. _____

iii. _____

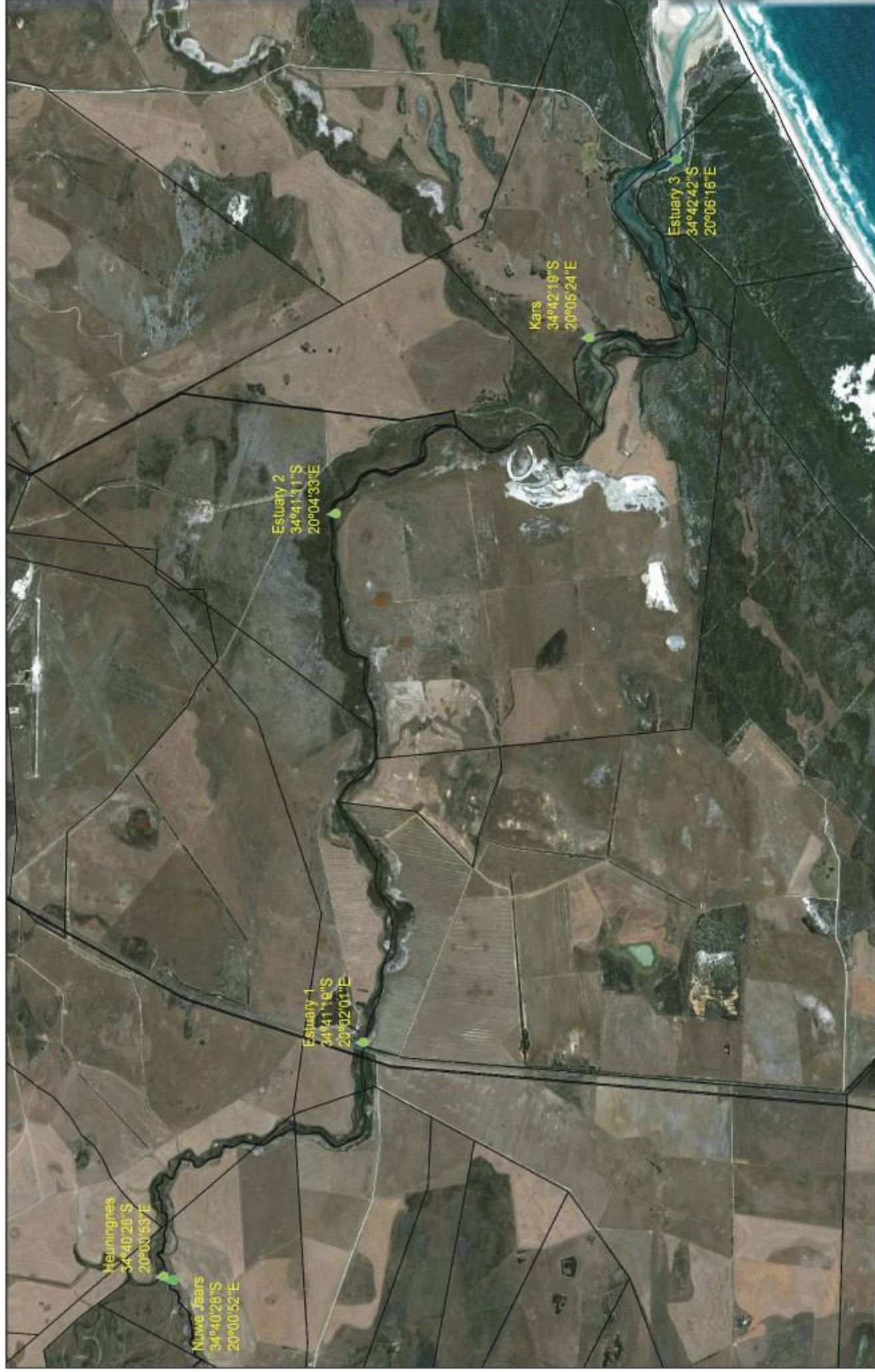
Signature of land owner or authorised representative _____

Name of authorised person if the landowner is a legal entity _____

Date

Appendix 5 – Water Sample Sites

Appendix 5: Water Sampling Sites



0 0.375 0.75 1.5 2.25 3 Kilometers



Hilland Associates
Environmental Management Consultants

Appendix 6 – Oil Spill Contingency Plan

OIL SPILL CONTINGENCY PLAN

Zone: Agulhas Amendment No.: 7 Date of Issue: May 1998

To:

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Enclosed please find a new copy of the above plan incorporating the latest amendments. Please return the tear-off slip to the addressee below.

To: The Director
Pollution Control: Marine Pollution
Private Bag X2
ROGGEBAAI
8012

Attention: Tamzin Drawe

A revised Plan for the Zone, incorporating Amendment No: issued on
has been received

and will replace the original Plan.

Signed Organisation

Date

OSCP-let.mvn

PLEASE NOTE: MARINE POLLUTION IS NOW PART OF THE NEW CHIEF DIRECTORATE, POLLUTION CONTROL. IT IS NO LONGER A DIVISION OF SEA FISHERIES.

