
ESTUARY MANAGEMENT PLAN

2009 – 2014 : FIRST GENERATION EMP

for the

BOT / KLEINMOND ESTUARINE SYSTEM OVERBERG REGION, WESTERN CAPE

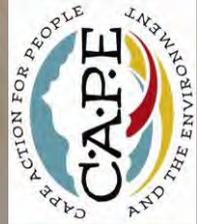
FIRST DRAFT DISCUSSION DOCUMENT

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FOR WESTERN CAPE NATURE CONSERVATION BOARD



C. A. P. E.
ESTUARIES
PROGRAMME



OVERSTRAND
MUNICIPALITY



NARRATIVE SUMMARY

This summary is provided as an overview presentation of the technical content of the First Draft Discussion Document for the Bot and Kleinmond Estuary Management Plan (Dec-2008) (EMP). It is the outcome of the work done in Phase 2 of the project, following the presentation and receipt of comments on the Draft Situation Assessment report (Sept-2008).

At the meeting of IAPs held on 16-Oct-2008, strong support was expressed for the prioritisation of biodiversity conservation in the estuarine environment and for safeguarding the nursery function of the Botvlei. The recreation and eco-tourism opportunities of the area were also emphasised. Based on these inputs, a vision statement for the long-term future state of the estuary is proposed as follows:

The Bot and Kleinmond estuaries and associated wetlands form a unique, biologically diverse and productive ecosystem. It is one of South Africa's most important nursery areas for the marine fish that sustain our fisheries. The tranquil quality of this natural environment makes it a popular recreation place for local families, fishers and nature-lovers and a sought-after destination for eco-tourists. Management of the estuaries takes place in partnership with the local community and all spheres of government.

As the first step towards achieving this, it is proposed that the Project Purpose for the this EMP should be:

A sustainable and co-ordinated programme of activities is underway to secure the long-term productivity of the Bot and Kleinmond estuarine ecosystem.

It is the first time that a plan of this sort has been prepared for the estuary and hence this 5-year plan is referred to as the First Generation EMP. The next EMP would have a different Project Purpose. A process of monitoring, evaluation and review, and planning for the subsequent 5-year cycle, is built into the Plan.

Implementation of the EMP will start with a consultation process where the Plan is presented, comments are received and the Plan is revised accordingly, so that a Final EMP document forms the basis of an inter-governmental Memorandum of Agreement between the institutions that will be involved in its implementation. The IAP forum (to be known as the Estuarine Forum) is an equally important roleplayer in implementation and the support of the Forum will be sought through distribution of this Summary, access to copies of the full document, a meeting presentation and invitations to comment.

Proposals presented at the meeting of 16-Oct-2008 have been revised in response to comments received. The 'tools' that are needed to address the causal factors of issues that are impacting on the productivity of the system have been reviewed and refined. The project objectives will be realised through four strategy sets, producing 15 co-ordinated outputs:

SOCIAL, INSTITUTIONAL AND GOVERNANCE

- 1.1 Organisational arrangements
- 1.2 Funding and capacity
- 1.3 Monitoring and evaluation programme
- 1.4 Improved compliance

WATER FLOW AND QUALITY

- 2.1 Resource Directed Measures
- 2.2 Water Quality programme
- 2.3 Riparian reserve

FISH RESOURCE PRIORITY AREA

- 3.1 Estuarine Protected Area
- 3.2 Mouth Management Policy
- 3.3 Co-operative management and sustainable use of marine living resources

ESTUARY + LAND USE, CONSERVATION + DEVELOPMENT

- 4.1 Spatial framework for conservation and development
- 4.2 Coastal Planning Scheme
- 4.3 Conservation Plan
- 4.4 Public Recreation Areas development
- 4.5 Eco-tourism development

SOCIAL, INSTITUTIONAL AND GOVERNANCE STRATEGIES

1.1 Organisational arrangements

The Bot estuary is an exception in South Africa where estuaries have historically received little management attention. This has been addressed in the Integrated Coastal Management Bill which requires that a protocol for estuary management is developed and allocates responsibility for co-ordinating this to DEAT through the Marine and Coastal Management (MCM) sub-directorate. The CAPE Estuaries Programme was established with a mandate from MCM, DWAF and other stakeholders to oversee the preparation of EMPs in the Cape Floristic Region. The new dispensation means that there will be funds and a mandate for establishing an Estuarine Management office in the Overstrand Municipality. This office will be tasked with co-ordinating implementation of Estuary Management Plans in the Overstrand. The setting up of this office, and facilitation of the MOU that signifies the adoption of the EMP by participating institutions, is a component of Management Action Plan 1.1.

In line with national protocol, it's proposed that the community-based Estuarine Forum must have a significant role in estuary management. Management Action Plan 1.1 therefore involves facilitating the formal constitution of the Estuarine Forum for the Bot and Kleinmond Estuaries, and a Technical Working Group to act as the co-operative body for participating institutions, experts and people with local knowledge. A number of focus area Working Groups will be established to support specific strategies and ensure that affected parties are represented in decision-making. The OSM Estuaries Management office will be responsible for convening two official meetings of the Estuarine Forum every year, and quarterly meetings of the Technical Working Group.

The targeted results of this strategy are that,

- By 2009 Q3 the First Generation EMP has been adopted.
- By the end of the project (EOP), an effective and sustainable organisational structure for co-ordinating management activity focused on the Bot and Kleinmond estuaries has been established.

1.2 Funding and capacity

Because there was previously no formal mandate for estuary management, funds for related projects were not readily available and people were not fully au fait with what is involved in estuary management. Low levels of capacity are particularly noticeable in units responsible for enforcing by-laws and regulations that are designed to protect estuarine health and resources.

Management Action Plan 1.2 involves securing the funds that are needed for implementation of the projects identified in the EMP and, later on, for the next cycle of implementation in order to ensure a seamless transition. Provision is also made for attendance at training courses in estuarine management and enforcement. Budgets for the former have already been set aside for the first few years of this planning period.

The targeted results of this strategy are that,

- By 2010 Q2, all participating institutions have made provision in their MTEFs for the funds and developed capacity required for implementation of the First Generation EMP.
- By 2014 Q3, funds are committed for implementation of the Second Generation EMP.

1.3 Monitoring and Evaluation programme

A new rigour to monitoring and evaluating the impacts of projects has been introduced in South Africa since we started to receive donor funding from sources such as the World Bank and EU. Donors want to know that the project is bringing about the desired changes. The EMP has been developed according to a Logical Framework Approach and includes an LFA matrix for this purpose. However, the monitoring and evaluation needs of a project like this, which requires the collection of a range of scientific data, extend beyond simply monitoring project progress. In many instances, the data is already being collected by a range of different organisations, and needs to be collected and reported on by the Estuary Management Co-ordinator.

Management Action Plan 1.3 involves designing a system, facilitating agreement on targets and methods for monitoring, collection and storage of

information, managing a team of monitors, and preparing and circulating quarterly reports, among other things. It also makes provision for annual interim evaluations and a final evaluation of the impact of the First Generation EMP, in order to ensure that lessons learnt can be built into the planning for the next cycle of implementation.

The targeted results of this strategy are that,

- By 2010 Q3, estuarine health and implementation of the EMP is being monitored in accordance with a detailed Monitoring and Evaluation framework.

1.4 Improved compliance

In the course of conducting the Situation Assessment we received numerous reports of illegal dumping, littering, fishing with illegal gear, vandalism, boat and off-road vehicle use in contravention of by-laws and regulations, and inadequate enforcement.

Management Action Plan 1.4 is a strategy which combines improved enforcement and prosecution with an approach that seeks to also address the causal factors of non-compliance by building an ethic of accountability and shared responsibility for the health of the estuary. This will involve facilitating meetings that seek to identify the root of, and solution to, such behaviour, establishing and maintaining a reporting hotline and response strategy, and raising awareness of the issues that threaten estuarine health and productivity. The programme will seek to build on existing initiatives and tap into the opportunities presented by other EMP strategies, such as improved capacity for enforcement (MAP 1.2) and the co-operative management of living resources (MAP 3.3).

The targeted results of this strategy is that,

- By EOP, reported incidents of non-compliance with regulations and bylaws relating to pollution, water use, marine living resources, land use, and recreation activities on and alongside the estuarine water bodies, have decreased by 50%.

WATER QUALITY AND FLOW

Increased river inflow to the Bot/Kleinmond system () achieved by both the RDM and Riparian Reserve strategies.

2.1 Resource Directed Measures (RDM)

Concern is mounting nationally about the limited natural supply of fresh water relative to the demand of the growing human population. It has been recognised that the over-abstraction of water from rivers for human use leaves insufficient water to support ecosystems in downstream environments such as estuaries. The National Water Act, 1998, requires that water use is managed with due regard to the ecological reserve that is needed to sustain affected ecosystems. The system for calculating and managing water use is referred to as Resource Directed Measures (RDM). DWAF is funding the roll-out of RDM studies across the country on a prioritised basis.

The current reduction of freshwater flow into the Bot estuary, ascribed to a combination of human abstraction and water-thirsty alien vegetation in the catchment, is estimated at 25% of Mean Annual Rainfall. It is regarded as one of the factors contributing to infrequent natural breaching. There is no Water User Association set up for the Kleinmond area.

Management Action Plan 2.1 involves securing the funds for an RDM study for the Bot and Kleinmond Rivers, establishing the ecological reserve required for healthy ecosystem functioning and a programme for associated monitoring (linked to MAP 1.3 – Monitoring and Evaluation Programme), establishment of Water User Associations where these do not already exist, and then managing the issuing of water use licenses. The strategy includes an OSM-based initiative to promote economy of water use, particularly relevant in coastal settlements where there is a seasonal influx of visitors.