OIL SPILL CONTINGENCY PLAN

Zone: Agulhas Amendment No.: 8 Date of Issue: June, 1998

To:

.....

.....

.....

.....

Enclosed please find the new telephone numbers for the Marine Pollution Officers in Cape Town. The attached pages should be pasted into the above Oil Spill Contingency Plan. Should you have any other changes you wish to include in the next full set of amendments, please advise us at the address given below.

To: The Director

Pollution Control: Marine Pollution
Private Bag X2
ROGGEBAAI
8012

Attn: Tamzin Drawe

Amendment No.:, issued on for the Zone has been
received and the Plan updated accordingly.

Signed Organisation

Date

OSCP-let.mvn

No.8: May 98

DEPARTMENT OF ENVIRONMENTAL AFFAIRS & TOURISM
OIL SPILL CONTINGENCY PLAN
AGULHAS ZONE

RESPONSIBLE AUTHORITIES:

Cape Nature Conservation
Bredasdorp Municipality
Gansbaai Municipality
Overberg District Council
Overberg Test Range

Approved after all the government departments and other bodies who are required to perform duties in terms of this Plan have agreed to act accordingly.

.....
Director-General:
Department of Environmental Affairs & Tourism
PRETORIA
Date:

DISTRIBUTION LIST

<u>No. of Document</u>	<u>Distribution</u>
501	Director-General: Environmental Affairs & Tourism
502	Director: Sea Fisheries Research Institute
503	Chief Director: Pollution Control
504	Head: Marine Pollution
505	Oceanographic Research Officer: Marine Pollution
506	Director-General: Department of Transport
507	Chief Director: SAMSA
508	Principal Officer: SAMSA, Durban
509	Principal Officer: SAMSA, Cape Town
510	Director: Water Pollution Control Division, Department of Water Affairs
511	Regional Director (Eastern Cape): Water Pollution Control Division, Department of Water Affairs
512	Oil Industry Environmental Engineer
513	Documentation Centre: EMA, CSIR, Stellenbosch
514	President: CSIR
515	Regional Representative: Coast Chief Directorate: Environmental Conservation Dept of Environmental Affairs & Tourism

516	Regional Director: Western Cape: Cape Nature Conservation, Private Bag 9086, Cape Town, 8000
517	District Manager: Boland & Breede River, Cape Nature Conservation, Private Bag 9086, Cape Town, 8000
518	Officer in Charge: Walker Bay area: Cape Nature Conservation, Private Bag X13, Hermanus, 7200

- 519 Officer in Charge: De Mond area, Cape Nature
Conservation, PO Box 277, Bredasdorp, 7280
- 520 Chief Director: Cape Nature Conservation,
Private Bag 9086, Cape Town, 8000
- 521 Reserve Manager: De Hoop Nature Reserve,
Private Bag X16, Bredasdorp, 7280
- 522 Chief Executive: Overberg District Council
PO Box 35, Bredasdorp, 7280
- 523 Deputy Director: Protection Services, Overberg
Regional Services Council, PO Box 35, Bredasdorp, 7280
- 524 Senior Manager: Overberg Test Range, Private Bag X12,
Bredasdorp, 7280
- 525 Site Manager: Overberg Test Range, Private Bag X12,
Bredasdorp, 7280
- 526 Chief Executive Officer: South Cape DC,
PO Box 12, George, 6530
- 527 Town Clerk, Bredasdorp Municipality, PO Box 51,
Bredasdorp, 7280
- 528 Town Engineer, Bredasdorp Municipality,
PO Box 51, Bredasdorp, 7280
- 529 Town Clerk, Gansbaai Municipality, PO Box 26,
Gansbaai, 7220

AMENDMENT LISTING

Amendment No.	Date of Issue	Pages Amended
1	May 1988	iv, 2, 11, 15, 18, 21, 23, 30, 31, 32, 33, 36, 37, 38,
	49, 51, 52.	
2	July 1989	iv, vi, 11, 31, 49, 50, 51.
3	October 1990	v, vi, 7, 11, 20, 23, 24, 25, 31, 32, 33, 34, 36, 39, 45, 46,
	47, 48, 49, 50, 51, 52.	
4	March 1992	vi, v, vi, 2, 3, 11, 31, 45, 46, 47, 48, 49, 50, 51, 52.
5	April 1993	iv, vi, vii, 3, 4, 5, 22, 49, 50, 51.
6	May 1994	i, iv, v, vi, vii, 3, 4, 5, 7, 11, 20, 25, 30, 31, 32, 33,
	34, 35, 36, 37, 38, 39, 49, 50, 51, 52.	
7	September 1996	vi, 11, 49, 52.
8	June 1998	11,49,50,51,52

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4. ACTS AND AGREEMENTS RELATING TO THE COMBATING OF OIL POLLUTION

- 4.1 The Prevention and Combating of Pollution of the Sea by Oil Act (No. 6 of 1981) gives the Minister of Transport Affairs wide-ranging powers regarding the prevention of oil pollution. However, in terms of Notice No. 1646 in Government Gazette No. 10377 of 8 August 1986, any power, duty or function regarding the combating of pollution of the sea by oil has been assigned to the Minister of Environmental Affairs & Tourism with effect from 20 May 1986. This gives the Minister of Environmental Affairs & Tourism specific responsibility for environmental protection and clean-up aspects of oil spills. During an incident, either Minister will be able to order any person who is capable, to supply goods or services required for the removal of such pollution. The responsibility for initiating and co-ordinating the necessary actions to effect protection and clean-up operations lies with the Departmental Officers to whom the Ministerial powers have been delegated. Various functions may also be delegated to Local Authorities and other relevant bodies.
- 4.2 In terms of the Sea Birds and Seals Protection Act (No. 46 of 1973), the Minister of Environmental Affairs & Tourism has jurisdiction over the offshore islands and all sea birds, whether they inhabit these islands or not. Marine Control: Chief Directorate Nature and Environmental Conservation (CPA) manages this Act, and will be responsible for co-ordinating the treatment of oiled birds.
- 4.3 In terms of the Sea Fishery Act (No. 12 of 1988), the Minister of Environmental Affairs & Tourism has jurisdiction over all established fishing harbours. Marine Control: Chief Directorate Nature and Environmental Conservation (CPA), will be responsible for the protection and clean-up of such harbours.
- 4.4 By virtue of the Health Act (No. 63 of 1977), it is the responsibility of the Department of Health and Population Development to delegate functions to a Provincial Administration or to a Local Authority to take steps to prevent the occurrence of any nuisance which may be harmful to human health, and to remedy such nuisance where it has occurred.
- 4.5 The Sea-Shore Act (No. 21 of 1935), makes specific provision for the protection of human health against pollution of the sea-shore or the sea. In terms of this Act, the State President may instruct any Local Authority to exercise any of the functions which are conferred on it by the Health Act.

NOTE:

The last two Acts, together with the Prevention and Combating of Pollution of the Sea by Oil Act No. 6 of 1981), thus confer on the Local Authorities the responsibility of co-operating with the Department of Environmental Affairs & Tourism in activities relating to the protection and clean-up of the shoreline as a result of oil spills.

- 4.6 In terms of the Water Act (No. 54 of 1956), it is an offence for any person to wilfully or negligently commit any act which could pollute any water in such a way as to render it less fit for the purpose for which it is, or could ordinarily be, used by other persons (e.g. the contamination of ground water supplies by the disposal of collected oil). For this reason, decisions regarding the final disposal of collected oil and oily waste must be taken by the

DEA & T On-Scene Co-ordinator mentioned in Section 8.2.1 on the advice of the Department of Water Affairs.

- 4.7 The Civil Protection Act (No. 82 of 1990), as amended, read in conjunction with the Civil Defence Ordinance (No. 8 of 1977) makes provision for the Provincial Authorities to confer the necessary emergency powers to Local Authorities in the event of an emergency or a disaster. An oil spill incident is not, however, regarded as falling within the definitions of disaster or emergency given in these statutes. The necessary powers and the organisation that will come into effect during an oil spill incident are set out in this contingency plan, and will be co-ordinated by the responsible government department. As can be seen in Section 8, the local civil protection unit is included as part of the response organisation.

- 4.8 Regulation 38(3) for the harbours of the Republic of South Africa and of South West Africa, promulgated by the Minister of Transport Affairs under powers vested in him by Section 73(1) of Legal Succession of The South African Transport Services Act (No. 9 of 1989), makes the provisions of the Prevention and Combating of Pollution of the Sea by Oil Act (No. 6 of 1981), applicable to the waters of a harbour under the jurisdiction of Portnet.

4.

5. LIABILITIES, CLAIMS AND COSTS

5.1 LIABILITIES

Section 9 of the Prevention and Combating of Pollution of the Sea by Oil Act (No. 6 of 1981) provides that the owner of any ship, tanker or offshore installation may be held liable for:

- (a) any loss or damage in the area of the Republic caused by pollution resulting from the discharge of oil from such ship, tanker or offshore installation,
- (b) the cost of any measures taken or caused to be taken by the Minister in terms of the Act after a spillage of oil or in the event of a potential spill,
- (c) any loss or damage caused by any measures so taken or caused to be taken.

The owner is, however, entitled to limit his liability in certain circumstances. The sum total of loss, damage and costs incurred may therefore not be met in full. Furthermore, provision is made to ensure that all costs and measures taken are reasonable and cost-effective in the circumstances prevailing at the time.

5.1.1 Identifiable Source

In the event of the source of oil pollution being identified, the Minister of Transport Affairs may, in terms of Section (12)(2) of Act 6 of 1981, require the owners/insurers to establish a fund from which claims can be paid. The Minister may claim the costs for loss, damage or clean-up from this fund to recompense those persons who may have any claim in terms of Section 5.1.

NOTE:

To assist in identifying the source, Local Authorities may be requested by the South African Maritime Safety Authority (SAMSA) to take samples of oil coming ashore on their beaches (see Addendum E for technique).

5.

5.1.2 Unidentifiable Source

Should the source of the oil not be identified, the Department of Environmental Affairs & Tourism may refund up to 50% of the cost so incurred, provided the claim meets the criteria set out in Section 5.3.