The targeted results of this strategy is that,

- By EOP, water quality and use in the Bot and Kleinmond Rivers is managed in accordance with Resource Directed Measures (RDM), as described in the National Water Act (1998).

2.2 Water Quality Programme

Estuaries and the sea are the receiving environments for water that has made its way through the catchment, picking up substances from above or below ground on its way. Things like fertiliser, pesticides, and *E.coli* bacteria, nitrogen and phosphates from human sewage, are potentially harmful once they enter the estuary and can lead to fish kills. While water quality in the Bot estuary is considered to be relatively good there are undocumented reports of anoxic zones and late die-back of vegetation in the head of the lagoon that is indicative of nutrient enrichment. According to the OSM SDF, sewer mains and treatments works in areas around the estuary require upgrading and no new developments should be authorised until this has been done. Sewerage pump stations, normally located at low points next to water courses, are not all equipped with standby generators to cope with power cuts. Some properties are reliant on in situ treatment or conservancy tanks. The tariff structure for servicing conservancy tanks is based on a call-out charge, leading people to avoid it for as long as possible – sometimes too long.¹ Agricultural industries upstream discharge waste products into the river.

Management Action Plan 2.2 involves the establishment and implementation of a rapid response strategy for pollution follow-up, revision of the tariff system for conservancy tanks, and ensuring that budgets are allocated for upgrading infrastructure. In addition, a catchment-wide strategy is required for addressing upstream impacts on the quality of freshwater inflow. This is outside the scope of the EMP but the Estuarine Management Co-ordinator needs to liaise with the LandCare programme to promote water-wise irrigation practises, reduce erosion, sedimentation and the use of fertilisers, herbicides and pesticides, and with Breede CMA to stop the discharge of effluents from agricultural industries into rivers upstream from the estuary. Water quality will also be improved through implementation of the Riparian Reserve strategy (MAP 2.3).

The targeted results of this strategy is that,

¹ The City of Cape Town's tariff structure for sewerage services is based on the customer's water consumption. This is equally applicable to sewerage and conservancy tank properties.

- By EOP, there is a measurable improvement in water quality in the Bot and Kleinmond estuaries.

2.3 Riparian Reserve

The National Water Act defines a riparian habitat as "commonly characterised by alluvial soils, and which are inundated or flooded to an extent and with a frequency sufficient to support vegetation of species with a composition and physical structure distinct from those of adjacent land areas." Riparian areas perform a variety of functions that are of value to society – they store water and help reduce floods, they improve water quality by trapping sediment and nutrients, and they provide shelter and food for birds and other animals, particularly useful in agricultural areas dependent on pollinators.

The Bot-Kleinmond EMP Situation Assessment identified the need for a riparian reserve as a device for filtering run-off – treated effluent / leachate, fertilisers, pesticides – and for enhancing scenic value – screening of cultivated areas, and buildings if possible within the constraints of naturally occurring local vegetation types and the desire for outlook.

Management Action Plan 2.3 provides for the delineation² and establishment of a Riparian Reserve – a useful device for land use management in the context where flood lines are not available. The estuarine catchment will be prioritised as the first phase of the project which could be expanded into other catchments. The strategy also includes provision for the EM Co-ordinator to liaise with Working for Water Programme to control invasive alien vegetation in the wider catchment.

The targeted results of this strategy is that,

- By EOP, a riparian reserve has been established on all estuarine frontages at the Bot and Kleinmond, and plans are underway to extend this into the upper catchments.

² Described in DWAF. 2005. A practical field procedure for identification and delineation of wetlands and riparian areas. Another useful reference: Quinn NW. A decision support system for rehabilitation and management of riparian systems. WRC Report Number: 1064/1/03.

MANAGEMENT OF THE FISH RESOURCE

3.1 Estuarine Protected Area

Many marine fish species are born at sea and spend their juvenile years in the sheltered environments of estuaries, returning to sea after two to five years to spawn. Estuaries thus perform an important nursery function for marine fish and the Botvlei, with its expansive shallow areas, is one of the largest nursery areas along the southern coastline between Cape Point and Breede River. Since fisheries began to collapse in the 1950s as a result of overexploitation of the stock, there has been an international drive to set aside areas as no-take zones, where populations can recover and thereby replenish the stocks in the area generally. In South Africa scientists and managers are currently looking at how to expand the marine protected area network in order to ensure that the full range of habitats required in species' life cycles are included. The WWF Marine Programme is currently investigating proposals to establish such a system in the near-shore environment of the Kogelberg Biosphere Reserve.

The establishment of sanctuary zones to support the nursery function in the Bot estuary could be achieved through amendment of the regulations that currently govern recreational use. An alternative is the inclusion of the estuary in the marine park under consideration, either through extension of the Kogelberg Biosphere Reserve, or an extension of just the marine park. Further investigation is needed in order to assess the options. The CAPE Estuaries Programme's Regional Conservation Plan proposes that 50% of the estuary is protected and this is the target that has informed the zoning that is proposed in Part D of the EMP.

Management Action Plan 3.1 involves consultation on targets for conservation and EMP zoning proposals, the de facto establishment of sanctuary areas through consensus and self-regulation, and the assessment of mechanisms to secure their formal protection and managerial support.

The targeted results of this strategy is that,

- By EOP, estuary users do not remove marine living resources nor disturb sediments in demarcated sanctuary zones which support the

nursery function of the Bot estuary. The assembly of mechanisms to secure their formal protection is underway.

3.2 Mouth management policy

The dynamics and management of the mouth of the Bot estuary has been a hotly contested and extensively studied subject over the last few decades. A symposium in 1983 resulted in publication of a set of scientific papers that provided an excellent basis for informed decision-making and a number of subsequent 'indabas' provided the basis for the policy that is currently being implemented. What has plagued the issue to date has been the absence of a consensual management objective. Debate has been driven by local stakeholder interests which are diverse and sometimes conflicting.

The conclusion of the Situation Assessment was that the value of the nursery function justifies the case for managing the estuary as a resource-orientated service area in the interests of the national economy and global food security. IAPs at the meeting on 16-Oct-2008 were asked their views on the 'purpose' of the Bot and the nursery function received significant support, along with biodiversity conservation and recreation. It is considered appropriate, therefore, that the mouth management policy should adopt the nursery function as its priority objective and support other considerations as far as is possible without jeopardy to the nursery function.

Management of the estuary to date has been led by CapeNature's Kogelberg area unit supported by the Overstrand Municipality and an advisory committee. In terms of the ICM Bill, DEAT is mandated to make policy and plans for the management of estuaries. Through the establishment of organisational structures described in this plan, responsibility for management of the estuaries, including mouth management, will be transferred to a local estuarine management office supported by the Estuarine Forum and TWG. Mouth management policy development will be led by DEAT-MCM. During the transition period preceding adoption of the EMP, MCM will support the planned 'Indaba' by preparing a scientific evaluation of the current policy.

Management Action Plan 2.2 will further involve development of an interim revised policy following the 'Indaba', subsequent revision following completion of the RDM study, and the ongoing monitoring and evaluation of mouth management indicators. Management decisions will be made in

consultation with the Estuarine Forum. Policy development will be done by MCM with support from estuarine specialists in hydrodynamics, fish, birds, ecology, marine sediment transportation, plus a consensus facilitator policy and guideline developer and writer.

The targeted results of this strategy is that,

- By 2010 Q1, a policy has been adopted for mouth management which prioritises the nursery function of the Bot estuary.

3.3 Co-operative management and sustainable use of marine living resources

Hawston was established to the east of the estuary in 1859 and was traditionally a fishing community. Concerns about the health of national fish stocks resulted in the withdrawal of commercial fishing licenses and, most recently, the closure of the abalone fishery. Restrictions have had a significant impact on this community, and its equivalent at Kleinmond, the majority of whose members subsist on less than R1,600 per household per month (census data). It is a story that is echoed around the world, from Iceland to Indonesia (National Geographic, April 2007). It is common knowledge that there is an illegal gillnet fishery operating in the Bot estuary, impacting heavily on the stocks of linefish and on the nursery function. Calls for action have elicited no response from enforcement units to date. The international literature on fisheries management confirms this as a capacity limitation that is widespread in developing countries and proposes that, in these circumstances, local, community-based management is a more effective strategy. There has been experimentation and some successes with this approach in South Africa, particularly on the east coast, and these lessons could be applied in developing an approach to community-based management of the nursery function of the Bot. Through actively engaging local communities in management, local fishers regain their sense of ownership of the resource, self-regulation is supported and the need for enforcement is reduced.

Management Action Plan 3.3 involves development of a community based structure for co-operative resource management to actively manage the nursery function, that includes opportunities for local fishers to benefit from training in fisheries management, and the documentation of traditional knowledge. It will aim to establish a knowledge base that integrates

traditional knowledge with scientific rigour, and will enable local fishers to engage more confidently in estuarine management. The documenting of traditional knowledge also hold potential by-products for ecotourism development, through storytelling (MAP 4.5), and for awareness raising (MAP 1.3 – Improved compliance).

The targeted results of this strategy is that,

- At EOP, five local fishers are actively engaged in community-based resource management of the Bot estuary's marine living resources.
- By 2012 Q2, the unlicensed subsistence fishery is permanently closed.

LAND USE – CONSERVATION AND DEVELOPMENT

4.1 Spatial framework for conservation and development

Residents have expressed legitimate concerns about the implications of further development in the estuarine catchment. Most of the things that impact negatively on estuarine health are generated by land-based activities, and most of those are carried into the estuary by water – surface run-off and groundwater. The CAPE Estuaries Programme's Regional Conservation Plan proposes that conservation is prioritised in at least 50% of the Bot-Kleinmond estuarine margin.

A draft spatial framework for conservation and development in the estuarine catchment has been developed as part of the EMP (Part D). This aims to ensure that that corridors of ecological and hydrological significance are protected. It includes the Riparian Reserve to be established through MAP 2.3. Developmental growth, as motivated in the Provincial SDF and the OSM IDP, is directed into areas which are either already transformed or are considered 'safe' in terms of environmental impacts – provided that they are underpinned by sustainable infrastructure and service development. Other priorities identified by IAPs relating to recreational amenity and eco-tourism are provided for. The EMP's SCDF is provided as a starting point for the OSM and other stakeholders to interrogate and reach agreement on proposals for the Rural Development Area proposed in the OSM SDF. The framework will be refined and developed in consultation with stakeholders and ultimately integrated into the OSM SDF.

The targeted results of this strategy is that,

- By 2009 Q3, IAPs have agreed on a Spatial Conservation and Development Framework (SCDF) for the Bot-Kleinmond estuarine catchment area which prioritises biodiversity conservation in 50% of the estuarine margin.
- By 2012 Q2, the SCDF is integrated into the OSM's SDF.

4.2 Coastal Planning Scheme

The SCDF, like SDFs generally, is a useful tool for agreeing on targets for conservation and ensuring that future growth is accommodated in areas where it can be managed sustainably. The regulation of land use is provided for through another management tool, historically referred to as the Town Planning Scheme. Since the consolidation of towns and rural areas under the umbrella of local municipality administration in 2000, new legislation requires that this Planning Scheme must be extended across rural areas. The ICM Bill has introduced a requirement that these (Town) Planning Schemes include special attention to coastal areas, including the land around estuaries. This involves insertion of an overlay zone, called a Coastal Protection Zone, making provision for public access to Coastal Public Property and showing the extent of Coastal Public Property (below the high-water mark). Land use in the Coastal Protection Zone will be "managed, regulated or restricted" to serve the objectives of coastal systems conservation, ecological health, managing the risks of climate change, and activities such as rescue operations and salvage/removal, e.g. carcasses or flotsam. The Coastal Protection Zone could be made up of a range of sub-zones (e.g. riparian reserve, access way, littoral active zone etc). The Planning Scheme would need to provide management directives, corresponding to each of the sub-zones, that set out the restrictions and make reference to associated local municipality by-laws and national/provincial regulations, e.g. ORV regs. These would be ADDED to any existing land use restrictions attached to an erf in terms of the existing zoning.

The introduction of Coastal Planning Schemes will provide the much needed and overdue 'teeth' to enable improved management of land use in coastal areas. Its introduction in the Botvlei-Kleinmond area involves substantial preparation which is addressed through MAP 4.2: a survey of the high-water mark during open mouth conditions, determination of the

upper limit of the estuary, collecting up-to-date cadastral and zoning data, testing the legal implications of the new legislation, drafting the Coastal Planning Scheme, amending any related by-laws and regulations, and updating the OSM Planning Scheme accordingly.

The targeted results of this strategy is that,

- By EOP, a Coastal Planning Scheme relating to the Bot-Kleinmond estuaries has been drafted for integration into the OSM's Planning Scheme, as provided for in the Integrated Coastal Management Bill.

4.3 Terrestrial conservation plan

The delineation of the areas proposed in the EMP SCDF for protection from development has been generated through a desktop study using available data. All formally proclaimed protected areas, including Mountain Catchment Areas, make up the category 'Conservation 1'. Another category – 'Conservation 2' – was generated by locating areas of critically endangered vegetation, high priority wetland habitats, untransformed areas of high-value / high-sensitivity vegetation, and dynamic coastal process areas, and linking them via drainage lines to core conservation and mountain areas, and the riparian coast-to-mountain corridor.

Whilst some of these areas may be suitable for formal protection as nature reserves, many of them are more suited to being managed as biodiversity priority corridors on privately owned land or the municipal open space system. Management Action Plan 1.3 involves fine-scale mapping of sensitive areas, fine-tuning EMP SCDF spatial proposals for conservation, and then identifying the best options for securing conservation of these areas depending on whether they are urban or rural, state-owned or private. Mechanisms such as an urban open-space system and Stewardship arrangements would be considered. Plans for actioning the preferred options, and land use guidelines, will be drafted and implemented.

The targeted results of this strategy is that,

- By 2011 Q4, a plan for assembling the terrestrial conservation-targeted components of the SCDF has been adopted and is being actioned.

4.4 Public Recreation Areas Development

Local stakeholders have reported dissatisfaction regarding public recreation areas in the Botvlei area, including inadequate access, inadequate facilities, poor management of existing facilities, environmental abuse and vandalism. The South African festive season is characterised by a massive influx of people to the coastal areas throughout the nation which peaks on New Years Day in proportions that challenge town and city managers even in the most well-resourced metropolitan areas.

At present there are two recreation areas with facilities that are available: at Kleinmond estuary and at Fisherhaven, in the backwater area next to the yacht and boat club. The negative environmental impacts of toilet facilities at Kleinmond estuary, and the bridge at the mouth, are identified in the CAPE Estuaries Programme's Regional Conservation Plan as targets for rehabilitation. The amenity at Fisherhaven is derived mainly from the slipway and parking lot and, although there is provision for swimming, it is not suitable for family recreation. Short-term camping over the festive season at Middelvlei State Ground has been plagued with problems involving damaging environmental impacts, access rights and the unmonitored, isolated access route. Access to the eastern shore of the mouth of the Bot is semi-privatised. Access at Rooisand is also via an unmonitored, isolated route which at times has been blocked in an effort to prevent illegal launching. The Rooisand and Lamloch wetlands are sensitive environments that do not support vehicular access.

The SCDF identifies recommended public access points – a requirement of the ICM Bill – at the mouth of the Bot (eastern shore), Middelvlei State Ground, Fisherhaven, Rooisand (for eco-tourism purposes) and the Kleinmond estuary mouth area (western shore). It further identifies the potential extent of recreational precincts – existing areas at Kleinmond and Fisherhaven which could be upgraded, and a new one extending along the existing road leading to Middelvlei State Ground

Development of this controversial site potentially provides the incentive for the Municipality to address a number of problematic management issues and provides a vehicle for the estuarine community to 'take the bull by the horns' with respect to the proposals for westward expansion of the Greater Hermanus urban area. Access to the estuarine frontage is gained via an isolated gravel road through an area infested with alien vegetation which is

frequently the target of illegal dumping. The State Ground has become the fall-back option for families who uphold a festive season tradition of camping at the shore. There are no facilities and no 'structural framework' to support these activities and uncontrolled fires, use of ORVs in dune areas and undisposed waste are the outcome. The development of a facility to support activities in this isolated location is not regarded as a sustainable option due to the high maintenance costs that would be incurred to provide security and guard the facility against vandalism. The Overstrand Municipality, in the 2006 SDF, identifies a vast area including this, and the Middelvlei coastal dunes, for westward expansion of Greater Hermanus. Residents of the estuarine margins are opposed to urban expansion within the margins. The Middelvlei coastal dunes – former dynamic dunefields that were stabilised in the early part of the twentieth century – were identified in the EMP assessment as unsuitable for development. The assessment also noted the maintenance of an area of open space between the settlements of Fisherhaven and Hawston on land which appears to be suitable for development (more suitable than the dunes, for instance). All of these factors hold a potential solution to the problems of access and recreational facilities and the need for urban development: the creation of a residential-recreational precinct, with supporting commercial and social facilities, creating a monitored route to the shoreline where permanent facilities are provided for day-trippers, and short-term camping is supported during festive times. With a well-managed consultative planning process, good design, and attention to existing water and waste treatment shortcomings, this strategy holds the potential to provide a long-term sustainable solution to many of the social and environmental problems evident in this part of the study area, as well as providing opportunities for economic development.

Management Action Plan 4.4 outlines a process for engaging stakeholders in the selection and definition of two estuary-based recreational precincts for development, and developing these through public-private partnerships. The developments potentially provide scope for increase access, job creation and local enterprise development.

The targeted results of this strategy is that,

- By 2011 Q3, a plan for developing the Public Recreation Areas identified in the SCDF has been adopted and is being actioned.

4.5 Eco-tourism development

The EMP Situation Assessment found that tourism in the Bot and Kleinmond estuarine area is seasonal and largely underexploited. Residents are concerned that the system does not have the capacity to carry large numbers of tourists. The OSM promotes tourism as a vehicle for economic development in the coastal area, based on the natural heritage attraction. Responsible eco-tourism development strategies seek to create opportunities for tourists to enjoy the natural and cultural heritage of a place without imposing negative impacts and ensuring that local communities benefit from the development through the introduction of sustainable livelihood opportunities.

The Bot-Kleinmond coastal area holds many opportunities for such development, ranging from guided hikes and canoe trails to the telling of stories of cultural histories and traditions rooted in the fishing activities of local communities. Some experience has been gained in the area and lessons can be drawn from local projects such as Hawston Abalone Village. Links can be forged between local entrepreneurs and private developers engaged through MAP 4.4 - Recreational Areas development.

MAP 4.5 involves engaging local communities in identifying and defining opportunities for nature-based and cultural tourism, enlisting the assistance of eco-tourism experts in developing and promoting these, and then implementing these proposals through partnerships between local entrepreneurs and the OSM LED office.

The targeted results of this strategy is that,

- By 2011 Q3 the Overstrand Municipality has awarded five concessions for development of ecotourism ventures.
- By 2013 five new estuarine-based locally owned ecotourism enterprises are established and operating.

CONCLUSION

The Draft EMP presents an integrated and holistic approach to addressing not just the impacts but also the social and economic drivers that affect estuarine health. Most of these are problems that cannot be solved overnight, or opportunities that cannot be realised in a day. The actions proposed in this Plan will be the first steps of a long-term process designed to secure ongoing and sustainable improvements to the current situation.