5.2 POLICY ON PURCHASING

In normal circumstances prior approval of the Department of Environmental Affairs & Tourism is required for the purchase or hire of anything by Local Authorities for which recompense is to be sought. However, in the interests of continuity of an operation where the resources of Local Authorities are insufficient to prevent or remove oil pollution, the Area Controllers (see Section 8.4.2) may within reasonable limits, purchase or hire additional equipment, purchase consumable materials, employ additional labour or engage the services of contractors without such prior approval, but are to advise the DEA&T Shore Controller immediately of such acquisitions. The purchase of capital equipment may, however, only be undertaken in consultation with the DEA&T Shore Controller and the SAMSA Administration Officer.

NOTE:

The attention of the Area Controller is drawn to the terms of Sections 5(5) and 5(6) of Act 6 of 1981, entitling the Minister of Transport Affairs to enquire into the reasonableness of costs incurred and claims made.

5.3 CLAIMS

5.3.1 Loss or Damage

All claims for loss or damage as envisaged in terms of Section 9(1)(a) and 9(1)(c) of Act 6 of 1981 shall be submitted to the DEA&T On-Scene Co-ordinator, who will take the necessary steps to establish that the claim is adequately substantiated and reasonable. Once the details of each claim have been verified, it will be

7.

6. PREPARATORY ACTIVITIES

6.1 DEPARTMENT OF ENVIRONMENTAL AFFAIRS & TOURISM

The Department of Environmental Affairs & Tourism Pollution Officers, marked with an (*) in Section 7.1.3, are responsible for the preparation improvement and updating of the Local Coastal Plans on an ongoing basis. In addition, they must ensure that the departmental organisation is maintained at a sufficient state of readiness to cope with an incident, and also be available to assist the Local Authorities with training activities when so required.

6.2 LOCAL AUTHORITIES

The Overberg Regional Services Council has nominated the Chief of Civil Protection to undertake the task of Shore Logistics Officer during an incident (see Section 8.4.1 for job description). In addition to his duties during a spill, this officer will be responsible on an ongoing basis for ensuring that the Local Authorities in this Zone are fully prepared to respond to an oil spill incident. He therefore has to be fully conversant with this plan, and must ensure that information regarding equipment and material, telephone numbers etc, is kept up to date. His contacts within the Department of Environmental Affairs & Tourism are the DEA&T Pollution Officers in Cape Town.

For each of the protection measures set out in Section 10, the relevant Local Authority must compile a plan detailing how the task can be completed in the shortest possible time. Detailed plans are also required for clean-up operations if these are unique. The Department of Environmental Affairs & Tourism will assess the viability of these proposed plans in relation to the availability, quantity and effectiveness of the materials, equipment and labour readily available, and make recommendations where necessary. The plans, once accepted, will then form part of this Oil Spill Contingency Plan.

6.3 TRAINING

The Department of Environmental Affairs & Tourism is responsible for ensuring that training is undertaken by those bodies involved in carrying out this Contingency Plan. Without such training, the plan has little value.

11.

7.1.3 Initial Report Call Numbers

1(a) DEPARTMENT OF ENVIRONMENTAL AFFAIRS & TOURISM

Pollution Officers: Marine Pollution

Fax (021)215342 Tel.: (021)4023911

Dr L Jackson	(021)4023344 (021)4615591
Mr R Harding	(021)4023338 (021)7902288
Ms T Drawe	(021)4023342 082 6574 099

Should none of the above pollution officers be available at either their office or home telephone numbers then contact should be made via the emergency cell phone number: 082 5576612

1(b) SAMSA

Cape Town Marine Survey Office:

Fax: (021)4190730 Tel. (021)216170/9

Capt DJ Colley	(021)216170/	(021)720758
Cellular	082 4453 158	
Capt White	(021)216170	(021)5573882

2. Civil Defence Regional Control Centre:

Bredasdorp

Mr A vd Westhuizen (02841)51157 (02841)42574

3. SAMSA: Pretoria

Tel.: (012)342 3049 Fax: (012)342 2160

Capt BR Watt	(012)3423049 (012)9913947
Cellular	082 4453 155
Secretary	(012)3423049
Capt WR Dernier	(012)3423049
Cellular	082 4453 155
Secretary	(012)3423049
Mr ET Beddy	(012)3423049 (012)3488982

In this Zone, the Chief of Civil Protection of the Overberg District Council, will undertake the task of Shore Logistics Officer (see Section 6.2 and 8.4.1). In the event of a major oil spill impacting the coastline of the Zone, the DEA&T Officers will control the operation from the Regional Civil Protection Control Centre, Cape Town. In addition, when alerted, all Local Authorities concerned must nominate officers from within their organisations to become Area Controllers and Administration Officers for the duration of an incident. The inter-relationships of these officers, whose efforts will be supervised by the DEA&T Shore Controller, are depicted on the organigram in Figure 2. The Area Controllers co-ordinate the activities of the Responsible Officers on site.

In terms of response actions, the Local Authorities will be required to provide assistance in the form of supervision, labour, transport and equipment for the protection and clean-up of their beaches and estuaries as set out in Section 10. They will also be responsible for making arrangements with local Traffic and Police Officers to ensure traffic and crowd control in the vicinity of the impacted area.