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ACRONYMS AND ABBREVIATIONS

C4, C8 etc.	Job grade code	mgmnt	management
CAPE EP	CAPE Estuaries Programme	MLRA	Marine Living Resources Act, Act No.18 of 1998
CAPE	Cape Action for People and the Environment	MOA	Memorandum of Agreement
CMA	Catchment Management Agency	MOU	Memorandum of Understanding
CPS	Coastal Planning Scheme i.t.o. ICM Bill (2008)	MTEF	Medium Term Expenditure Framework
DEADP	Department of Environmental Affairs and Development Planning (Western Cape)	NEM	National Environmental Management
DEAT	Department of Environmental Affairs and Tourism (national)	NEMA	National Environmental Management Act (1998)
D.Agric	Department of Agriculture	NWA	National Water Act, Act No.36 of 1998
ECA	Environment Conservation Act, Act No.73 of 1989	ODM	Overberg District Municipality
EF	Estuarine Forum	OSM	Overstrand Municipality
EIA	Environmental Impact Assessment	PM	Project Manager
EM	Estuary Management	PR-x.x.x	EMP Project reference number
EMP	Estuary Management Plan	Q1, Q2 etc	Quarter 1 (being January-February-March) , Quarter 2 etcetera
EOP	End of project (1st Generation EMP)	RDA	Rural Development Area
EZP	Estuarine Zoning Plan	RDF	Rural Development Framework
GIS	Geographic Information Systems	RQO	Resource Quality Objectives
IAPs	Interested and Affected Parties	SA	South Africa
ICM	Integrated Coastal Management	SANBI	South African National Biodiversity Institute
IDP	Integrated Development Plan	SCDF	Spatial Conservation and Development Framework
LUM	Land Use Management	SDF	Spatial Development Framework
LUMS	Land Use Management Systems	SPC	Spatial Planning Category
M&E	Monitoring and Evaluation	TWG	Technical Working Group
MCM	Marine & Coastal Management Sub-directorate of DEAT	CNC	CapeNature Conservation
		WG	Working Group

INTRODUCTION

This document describes the plan for managing the Bot and Kleinmond estuaries and associated wetlands over the 5-year period commencing in the third quarter of 2009. It is the first time that a plan of this sort has been prepared for the estuary and hence it is referred to as the First Generation EMP. A process of monitoring, evaluation and review, and planning for the following 5-year cycle is built into this plan.

A Situation Assessment of the Bot and Kleinmond estuarine system was conducted during the period August to September 2008. The final draft of the report, dated February 2009, and incorporating comments received from interested and affected parties, is a background document to this Plan.

The EMP has been prepared at a time when the promulgation of South Africa's Integrated Coastal Management Bill is imminent. The ICM Bill calls for establishment of a national estuarine management protocol. The development of the Bot / Kleinmond EMP is one of the projects in the Cape Floristic Region that are contributing to the formulation of the protocol.

Document structure

Part A sets out the **Objectives** for the EMP. They collectively describe the desired future state at the end of the five-year period and provide the overarching logical framework for the Management Action Plans.

Part B contains the detailed **Management Action Plans (MAPs)**.

Part C presents **Management Action Summaries**: The proposed allocation of activities to participating institutions, a Gantt chart showing time frames, and a 5-year budget of indicative funding requirements for implementation of EMP projects.

Part D presents the First Draft version of the **Estuary Zoning and Land Use Framework** which will be used as the basis for further consultation with stakeholders in terms of MAP 4.1.

Who will use this document?

The Narrative Summary at the front of the document will be used as the basis for presentations of the draft proposals in consultation with stakeholders. Consultation will be followed by formal adoption and funding. This First Draft Discussion Document is an indicative plan which provides the basis for you – the participating institutions – to examine your roles in its implementation and understand the allocated responsibilities. It provides the basis for you to assess your organisation's current capacity and resources, relative to the allocated responsibilities, and make decisions that would include any or all of the following:

- Undertake to carry out the activities for which you are the "Responsible entity" in this document;
- Delegate some or all of your responsibilities to another organ of state or entity;
- Engage in the planning process in order to identify another means of achieving the objective;
- Notify the CAPE Estuaries Programme of any errors or misinformation.

Summaries of responsibilities of participating government institutions, and indicative funding requirements, are included for this purpose in Part C.

The final draft of this document will be the basis for a Memorandum of Agreement – a contract between participating institutions – and will represent the Project to be implemented during the first five-year period.

PART A: OBJECTIVES

A **vision statement** must express the collective view of stakeholders for the long-term future state of the estuary. Based on the contributions of IAPs at the meeting on 16 October 2008:

The Bot and Kleinmond estuaries and associated wetlands form a unique, biologically diverse and productive ecosystem. It is one of South Africa's most important nursery areas for the marine fish that sustain our fisheries. The tranquil quality of this natural environment makes it a popular recreation place for local families, fishers and nature-lovers and a sought-after destination for eco-tourists. Management of the estuaries takes place in partnership with the local community and all spheres of government.

The Klein EMP was generated through a management-by-objectives methodology referred to as the 'Logical Framework Approach' (LFA). The **LFA matrix** below lists the outcomes and outputs along with indicators for monitoring whether the objectives are being achieved, and any assumptions which are critical or important to success.

The **long-term goal** or **impact** is the overall objective to which the EMP contributes, and connects this EMP to the goal of the CAPE Estuaries Programme

The **project purpose** applies to this First Generation EMP for the Bot / Kleinmond estuaries. The focus of a great deal of the effort during this five-year period must be on laying foundations and ensuring that the objectives are embraced and the means to achieve them is properly embedded in effective institutional structures.

Bot / Kleinmond EMP Logical Framework – Strategic Objectives

Objectives	Targets	Indicators	Means of verification	Important assumptions
Long-term goal or impact statement:				
Estuarine biodiversity and ecosystem functions (integrity) in the Cape Floristic Region are secured	By 2028 all estuaries in the CFR are being managed in accordance with plans that prioritise biological diversity and ecosystem functionality.	Estuarine health index	CAPE EP evaluation reports	Continued funding and support is available for the CAPE EP
Project purpose (short-term impact):				
A sustainable and co-ordinated programme of activities is underway to secure the long-term productivity of the Bot and Kleinmond estuarine ecosystem.	<ul style="list-style-type: none"> a) By EOP, 100% of EMP Output targets are attained. b) Implementation of the EMP concludes with adoption of an EMP for the second planning cycle. 	EMP Output indicators (see below)	EMP M&E programme	The first generation Bot-Kleinmond EMP is adopted and implemented.

The Project Purpose will be achieved through 15 co-ordinated outputs, identified during the course of the Situation Assessment and in consultation with IAPs as the 'tools' that are needed to address the causal factors of issues that are impacting on the productivity of the system.

SOCIAL, INSTITUTIONAL AND GOVERNANCE

- 1.1 Organisational arrangements
- 1.2 Funding and capacity
- 1.3 Monitoring and evaluation programme
- 1.4 Improved compliance

WATER FLOW AND QUALITY

- 2.1 Resource Directed Measures
- 2.2 Water Quality programme
- 2.3 Riparian reserve

FISH RESOURCE PRIORITY AREA

- 3.1 Estuarine Protected Area
- 3.2 Mouth Management Policy
- 3.3 Co-operative management and sustainable use of marine living resources

ESTUARY + LAND USE, CONSERVATION + DEVELOPMENT

- 4.1 Spatial framework for conservation and development
- 4.2 Coastal Planning Scheme
- 4.3 Conservation Plan
- 4.4 Public Recreation Areas development
- 4.5 Eco-tourism development

Bot / Kleinmond EMP Logical Framework – Outputs

Outputs ³	Targets ⁴	Objectively verifiable indicators ⁵	Means of verification ⁶	Important assumptions ⁷
<p>1.1 Organisational arrangements</p>	<p>By 2009 Q3 the First Generation EMP has been adopted. By EOP, an effective and sustainable organisational structure for co-ordinating management activity focused on the Bot and Kleinmond estuaries has been established.</p>	<p>Performance of Overstrand EM Co-ordinator Number and representativeness of IAPs attending meetings of the Estuarine Forum Performance of the TWG</p>	<p>Overstrand EM Co-ordinator performance evaluations. Attendance register of EF meetings. TWG Performance evaluation.</p>	<p>Participating institutions commit the resources needed to review and comment on the Draft EMP and sign the MOU for adoption. Funds and resources are available for establishment of proposed Overstrand EM Office.</p>
<p>1.2 Funding and capacity</p>	<p>By 2010 Q2, all participating institutions have made provision in their MTEFs for the funds and developed capacity required for implementation of the First Generation EMP. By 2014 Q3, funds are committed for implementation of the Second Generation EMP.</p>	<p>Funds committed for EMP activities. Attendance at training courses. Trainees' application of enhanced estuarine management capacity. Enforcement efficiency - reported contraventions and prosecutions.</p>	<p>Participating institutions MTEFs. Training course registers. Staff performance evaluations. SAPS and Court records.</p>	<p>Participating institutions prioritise EMP activities in their planning and budgeting process. Funds and human resources are available.</p>
<p>1.3 Monitoring and evaluation programme</p>	<p>By 2010 Q3, estuarine health and implementation of the EMP is being monitored in accordance with a detailed Monitoring and Evaluation framework.</p>	<p>EMP M&E reporting system. EMP evaluations.</p>	<p>EMP M&E reports.</p>	<p>The proposed co-ordinating office – the Overstrand EM Office – is established and operating effectively.</p>

3 The specific results that must be achieved to achieve the purpose.

4 Specific targets need to be set for each indicator. They should specify 'how much', 'how many' or 'how well' & be linked to a date.