8.6.3 Radio

The following radio facilities may be utilised for communications amongst the various agencies involved in the oil spill response:

(a) Oil Pollution Control Channel

Departmental Officers may communicate between themselves and with the Kuswag vessels and aircraft by means of their own VHF nets, using the marine frequencies.

(b) District Council Channel

The Overberg District Council has a well established radio communication system operating in this zone. The Roads Department operates this system from base stations at Bredasdorp and Swellendam. This system incorporates 12 radios in cars, light delivery vehicles and motor graders. In addition there are two LDV's equipped with radios available, covering all the holiday resorts.

(c) Bredasdorp Civil Protection Channel

The Civil Protection Department makes use of hand operated VHF radios operating on 76,3 MHz. Sixteen private farmers have also been issued with radios to cover the whole area. The Ambulance Services are linked with the Civil Protection Department as well as with Metro in Cape Town.

(d) Cape Nature Conservation Channel

The De Mond Forest Station is equipped with 2 portable radios, one mobile radio and one base set. The Walker Bay Forest Station will be acquiring similar equipment. The De Mond Forest Station is linked to other stations utilising a repeater station at Potberg through a single transceiver on the high band link channel 143,775 MHz(TX) and 138,225 (RX). A proposed translator station will be erected during 1986 at a site fairly close to Die Kelders and Uilkraalmond.

30.

10. SITE SPECIFIC RESPONSES

<u>RESPONSIBLE AUTHORITY</u>		<u>SITE</u>	<u>PRIORITY</u>	<u>PERTINENT DETAIL</u>	<u>PRIORITY</u>	<u>ACTION</u>
<u>PRIORITY</u>	<u>ACTION</u>	<u>PROTECTION</u>				

AGULHAS ZONE:

- Marine Control: CPA
- Shellfish collection Medium Instruct concession holders to stop collection of shellfish, if severely impacted. Inform public of danger.
- Kelp collection Medium Advise concession holders of possibility of contamination.

NOTE:

Uilkraal River

Protection and clean-up of the Uilkraal River is the responsibility of the Caledon Divisional Council (See Caledon Zone Oil Spill Contingency Plan).

A. DUINEFONTEIN NATURE RESERVE:

- Cape Nature Conservation
- Access by track only Low Oil on beaches to be left to natural cleaning

unless there is a heavy deposit of fresh oil.

- Dunes sensitive to mechanical disturbance Medium

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PRIORITY		ACTION		RATING		PROTECTION		SITE		CLEAN-UP		Pertinent Detail		PRIORITY		ACTION	
----------	--	--------	--	--------	--	------------	--	------	--	----------	--	------------------	--	----------	--	--------	--

B. DYER ISLAND:

- Cape Nature Conservation
- Declared reserve supporting large seabird populations High Implement bird contingency plan and set up liaison with SA National Committee for the Conservation of Coastal Birds. High If requested by Dept of Environmental Affairs & Tourism set up temporary bird collection depot at location advised.
- Overberg District Council High If requested by SA National Committee for the Conservation of Coastal Birds. cleaning station of the SA National Committee for the Conservation of Coastal Birds.

C. PEARLY BEACH AREA:

- Gansbaai Municipality
- Small residential populations at Franskraal, Pearly Beach

and Afsaal

- Amenity beaches fringed by reefs

High Amenity beaches to be cleaned all year round.
Rocky areas to be left to natural cleaning unless there is a heavy deposit of oil.

Responsible Authority		SITE		Pertinent Detail	PRIORITY	ACTION
PRIORITY	ACTION	PROTECTION	CLEAN-UP			
RATING						
RATING						
-	Natural slipway at Pearly Beach	Medium	Advise owners to ensure boats are clear of high water.			
-	Haelkraalrivier	Medium	In the event of high spring tides build barrier as in Map 5A.	High	Should oil enter the river, the DEA&T On-Scene Co-ordinator should be advised immediately and clean-up should <u>only</u> be undertaken under the supervision of the DEA&T Shore Controller.	

D. HAGELKRAAL NATURE RESERVE:

- Cape Nature Conservation/Eskom
- Access by track only.
- Dunes sensitive to mechanical disturbance
- Low
- Shoreline to be left to natural cleaning, unless there is a heavy deposit of oil.

E. BUFFELJAGS AREA:

- Overberg Regional Services Council
- Landing beach for fishing
- Medium
- Advise owners to remove
- Low
- Shoreline to be left to

boats at Buffeljags; a small fishing village. fishing boats from water at Buffeljags. natural cleaning, unless there is a heavy deposit of oil. Landing beach to be cleaned of oil at all times.

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Responsible Authority		SITE	
PRIORITY	ACTION	PROTECTION	CLEAN-UP
	RATING	RATING	

F. QUOIN POINT NATURE RESERVE:

- Cape Nature Conservation
- Sensitive vegetated dunes
- Low Beaches, except the beach at Jessie-se-Baai, cleaning, unless there is a heavy of oil. Rocky areas to be cleaned of deposits only.
- Small Ratel River
- Medium In the event of high river, the DEA&T On-Scene spring tides build straw bale barrier Co-ordinator should be similar to that shown advised immediately and in Map 5B. clean-up should only be undertaken under the supervision of the DEA&T Shore Controller.

to be left to natural

- Overberg District

Council

(+) - Amenity beach at Die Dam.

Medium Beach to be cleaned
prior to and during
holiday season or if
there is a heavy
deposit of oil.

34.

Responsible Authority		SITE		Pertinent Detail	PRIORITY	ACTION
PRIORITY	ACTION	PROTECTION	CLEAN-UP			
RATING		RATING				
G. AGULHAS AREA:						

Overberg District
Council

- Ratel River (Die Mond) Medium In the event of high spring tides build barrier as in Map 5B. High Should oil enter the river, the DEA&T On-Scene Co-ordinator should be advised immediately and clean-up should only be undertaken under the supervision of the DEA&T Shore Controller.
- Coast fringed by rocks and tidal pools
- Beaches east of Struisbaai
- Low Beaches to be cleaned in the event of a heavy deposit of oil only.

35.

Responsible Authority		SITE		Pertinent Detail	PRIORITY	ACTION
PRIORITY	ACTION	PROTECTION	CLEAN-UP			
	RATING	RATING				
-	Amenity beaches at Aasfontein and Oubaai	Medium	Clean amenity beaches prior to and during holiday season, or when there is a heavy deposit of oil.			
G.1 Bredasdorp Municipality						
-	Amenity beaches at Agulhas and Struisbaai. are pebble.	Medium	Deploy straw on pebble beaches at Agulhas. cleaned all year round.	High	Amenity beaches to be	At Agulhas many beaches
-	Struisbaai fishing village. Fish packing plant adjacent to wide slipway.	Medium	Remove boats from water at Struisbaai.	High	Slipway to be cleaned of oil at all times. Fresh oil trapped in pools to be pumped ashore. Rocks may be cleaned manually, or by sea water jets. See Addendum B for treatment of pebble beaches.	
-	Damara Tern breeding sites along this coast	High	If oil threat east of Struisbaai contact DEA&T regarding Damara Terns and supply straw bales at Struisbaai if requested.			

36.

Responsible Authority		SITE		Pertinent Detail	PRIORITY	ACTION			
PRIORITY	ACTION	PROTECTION	CLEAN-UP						
RATING		RATING		Pertinent Detail	PRIORITY	ACTION			
RATING		RATING							
H. DE MOND NATURE RESERVE:									
<u>Cape Nature Conservation</u>									
-	Heuningness River: Mouth kept open artificially	High Close mouth with earth moving plant from RSC. See Map 5C.	High Should oil enter the estuary, the DEA&T On- Scene Co-ordinator is to be advised immediately. Clean-up should be undertaken <u>only</u> under supervision of the DEA&T Shore Controller.						
-	Beaches adjacent to River are breeding sites for Caspian Terns and seagulls.	High Contact DEA&T and supply straw bales if requested.	High Beaches adjacent to the river to be cleaned under supervision of the DEA&T Shore Controller.						
I. ARNISTON AREA:									
<u>Bredasdorp Municipality</u>									
-	Waenhuiskrans (Arniston) holiday and fishing village. Amenity beaches and slipway. Kassiesbaai.	Medium Ensure boats are removed from water at Arniston.	High Amenity beaches to be cleaned all year round. Slipway to be cleaned of oil at all times.						

37.

Responsible Authority		SITE		Pertinent Detail	PRIORITY	ACTION
PRIORITY	ACTION	PROTECTION	CLEAN-UP			
Cape Nature Conservation						
	RATING		RATING			
-	Area between Valknesfontein and Die Spuitgate; separate part of De Mond Nature Reserve.	Low	Beaches to be cleaned only in the event of a heavy deposit of oil.			
J. OVERBERG TEST RANGE: (MAIN SITE):						
<u>Overberg Test Range</u>						
-	The easterly portion of this area falls within the De Hoop Marine Reserve.					
-	Unspoilt stretch of sandy beach fringed by reefs in Skipskop area.	Low	Beaches to be cleaned only in the event of a heavy deposit of oil.			
-	Access by track only.					
-	Entry permit required prior to entry. ID books necessary.					
-	Stone fishtraps at Skipskop.	Medium	Oil to be removed from fishtraps.			

- Damara Tern and Oyster Catcher breeding sites. High threatened and supply straw bales if requested. Contact DEA&T if sites

Responsible Authority		SITE		Pertinent Detail	PRIORITY	ACTION
PRIORITY	ACTION	PROTECTION	CLEAN-UP			
RATING						
RATING						
K. DE HOOP NATURE AND MARINE RESERVE						
-	<u>Cape Nature Conservation</u>					
-	Security clearance required from Overberg Test Range at certain times of the year.					
-	Damara Tern breeding sites High If oil threat west of Koppie Alleen contact DEA&T regarding Damara Terns and supply straw bales at Koppie Alleen as required.					
-	Unspoilt stretch of sandy beach fringed by reefs in parts	-	Not feasible.	Low	Beaches to be cleaned only in the event of a heavy deposit of oil.	
-	Access by track only.					
-	Security clearance required prior to entry.					
-	Klipdriftfontein River	Medium	In the event of high spring tides build barrier as in Map 5D.	High	Should oil enter the river, the DEA&T On-Scene Co-ordinator should be advised immediately and	

clean-up should only be undertaken under the supervision of the DEA&T Shore Controller.