5 Indicators are what will be used to measure & assess change & effective achievement – signs of success.

6 Where will the information required by the indicators be found.

7 External conditions that are assumed will exist, are outside the project's control but will affect what is achieved. Risks that will need to be influenced or managed.

PART A - OBJECTIVES

Outputs ³	Targets ⁴	Objectively verifiable indicators ⁵	Means of verification ⁶	Important assumptions ⁷
1.4 Improved compliance	By EOP, reported incidents of non-compliance with regulations and bylaws relating to pollution, water use, marine living resources, land use, and recreation activities on and alongside the estuarine water bodies, have decreased by 50%.	Reported contraventions. Prosecutions.	Hotline incidents report. SAPS and Court records.	Willingness of civil society leaders and targeted institutions to participate in the programme.
2.1 Resource Directed Measures	By EOP, water quality and use in the Bot and Kleinmond Rivers is managed in accordance with Resource Directed Measures (RDM), as described in the National Water Act (1998).	RQO indicators. Number of Water User Associations. Water licensing. Water consumption. Freshwater inflow from rivers into the Bot/Kleinmond system.	EMP scientific monitoring programme. Breede CMA records.	An alternative source of funding can be found. (The Bot/Kleinmond estuarine system is not on the DWAF RDM Directorate's Priority list and no funding is planned for an RDM study on the system).
2.2 Water Quality programme	By EOP, there is a measurable improvement in water quality in the Bot and Kleinmond estuaries.	Water quality indicators. Expenditure on sewer network / waste water treatment infrastructure upgrades. Pollution-related prosecutions.	EMP scientific monitoring programme. OSM expenditure records. SAPS and Court records.	Water Quality 'champions' are able to leverage support for implementation.
2.3 Riparian reserve	By EOP, a riparian reserve has been established on all estuarine frontages at the Bot and Kleinmond, and plans are underway to extend this into the upper catchments.	Extent of riparian habitats which provide ecosystem services in the estuarine catchment. Extent of alien vegetation infestation in the Bot and Kleinmond catchments.	Baseline surveys, subsequent monitoring using Spot-Images and	The OSM and riparian land owners support the policy for the riparian reserve.
3.1 Estuarine Protected Area	By EOP, estuary users do not remove marine living resources nor disturb sediments in demarcated sanctuary zones which support the nursery function of the Bot estuary. The assembly of mechanisms to secure their formal protection is underway.	Extent of de facto estuarine sanctuary areas. Reported contraventions. Extent of formally established estuarine sanctuary areas.	GIS analysis. SAPS records.	Stakeholder support is forthcoming for the establishment of marine sanctuary areas in the Bot estuary.

PART A - OBJECTIVES

Outputs ³	Targets ⁴	Objectively verifiable indicators ⁵	Means of verification ⁶	Important assumptions ⁷
3.2 Mouth Management Policy	By 2010 Q1, a policy has been adopted for mouth management which prioritises the nursery function of the Bot estuary.	Number of natural and artificially induced mouth openings (Bot and the Kleinmond). Marine living resource populations.	EMP scientific monitoring programme.	The planned 2009 Mouth Management Indaba takes place. Stakeholders support the prioritisation of the nursery function.
3.3 Co-operative management and sustainable use of marine living resources	At EOP, five local fishers are actively engaged in community-based resource management of the Bot estuary's marine living resources. By 2012 Q2, the unlicensed subsistence fishery is permanently closed.	Number of local fishers formally engaged in co-operative management. Reported incidents of unlicensed subsistence fishing.	Co-operative management vehicle reports.	Stakeholders agree to co-operate.
4.1 Spatial framework for conservation and development	By 2009 Q3, IAPs have agreed on a Spatial Conservation and Development Framework (SCDF) for the Bot-Kleinmond estuarine catchment area which prioritises biodiversity conservation in 50% of the estuarine margin. By 2012 Q2, the SCDF is integrated into the OSM's SDF.	% of land allocated to conservation and development categories in the estuarine catchment in the EMP SCDF and the OSM SDF.	GIS analysis	Stakeholders agree to prioritise biodiversity conservation in the estuarine catchment.
4.2 Coastal Planning Scheme	By EOP, a Coastal Planning Scheme relating to the Bot-Kleinmond estuaries has been drafted for integration into the OSM's Planning Scheme, as provided for in the Integrated Coastal Management Bill.	Extent of Coastal Public Property (below HWM) and the Coastal Protection Zone.	GIS analysis	Promulgation of the Integrated Coastal Management Act. An open mouth condition is present for the purpose of surveying the High Water Mark.

PART A - OBJECTIVES

Outputs ³	Targets ⁴	Objectively verifiable indicators ⁵	Means of verification ⁶	Important assumptions ⁷
4.3 Conservation Plan	By 2011 Q4, a plan for assembling the terrestrial conservation-targeted components of the SCDF has been adopted and is being actioned.	Extent of untransformed land and historical vegetation types in the estuarine catchment. Extent and % of state-, municipality- and privately owned land in the estuarine catchment within identified corridors which is secured for conservation purposes through zoning, designation or Stewardship agreement.	GIS analysis	Stakeholders agree to prioritise biodiversity conservation in the estuarine catchment.
4.4 Public Recreation Areas development	By 2011 Q3, a plan for developing the Public Recreation Areas identified in the SCDF has been adopted and is being actioned.	Number of sites and extent of land allocated for Public Recreation in the estuarine catchment. Investment in development of Public Recreation facilities in the Bot-Kleinmond Coastal Protection Zone. Number of permanent and temporary jobs created, new enterprises established.	GIS analysis. Recreation Areas development project management records.	'Champions' for the development of recreation facilities leverage support for implementation.
4.5 Eco-tourism development	By 2011 Q3 the Overstrand Municipality has awarded five concessions for development of ecotourism ventures. By 2013 five new estuarine-based locally owned ecotourism enterprises are established and operating.	Number of tourism concessions awarded. Number of tourism enterprises owned by residents of the estuarine catchment. Number of permanent and temporary jobs in estuarine-based ecotourism enterprises.	Eco-tourism Working Group reports	'Champions' for the development of nature-based and cultural tourism leverage support for implementation.

PART B: MANAGEMENT ACTION PLANS (MAPs)

Fifteen action plans are presented in this section, corresponding to the 15 outputs introduced in Part A. They provide descriptions of the activities that must be undertaken in order to achieve the output. The action plans also provide information on who is responsible for the action, and the inputs – funds and human resources – that will be needed.

Derived summaries of information from the MAPs, on the responsibilities proposed for each participating government institution, activity time frames and indicative project funding requirements, are provided in Part C.

The resource aspects of the Management Action Plans are indicative allocations, still to be interrogated by participating institutions. Job grading codes used by CapeNature Conservation have been added after the description of human resources to convey an indication of the skill level associated with the activity. Five grades have been applied loosely to describe skills and capacities as shown here.

Participating institutions with a significant role in implementing the EMP will need to designate a senior management official who is authorised to make commitments on their behalf as a member of the Technical Working Group. The capacity level being targeted is C-12 as a minimum.

Explanation of job grading codes used in the MAPs

C4	Peace officer (e.g. Fishery Control Officer, Honorary Conservation Officer, CapeNature or Municipal Nature Conservation Officer), gatherer of monitoring information
C8	GIS technician, EF Secretariat Project Officer, Stewardship Extension Officer, Agricultural Extension Officer, WfW Extension Officer, Building Inspector
C10	Middle managers of participating institutions, Senior Project Manager (middle management), Senior Planner, Fishery Adviser
C12	Local EM Co-ordinator, Project Co-ordinator (senior management), Senior Legal Adviser, Municipal Unit Manager, Senior Manager
C14	Programme Manager, Business Unit Manager, Department Director.

MAP 1.1 ORGANISATIONAL ARRANGEMENTS

© TARGET:

By 2009 Q3 the First Generation EMP has been adopted.

By EOP, an effective and sustainable organisational structure for co-ordinating management activity focused on the Bot and Kleinmond estuaries has been established.

Activities	Responsible entity	Partner(s)	Significant Inputs	Time frame
1.1.1 Establish Estuaries Management office in OSM	CAPE EP + OSM	Participating institutions Estuarine Forum OSM	CAPE EP Manager (C14) OSM Infrastructure & Planning Manager (C14) PR-1.1.1 Funds: R150,000 PR-1.1.1 Service Provider: <i>Facilitate adoption of the EMP</i>	Start 2009 Q1. 6 mths
1.1.2 Facilitate a review and revision of Draft EMP proposals	CAPE EP			
1.1.3 Facilitate adoption of the EMP (MOU)				
1.1.4 Establishment and meetings of the Estuarine Forum	IAPs	Overstrand EM Office	Overstrand EM Co-ordinator (C12) CAPE EP Manager (C14) PR-1.1.2 Funds: R250,000 PR-1.1.2 Service provider: Coastal area planner, Process facilitator, Resource economist, Estuarine ecologist	2x per annum 4x per annum 9 mths
1.1.5 Establishment and meetings of the TWG	TWG			
1.1.6 Procure expert services and manage PR-1.1.2 <i>Drafting of the Second Generation EMP</i>	CAPE EP			

MAP 1.2 FUNDING AND CAPACITY

© TARGET:

By 2010 Q2, all participating institutions have made provision in their MTEFs for the funds and developed capacity required for implementation of the First Generation EMP.

By 2014 Q3, funds are committed for implementation of the Second Generation EMP.