39.

<u>Responsible Authority</u>		<u>SITE</u>	<u>CLEAN-UP</u>	<u>Pertinent Detail</u>	<u>PRIORITY</u>	<u>ACTION</u>			
<u>PRIORITY</u>	<u>ACTION</u>	<u>PROTECTION</u>							
<u>RATING</u>		<u>RATING</u>							
<u>L. CAPE INFRANTA AREA:</u>									
-	<u>Overberg District Council</u>								
-	Holiday village at Infanta.			Medium Beaches to be cleaned prior to and during holiday season or in the event of heavy oiling.					

NOTE

Bree River

Protection and clean-up of the Bree River is the responsibility of the South Cape District Council (See Langeberg Zone Oil Spill Contingency Plan).

11. OIL DISPOSAL SITES

The Overberg District Council has proposed the following sites for the disposal of oily waste:

- Pearly Beach: An area next to the existing household refuse dump site is to be cleared of bush etc. Approximately 1 ha could be made available.
- Buffeljags: An area just inside the existing boundary fence of the Council and at the southern side of the access road to the camping site. This area is 2 ha in extent.
- Die Dam: The Council has a very small area of its own which could be made available for the disposal of oily debris. An area of 1 ha, next to the existing limestone quarry situated north of the access road to the camping site. the property belongs to the Department of Forestry.
- Agulhas and Struisbaai: There is an existing site of approximately 4 ha set aside for oily debris, north of the coloured township of Molshoop and east of the main tarred road to Struisbaai.
- Waenhuiskrans: The Council has a very limited area available and suggests that the owner of the farm Kliprug, situated north-west of Waenhuiskrans be approached in this regard.
- Cape Infanta: The Council does not own any property in this area and suggests that a local farmer be approached.

These sites are not suitable for the disposal of liquid oil, but may be used for the disposal of oil/sand mixtures and oily debris if the groundwater level is not less than 3 to 5 metres below the site. Any disposal must only be carried out after consultation with the Department of Water Affairs.

12. EQUIPMENT - MATERIAL - MANPOWER

12.1 PLANT AND MACHINERY

AUTHORITY	OVERBERG DC	OVERBERG CNC	FORESTRY	GANSBAAI
LOCATION	BREDASDORP SWELLENDAM	TEST DE HOOP	DUINEFONTEIN DE MOND	GANSBAAI
	RANGE	RESERVE		
PLANT & TEL	(02841)	(0291)	(02847)	(02922)
MACHINERY	51157	41189	59010	782
Bulldozers	4	5	0	0
Front-end loaders	2	4	0	0
Flat-bed transporter	1	0	0	0
Digger tractor shovel	1	0	0	0
Self-loading truck	1	0	0	0
Tractors 2 x 4	4	1	1	2
Tractors 4 x 4	2	1	0	0
Platform truck and crane	1	1	1	0
Tip trucks	16	15	1tr1r	0
Water trucks	3	3	2	0

Open trucks	0	0	0	1	2	1	0
LDV's 4 x 4	1	0	2	1	2	1	0
LDV's 2 x 4	0	0	2	1	1	1	2

47.

12.2 MATERIALS AND EQUIPMENT

AUTHORITY	OVERBERG DC	OVERBERG	CNC	FORESTRY	GANSBAAI
LOCATION	BREDASDORP SWELLENDAM	TEST	DE HOOP	DUINEFONTEIN DE MOND	GANSBAAI
	RANGE	RESERVE	MUNICIPALITY		
MATERIALS & TEL (02841) (0291) (02847) (02922) (02834) (02841) (02841)					
EQUIPMENT	51157	41189	59010	782	80100
				42170	40111

Portable centrifugal pumps 0 0 0 0 0 0 0

Sludge pumps 0 0 0 0 0 0 0

Straw bales 0 0 0 0 0 0 0

Petrol generator & lighting sets 0 0 available 0 0 0 0

200 l drums & bins 0 0 available 0 0 0 5

Wire mesh -diamond 0 0 0 0 0 0 0

Plastic and

13. TELEPHONE NUMBERS13.1 PRIORITY NUMBERS13.1.1 Department of Environmental Affairs & Tourism

13.1.1.1 Cape Town

<u>Pollution Officers</u>	<u>Office</u>	<u>Home</u>
Fax (021)215342		
Tel (021)4023911		
Dr L Jackson	(021)4023344	(021)4615591
Mr R Harding	(021)4023338	(021)7902288
Ms T Drawe	(021)4023342	082 6574 099

Should none of the above pollution officers be available at either their office or home telephone numbers then contact should be made via the emergency cell phone number: 082 5576612

13.1.2 SAMSA

13.1.2.1 Mossel Bay

Fax	(0444)911206
Mr D Manley	(0444)4201
Cellular	082 4453165

13.1.2.2 Cape Town

Marine Survey Office: Fax: (021)4190730 Tel. (021)216170/9

Capt DJ Colley	(021)216170	(021)720758
Cellular	082 4453 158	
Capt GL White	(021)216170	(021)5573882

13.1.2.3 Durban

Casualty Response and Maritime Pollution Prevention Control Centre: Marine Survey Office:
Fax: (031)3064983
Tel. (031)3071501

Capt RJ Zanders	(031)3071501	(031)253012
Cellular	082 4453 159	
Mr BA Yeo	(031)3071501	(031)7093084
Cellular	082 4453 160	

13.1.2.4 Pretoria

SAMSA: Tel.: (012)3423049 Fax (012)3423160

Capt BR Watt	(012)3423049	(012)9913947
Cellular	082 4453 155	
Secretary		(012)3423049
Capt WR Dernier	(012)3423049	
Secretary		(012)3423049
Mr E Beddy	(012)3423049	(012)3488982

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13.1.3 Civil Protection/Main Shore Control Centres

Bredasdorp Regional Control
Centre: (02841)51157
After hours (02841)72571

13.1.4 Communications

Cape Town Radio: Telex 527422
Superintendent (021)525858
Telephone Link (021)10214
Wireless Telephony Calls (021)522010/522011
Radio Inspectors (021)458211 x 2366
Port Elizabeth Radio (041)731016/731002

13.1.5 SA Foundation for the Conservation of Coastal Birds

Cleaning Centre (021)5576155
Mrs A Westphal (021)5776155 (021)7619627

13.2 RESPONSIBLE LOCAL AUTHORITIES

13.2.1 Overberg District Council

Mr W A Eckermans (CEO) (02841)51157 (02841)51617
Mr M Steyn (Roads) (02841)51157
Mr A vd Westhuizen (02841)51157 (02841)42574
(Protection Services)

Agulhas
Mr C Germishuys (02846)56015 (02846)56105

13.2.2 South Cape District Council

Mr E Lourens (02933)32438 (02933)31802

13.2.3 Overberg Test Range

Telex 524985

Security (02847)59010 (02847)59041
Dr J G Malan (02847)59010
Mr AJ Burger (02847)59010

51.

13.2.4 Cape Provincial Administration

Cape Department of Nature and Environmental Conservation

- Cape Town

Dr AJ Williams (021)4833020 Fax (021)23939

- De Hoop Nature Reserve

Mr M Scott (02922)782 (02922)782

Conservation Forestry

Cape Town

District Forest Officer

Mr van der Merwe (021)4617010 (021)992095

Duinefontein/Hagelkraal/
Quoin Point Forest Reserves

Mr de Wet (Uilkraal)	(02834)80100	(02834)8600
Mr C vd Berg (Hermanus)	(0283)770062	(0283)21919
Mr Taljaard (Arniston)	(02847)59600	(02847)59600
Mr Swart (De Mond)	(02841)42170	(02841)42170

Marine Conservation Inspectors

Cape Town (Chief Inspector)

Dr J A van Zyl (021)4023020

Bredasdorp

Mr W Fourie	(02841)41750	(02841)41955
Mr A Vermeulen	(02841)41750	(02841)42330

Struisbaai

Mr B Smit (02846)56220 (02846)56684

Arniston

Mr Hogg (02847)59720

13.2.5 Bredasdorp Municipality

Arniston, Agulhas, Struisbaai

Assistant Town Clerk:

Mr R Treurnicht (02841)51919 (02841)41293

Engineer:

Mr Groenewald (02841)51919 (02841)42315

13.2.6 Gansbaai Municipality

Town Clerk:	
Mr Pieterse	(02834)40111
Engineer:	
Mr D Crafford	(02834)40111

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13.3 SCIENTIFIC ADVISORY PERSONNEL

13.3.1 Pollution Control: Marine Pollution Cape Town: Fax (021)215342 Tel (021)4023911

Dr L Jackson	(021)4023344	(021)465591
Dr R Crawford (Sea Birds)	(021)4023140	(021)9483697
Mr B Dyer (" ")	(021)4023138	(021)5574102

13.3.2 Dept of Water Affairs

Mr G McConkey	(021)9507100
Autopage	1484616
Bleep	7693
Mr M van Zyl	(041)564884 (041)300693

13.3.3 Weather Bureau (Pretoria)

Forecast Office	(012)2903000
Director	(012)2902936
Shipping Forecaster	(012)3238333

13.3.4 Department of Health

Regional Director:		
Dr P Virgarellis	(021)978151	(021)618166

13.4 GENERAL

13.4.1 Oil Industry Representatives

Mr A Moldan	(021)4198054	(021)616058
Cell-phone	082 801 6215	
Weekends		(0283)62258

13.4.2 Hotels

Struisbaai Motel	(02846)56625
Arniston Hotel	(02847)59000

13.4.3 Caravan and Camping Sites

Uilkraalmond (Mr Liebenberg)	(02834)80200
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Pearly Beach (Miss Puren)	(02834)9613
Die Dam (Mr Smith)	(02848)710
Struisbaai (Mr Cooke)	(02846)56820
Waenhuiskrans (Mr Terblance)	(02847)59620