Activities	Responsible entity	Partner(s)	Significant Inputs	Time frame
1.2.1 Secure confirmation of funding for implementation of all agreed EMP projects	CAPE EP	Participating institutions	CAPE EP Manager (C14)	Start 2009 Q3. 9 mths
1.2.2 Develop capacity for estuarine management through attendance of officials and citizens at training courses	Participating institutions + NGOs	Nelson Mandela Metropolitan University	EF TWG members (C12+) PR-1.2.1 Funds: R50,000	12 mths, ongoing
1.2.3 Develop capacity of enforcement officials and peace officers through attendance at training courses	Participating institutions + NGOs	DEAT	EF TWG members (C12+) PR-1.2.2 Funds: R50,000	12 mths, ongoing
1.2.4 Obtain confirmation of funding for implementation of 2 nd Generation EMP	CAPE EP	Participating institutions	CAPE EP Manager (C14) Overstrand EM Co-ordinator (C12)	6 mths 2014

PART B – MANAGEMENT ACTION PLANS

MAP 1.3 MONITORING AND EVALUATION PROGRAMME

© TARGET:

By 2010 Q3, estuarine health and implementation of the EMP is being monitored in accordance with a detailed Monitoring and Evaluation framework.

Activities	Responsible entity	Partner(s)	Significant Inputs	Time frame
1.3.1 Design M&E framework	CAPE EP	CAPE CCU Participating institutions	Overstrand EM Co-ordinator (C12) CAPE EP Manager (C14) PR-1.3.1 R550,000. PR-1.3.1 service providers - Programme evaluation expertise: social scientist, financial auditor.	Start 2009 Q3. 6 mths
1.3.2 Facilitate agreement on targets and methods for monitoring, collection and storage of information, evaluation and reporting				
1.3.3 Establish a monitoring system which co-ordinates existing monitoring initiatives and creates opportunities for integration of community-based resource management and jobs for underemployed members of local communities.				
1.3.4 Assist in recruiting and training a team of monitors for Activity 2.1.2 (Ecological monitoring for RQOs).	CAPE EP			6 mths
1.3.5 Manage the monitoring team.				ongoing
1.3.6 Compile and distribute quarterly reports in advance of TWG meetings				ongoing
1.3.7 Conduct interim evaluations on an annual basis				annual
1.3.8 Procure expert services and facilitate PR-1.3.1 <i>External evaluation of implementation of the First Generation EMP</i> . Ensure that learning is carried forward into the next cycle of planning.				6 mths

¹ For the purpose of monitoring estuarine health, water quality samples need to be processed at an accredited marine laboratory in order to correct analysis of nutrients.

PART B – MANAGEMENT ACTION PLANS

MAP 1.4 IMPROVED COMPLIANCE

© TARGET:

By EOP, reported incidents of non-compliance with regulations and bylaws relating to pollution, water use, marine living resources, land use, and recreation activities on and alongside the estuarine water bodies, have decreased by 50%.

Activities	Responsible entity	Partner(s)	Significant Inputs	Time frame
1.4.1 Facilitate focus group meetings to address problems associated with non-compliant behaviour.	CAPE EP	OSM, DEAT-MCM, CapeNature, Breede CMA	Overstrand EM Co-ordinator (C12)	Start 2009 Q3. 12 mths, ongoing
1.4.2 Establish and maintain a hotline and an incident record for public reporting of non-compliant behaviour. Liaise with enforcement officers and self-regulation champions to establish a rapid response network for all types of targeted contraventions.				6 mths, ongoing
1.4.4 Design and implement a programme aimed at raising public awareness and building a shared understanding of the issues that threaten estuarine health and productivity (include PR-1.4.1).		CAPE EP Environmental NGOs and interest groups		6 mths, ongoing
1.4.5 Procure expert services and manage a project PR-1.4.1 <i>Information pamphlet to promote an understanding of the impacts of human activities on estuarine ecosystem functioning</i>			Overstrand EM Co-ordinator (C12) PR-1.4.1 Funds: R20,000 PR-1.4.1 Service provider: Researcher / writer, layout artist.	3 mths

MAP 2.1 RESOURCE DIRECTED MEASURES (RDM)

© TARGET:

By EOP, water quality and use in the Bot and Kleinmond Rivers is managed in accordance with Resource Directed Measures (RDM), as described in the National Water Act (1998).

Activities	Responsible entity	Partner(s)	Significant Inputs	Time frame
2.1.1 Project preparation: Secure funds for PR-2.1.1 <i>Intermediate level Bot/Kleinmond RDM Study</i>	CAPE EP	DWAF RDM Directorate	CAPE EP Manager (C14)	Start 2010 Q1 3 mths
2.1.2 Set the Reserve for the Bot and Kleinmond estuaries, including: <ul style="list-style-type: none"> Determination of estuarine boundaries Determination of Ecological Water Requirements (EWRs) Classify estuary (e.g. A/B) Determine Resources Quality Objectives (RQOs) (both ecological and socio economic), taking the requirements of the Kleinmond Blue Flag Beach into consideration Develop ecological monitoring programme Facilitate DWAF RDM Directorate signing off on reserve 	Breede CMA	DWAF RDM Directorate Service provider Overberg Water OSM TWKM D.Agric CAPE EP DEAT-MCM, other water users in the area	RDM Project Co-ordinator (C12+) PR-2.1.1 Funds: R2,000,000 PR-2.1.1 Service provider: Estuarine specialists: hydrodynamics, Sediment dynamics, water quality, microalgae, macrophytes, invertebrates, fish, birds; Hydrologist; Groundwater specialist; Resource economist; Social specialist	24 mths
2.1.3 Establish Water User Associations where not already in existence	Breede CMA		Facilitator (C8) Breede CMA Proj Co-ordinator (C12)	12 mths
2.1.4 Implement Reserve including: <ul style="list-style-type: none"> Issuing of water use licenses based on Reserve; Assemble a team for PR-2.1.2 <i>Ecological monitoring for RQOs</i>, build capacity for reliable monitoring, liaise with Overstrand EM Office regarding reporting systems; Monitoring and enforcement of license conditions; Evaluation of Reserve in 5 years time 	Breede CMA	DWAF Water User Associations Monitoring institutions and agents Overstrand EM Office	Breede CMA Proj Co-ordinator (C12) Breede CMA Enforcement Officer (C4) PR-2.1.2 Funds: R100,000 p.a. PR-2.1.2 HR: Ecological monitoring team, Team co-ordinator (C8)	Ongoing after 2.1.1
2.1.5 Develop water use awareness through PR-2.1.4 <i>Preparation of material to promote water demand management.</i>	OSM	Service provider	OSM Water Services Senior PM (C10) PR-2.1.3 Funds: R20,000. PR-2.1.3 Service provider: Researcher / writer, layout artist.	6 mths

MAP 2.2 WATER QUALITY PROGRAMME

© TARGET:

By EOP, there is a measurable improvement in water quality in the Bot and Kleinmond estuaries.

Activities	Responsible entity	Partner(s)	Significant Inputs	Time frame
2.2.1 Establish a Water Quality Working Group (WQWG)	OSM	CapeNature, ODM (Env Mgmt), Breede CMA, D.Agric, Arabella, Benguela Cove, Fisherhaven and Meerense Ratepayers.	OSM Water Services Senior PM (C10)	Start 2009 Q3. 3 mths
2.2.2 Design and establish a rapid response deployment strategy triggered by water quality indicators.	WQWG	OSM		24 mths
2.2.3 Revise the tariff system for emptying conservancy tanks to promote regular and timeous emptying.				
2.2.4 Review quarterly water monitoring reports. Attend quarterly meetings of the Working Group. Identify 'hotspots' and responses / remedial / enforcement actions required. Implement these through the appropriate institutional channels. Report back.		OSM Breede CMA	OSM Water Services Senior PM (C10) Breede CMA Proj Co-ordinator (C12)	ongoing
2.2.5 Identify medium-term projects for upgrading waste water treatment works, upgrading and expanding sewer reticulation infrastructure, including the installation of standby-generators at all pump stations in the Bot-Kleinmond estuarine catchment. Secure the inclusion of the projects in the IDP and MTEF.	OSM	WQWG	OSM Water Services Senior PM (C10)	ongoing
2.2.6 Ongoing liaison to promote best practice in the catchment in agriculture and agricultural industries	Overstrand EM Office	D.Agric – LandCare Programme Breede CMA	Overstrand EM Co-ordinator (C12) Agricultural Extension Officer (C8)	ongoing

Note regarding Kleinmond estuary water quality: One of the requirements of a Blue flag beach is that no algal or other vegetation may accumulate and be left to decay on the beach except in areas designated for a specific use, and as long as this does not constitute a nuisance. This requirement might be in conflict with the natural functioning of the Bot / Kleinmond system as algal growth tends to proliferate in most estuaries during closed mouth conditions even without nutrient enrichment. In addition, Blue Flag Status requires that storm water outlets must be clean at all times, and during stormwater flows, the outlets and surrounding areas must be cleaned daily. The stormwater outlet near the Kleinmond mouth might pose no serious risk for the ecological health but may well be a problem for human health. This aspect is not likely to be addressed by the RDM RQOs and will need to be addressed by the OSM.

PART B – MANAGEMENT ACTION PLANS

MAP 2.3 RIPARIAN RESERVE

© TARGET:

By EOP, a riparian reserve has been established on all estuarine frontages at the Bot and Kleinmond, and plans are underway to extend this into the upper catchments.

Activities	Responsible entity	Partner(s)	Significant Inputs	Time frame
2.3.1 Project preparation: Develop TOR and procure expert services to develop PR-2.3.1 <i>Delineation of riparian habitats in the Bot-Kleinmond estuarine catchment</i> and PR-2.3.2 <i>Development of a management policy and guidelines for riparian habitats in Overstrand Municipality</i> .	CAPE EP	CapeNature DWAf OSM	Overstrand EM Co-ordinator (C12) CAPE EP Project Co-ordinator (C12)	Start 2010 Q2. 3 mths
2.3.2 Delineate the spatial extent of riparian areas in the estuarine catchment – including main stem and tributaries – through a desktop study verified in the field. Deliverable: GIS dataset.			Overstrand EM Co-ordinator (C12) PR-2.3.1 Funds: R50,000 PR-2.3.1 Service provider: Plant ecologist, botanist, hydrologist, soils analyst, GIS technician.	Winter period 2010. 3 mths
2.3.3 Develop a policy and management guidelines for riparian areas in the Overstrand Municipality.			Overstrand EM Co-ordinator (C12) PR-2.3.2 Funds: R50,000 PR-2.3.2 Service provider: Researcher/writer, process facilitator	3 mths 6 mths
2.3.4 Facilitate adoption and application of the policy by the OSM Municipal Council and riparian land owners.				
2.3.5 Liaise with the Working for Water programme regarding the control of invasive alien vegetation in catchments of the Bot and Kleinmond: <ul style="list-style-type: none"> • Establish the extent of the invasive alien infestation for the entire catchment; • Source additional funding for clearing; • Prioritise ecologically sensitive areas (e.g. Lamloch swamps) and heavily infested areas (increase flow); • Develop coordinated clearing programme indicating responsible parties and long term commitment; • Ensure follow-up clearing. 		DWAf Working for Water Landowners – state and private land CapeNature Stewardship programme	Overstrand EM Co-ordinator (C12) WfW Project Co-ordinator (C12+) WfW Extension Officer (C8) WfW funding requirement estimated at R5 million p.a.	Ongoing

PART B – MANAGEMENT ACTION PLANS

3.1 ESTUARINE PROTECTED AREA

© TARGET:

By EOP, estuary users do not remove marine living resources nor disturb sediments in demarcated sanctuary zones which support the nursery function of the Bot estuary. The assembly of mechanisms to secure their formal protection is underway.

Activities	Responsible entity	Partner(s)	Significant Inputs	Time frame
3.1.1 Project preparation: Develop TOR and procure expert services to develop PR-3.1.1 <i>Establishment of marine sanctuary areas in the Bot / Kleinmond estuarine system</i>	CAPE EP	DEAT-MCM Overstrand EM Office WWF Marine Programme	CAPE EP Manager (C14) Kogelberg MPA consultant	Start 2010 Q2. 3 mths
3.1.2 Facilitate a public participation process to agree on the targets for conservation, the spatial zonation and the resource and recreational use guidelines for the water body components of the EMP SCDF.		Overstrand EM Office OSM, CapeNature Estuarine Forum Service provider	Overstrand EM Co-ordinator (C12) PR-3.1.1 Funds: R200,000 PR-3.1.1 Service provider: MPA planner, legal adviser, process facilitator	3 mths
3.1.3 Facilitate agreement among institutional stakeholders regarding the appropriate vehicle for legal establishment of the water body zoning plan.		DEAT-MCM Overstrand EM Office WWF Marine Programme OSM, CapeNature Service provider		12 mths
3.1.4 Draft an action plan for the legal establishment and communication of the agreed plan to estuarine resource users and visitors.				3 mths
3.1.5 Implementation of Phase 1 of the action plan, aimed at achieving de facto application of the zoning guidelines by EOP, including the installation of beacons.				12 mths
3.1.6 Implementation of Phase 2 – assemble inputs for legal establishment of Estuarine Protected Area			CAPE EP Manager (C14)	ongoing

3.2 MOUTH MANAGEMENT POLICY

© TARGET:

By 2010 Q1, a policy has been adopted for mouth management which prioritises the nursery function of the Bot estuary.

Activities	Responsible entity	Partner(s)	Significant Inputs	Time frame
3.2.2 Facilitate establishment of a Mouth Management Working Group (MMWG).	CAPE EP	Estuarine Forum	CAPE EP Manager (C14)	First EF mtg 2009
3.2.1 In preparation for the planned 2009 Mouth Management Indaba, prepare PR-3.2.1 A scientific evaluation of the current mouth management policy including a report on the learning that can be applied for future prioritisation of the nursery function.	DEAT-MCM	CapeNature DWAf	MCM Senior fishery scientist (C10+) CapeNature Area Manager (C12) PR-3.2.1 Funds: R50,000 PR-3.2.1 Service provider: Estuarine specialists.	3 mths
3.2.3 Procure expert services and implement PR-3.2.2 Draft recommendations and facilitation of agreement of Revised Interim Mouth Management Policy and Guidelines (2009) for the Bot and Kleinmond estuaries, based on the findings of the Indaba and including a M&E plan.		MMWG Estuarine Forum	MCM Senior fishery scientist (C10+) PR-3.2.1 Funds: R75,000 PR-3.2.1 Service provider: Estuarine specialists, policy and guidelines developer, consensus facilitator, M&E planner.	6 mths
3.2.4 Procure expert services and implement PR-3.2.3 Draft recommendations and facilitation of agreement of Revised Mouth Management Policy and Guidelines that takes into account the findings of the RDM study for the Bot and Kleinmond (2.1.1).		MMWG Estuarine Forum	MCM Senior fishery scientist (C10+) PR-3.2.1 Funds: R50,000 PR-3.2.1 Service provider: Estuarine specialists, policy and guidelines developer, consensus facilitator.	3 mths following 2.1.1
3.2.5 Ongoing monitoring and evaluation to support adaptive management and implementation of the policy. Referral of discretionary decisions to the Estuarine Forum.	Overstrand EM Office	DEAT-MCM MMWG Estuarine Forum	MCM Senior fishery scientist (C10+) Overstrand EM Co-ordinator (C12) Monitoring team (refer 1.3)	ongoing

3.3 CO-OPERATIVE MANAGEMENT AND SUSTAINABLE USE OF MARINE LIVING RESOURCES

© TARGET:

At EOP, five local fishers are actively engaged in community-based resource management of the Bot estuary’s marine living resources.
By 2012 Q2, the unlicensed subsistence fishery is permanently closed.

Activities	Responsible entity	Partner(s)	Significant Inputs	Time frame
3.3.1 Project preparation: Draft TOR and procure expert services for PR-3.3.1 <i>Establishment of a co-operative resource management vehicle.</i>	CAPE EP	DEAT-MCM CapeNature EF Forum Service Provider	CAPE EP Manager (C14) Overstrand EM Co-ordinator (C12) PR-3.3.1 Funds: R100,000 PR-3.3.1 Service provider: Social scientist, resource economist	2010 Q2. 3 mths
3.3.2 Facilitate discussions between local fishers, marine living resource managers and regulators, to define the scope of management activity and the sharing of responsibilities and agree on an approach to closing the unlicensed fishery.				6 mths
3.3.3 Record the co-operative management agreement in an appropriate form.				3 mths
3.3.4 Assemble resources required for implementation.				12 mths
3.3.5 Procure expert services and manage a project PR-3.3.2 <i>Record and document traditional knowledge of estuarine ecosystem functioning and fishery management</i>		DEAT-MCM Local fishers	Overstrand EM Co-ordinator (C12) MCM Fishery Adviser PR-1.4.1 Funds: R100,000 PR-1.4.1 Service provider: Social scientist, researcher / writer.	12 mths
3.3.6 Support and participate in implementation.		DEAT-MCM EF Forum	Overstrand EM Co-ordinator (C12) MCM Fishery Adviser and Enforcement unit	ongoing

MAP 4.1 SPATIAL FRAMEWORK FOR CONSERVATION AND DEVELOPMENT

© TARGET:

By 2009 Q3, IAPs have agreed on a Spatial Conservation and Development Framework (SCDF) for the Bot-Kleinmond estuarine catchment area which prioritises biodiversity conservation in 50% of the estuarine margin.

By 2012 Q2, the SCDF is integrated into the OSM's SDF.

Activities	Responsible entity	Partner(s)	Significant Inputs	Time frame
4.1.1 Project preparation: Develop TOR and procure expert services to develop PR-4.1.1 <i>Facilitate agreement on the Spatial Conservation and Development Framework for the Bot/Kleinmond estuarine catchment.</i>	CAPE EP	OSM DEADP Estuarine Forum Service provider	CAPE EP Manager (C14) Overstrand EM Co-ordinator (C12) PR-4.1.1 Funds: R50,000 PR-4.1.2 Service Provider: Coastal area planner, process facilitator, GIS technician	Start 2009 Q1. 3 mths
4.1.2 Facilitate a public participation process to agree on the targets for conservation and development and the spatial framework and land use management guidelines for the terrestrial areas in the EMP SCDF				3 mths
4.1.3 Develop the Rural Development Framework for the Bot-Kleinmond estuarine catchment: refine the EMP SCDF using data generated through Activities 4.2.2 – 4.2.6 and 4.3.2 – 4.3.4	OSM Planning	CAPE EP DEADP	OSM Senior Planner (C10) OSM GIS Technician (C8)	Start 2010 Q4. 12 mths
4.1.4 Public consultation and integration of the framework into the OSM SDF and IDP.				6 mths

MAP 4.2 COASTAL PLANNING SCHEME

© TARGET:

By EOP, a Coastal Planning Scheme relating to the Bot-Kleinmond estuaries has been drafted for integration into the OSM's Planning Scheme, as provided for in the Integrated Coastal Management Bill.

Activities	Responsible entity	Partner(s)	Significant Inputs	Time frame
4.2.1 Project preparation: Procure and contract services for the development of PR-4.2.1 <i>Test case Coastal Planning Scheme for the Bot/Kleinmond estuarine system</i>	DEAT-MCM	CAPE EP OSM	DEAT-MCM Senior PM (C12) Senior Legal adviser (C12) CAPE EP Manager (C14)	Start 2009 Q4. 3 mths
4.2.2 Develop and activate a project participation plan and facilitate agreement regarding CPS objectives in consultation with stakeholders and IAPs.		CAPE EP OSM Estuarine Forum	DEAT-MCM Senior PM (C12) Overstrand EM Co-ordinator (C12) OSM Senior Planner (C10)	6 mths
4.2.3 Survey and map, in GIS compatible format, the High Water Mark of the estuarine system, as defined in the ICM Bill (open mouth condition).		OSM CapeNature	PR-4.2.1 Funds: R1,250,000 PR-4.2.1 Service Provider: LUMS expert, Coastal area planner, Surveyor, Legal support, Drafter of legal instruments, GIS technician	Winter period 2010. 6 mths
4.2.4 Verify cadastral, scientific (extent of estuary) and survey data informing the delimitation of the Coastal Protection Zone. Verify existing land use in the estuarine management area against zoning. GIS mapping of cadastral and land use zoning in the estuarine management area / RDA. (Output required for MAP 4.1 and 4.3). Delineate limits for ORV use.		OSM Deeds office CapeNature DEADP		6 mths
4.2.5 Verify legal aspects and implications w.r.t. riparian rights, compliance with ICM Bill and other framing legislation, required amendments to regulations and by-laws. Draft the amendments to regulations and by-laws.		OSM DEADP		6 mths
4.2.6 Draft the Coastal Planning Scheme in a format compatible with the OSM's Planning Scheme.				12 mths
4.2.7 Obtain any necessary approvals from regulators.				3 mths
4.2.8 Finalise all documentation and datasets and hand over to Overstrand Municipality.		OSM	DEAT-MCM Senior PM (C12) OSM Senior Planner (C10)	
4.2.9 Identify any prerequisites for enforcement, including any training or mentoring. Prepare an implementation plan for same.				
4.2.10 Oversight of the integration of the Coastal Planning Scheme into Overstrand Municipality's Land Use Management System			DEAT-MCM Senior PM (C12) OSM Senior Planner (C10) OSM GIS Technician (C8)	3 mths

MAP 4.3 TERRESTRIAL CONSERVATION PLAN

© TARGET:

By 2011 Q4, a plan for assembling the terrestrial conservation-targeted components of the SCDF has been adopted and is being actioned.

Activities	Responsible entity	Partner(s)	Significant Inputs	Time frame
4.3.1 Project preparation: Develop TOR and procure expert services to develop PR-4.3.1 <i>Terrestrial Conservation Plan for the Bot / Kleinmond estuarine catchment</i>	CAPE EP	CapeNature	CAPE EP Manager (C14)	Start 2010 Q2. 6 mths
4.3.2 Fine-scale mapping of sensitive areas (habitats, vegetation, dynamic coastal processes, drainage corridors, aquifer recharging), field survey verification	CapeNature	Service provider	CapeNature Senior PM (C10) PR-4.3.1 Funds R350,000 PR-4.3.1 Service provider: Conservation planner, Spatial planner, GIS technician, Wetlands ecologist, Hydrologist, Plant ecologist, Coastal sedimentologist.	3 mths
4.3.3 Revisit and fine-tune spatial representation of corridors and priority areas for conservation in the SCDF		OSM Service provider		
4.3.4 Identify all state-, municipality- and privately owned land parcels that are suitable for inclusion in the conservation area network		Service provider OSM		6 mths
4.3.5 Develop a municipal conservation plan aimed at achieving zoning of all suitable municipal-owned land parcels as "Open Space I" or "Open Space III"		Service provider OSM	CapeNature Senior PM (C10) Overstrand Municipality – Senior Managers: Land Use Management (C12). Manager: Open space system (C10). PR-4.3.1 Service provider.	
4.3.6 Develop a management action plan for expanding and consolidating the formal terrestrial conservation area network – a protected area plan		Service provider OSM	CapeNature Senior PM (C10) PR-4.3.1 Service provider	
4.3.7 Assess and develop Conservation Stewardship proposals for privately-owned land		Stewardship Programme	CapeNature Senior PM (C10) Stewardship Project Co-ordinator (C12)	
4.3.8 Develop guidelines for land use and management in biodiversity priority areas and corridors		Service provider	CapeNature Senior PM (C10) PR-4.3.1 Service provider	
4.3.9 Implementation of plans and management directives	CapeNature OSM Land owners	Land owners	CapeNature Senior PM (C10) OSM OSS Manager (C10) Stewardship extension officer (C8)	ongoing

MAP 4.4 PUBLIC RECREATION AREAS DEVELOPMENT

© TARGET:

By 2011 Q3, a plan for developing the Public Recreation Areas identified in the SCDF has been adopted and is being actioned.

Activities	Responsible entity	Partner(s)	Significant Inputs	Time frame
4.4.1 Facilitate identification of a Recreation Areas Working Group (RAWG) to act as a project reference group	CAPE EP	Estuarine Forum OSM	CAPE EP Manager (C14)	EF mtg 2009 Q3
4.4.2 Develop project objectives, broad spatial parameters and terms of reference for each new development precinct	RAWG	OSM	Overstrand EM Co-ordinator (C12) OSM Senior Planner (C10) OSM Recreation Manager (C12)	3 mths
4.4.3 Secure funds and procure services for PR-4.4.1 <i>Preparation of Public Recreation Area Development Plans for xx and xx (2 precincts)</i>	Overstrand Municipality	CAPE EP	OSM Senior Planner (C10) Overstrand EM Co-ordinator (C12)	9 mths
4.4.4 Assessment and concept development (including environmental, social and heritage impact assessments)		RAWG CAPE EP Service provider DEADP Land owners	PR-4.4.1 Funds: R550,000 PR-4.4.1 Service provider: Precinct planner, Urban Designer, Environmental planner, EIA practitioner and specialists – social, heritage, botanist, geohydrologist etc, Transaction adviser, Promoter	12 mths
4.4.5 Contractual negotiations relating to land holdings, development vehicle and financing			OSM Senior Planner (C10) Overstrand EM Co-ordinator (C12) OSM LED + Corp Services Managers (C12)	6 mths in parallel with prev
4.4.6 Rezoning application (if req'd), design development and documentation of prioritised interventions (Phase 1)	Developer	Overstrand Municipality RAWG Service provider DEADP Land owners	OSM Senior Planner (C10) OSM Building Inspectorate	9 mths
4.4.7 Procurement of capital works contractors				3 mths
4.4.8 Civils and Building Contracts (Phase 1)				18 mths
4.4.9 Operation	Operator	OSM	OSM Recreation Manager (C12)	ongoing

MAP 4.5 ECO-TOURISM DEVELOPMENT

© TARGET:

By 2011 Q3 the Overstrand Municipality has awarded five concessions for development of ecotourism ventures.

By 2013 five new estuarine-based locally owned ecotourism enterprises are established and operating.

Activities	Responsible entity	Partner(s)	Significant Inputs	Time frame
4.5.1 Facilitate establishment of an Ecotourism Working Groups and two sub-groups: Nature-based Tourism WG and Cultural Tourism WG	CAPE EP	Estuarine Forum	CAPE EP Manager (C14)	EF mtg 2010 Q1
4.5.2 Identify and analyse tourism development opportunities	Nature-based Tourism WG, Cultural Tourism WG	Local and District Tourism Development and Municipal LED Offices CAPE EP	OSM LED Manager (C12) Overstrand EM Co-ordinator (C12)	6 mths
4.5.3 Project preparation: Develop TOR and procure expert services for PR-4.5.1 <i>Ecotourism package development, promotion and negotiation.</i>	OSM LED office	Nature-based Tourism WG, Cultural Tourism WG, CAPE EP	OSM LED Manager (C12) Overstrand EM Co-ordinator (C12) PR-4.5.1 Funds: R350,000	3 mths
4.5.4 Develop ecotourism packages, promote, call for proposals, negotiate with developer-operators		Estuarine Forum Service provider	PR-4.5.1 Service provider: Ecotourism package developer, promoter and negotiator	9 mths
4.5.5 Develop infrastructure / make the attraction accessible	Developer-operators	OSM LED Office	OSM LED Manager (C12)	ongoing
4.5.6 Market products	Local + District Tourism office	Developer-operators		

PART C : MANAGEMENT ACTION SUMMARIES

1. RESPONSIBILITIES OF PARTICIPATING GOVERNMENT INSTITUTIONS
2. INDICATIVE TIME FRAMES FOR FIRST GENERATION EMP
3. INDICATIVE FUNDING REQUIREMENTS FOR EMP PROJECTS

PART C - MANAGEMENT ACTION SUMMARY No.1 – RESPONSIBILITIES OF PARTICIPATING GOVERNMENT INSTITUTIONS

MAP	Description	Substantial role	TWG activities / supporting role
CAPE Estuaries Programme / Overstrand Estuaries Management Office			
1.1	Organisational arrangements	Establish Overstrand EM Office in OSM Facilitate a review and revision of Draft EMP proposals Facilitate adoption of EMP Procure expert services and manage PR-1.1.2 <i>Drafting of 2nd Generation EMP</i>	Review documents and sign off on MOU Attend EF meetings 2x per annum Attend TWG meetings 4x per annum
1.2	Funding and capacity	Motivate for and confirm funding allocation for CAPE EP funded projects Secure confirmation of funding from participating institutions for implementation of all agreed EMP projects. Develop staff capacity for estuarine management and enforcement through attendance at training courses. Motivate for and secure confirmation of funding allocations for 2 nd generation EMP projects.	
2.1	Resource Directed Measures	Secure funds for PR-2.1.1 <i>Intermediate level Bot/Kleinmond RDM Study</i>	
2.3	Riparian reserve	Develop and manage projects for establishing a riparian reserve: PR-2.3.1 <i>Delineation of riparian habitats in the Bot-Kleinmond estuarine catchment</i> and PR-2.3.2 <i>Development of a management policy and guidelines for riparian habitats in Overstrand Municipality.</i> Liaise with WWF regarding control of invasive alien vegetation.	
3.1	Estuarine Protected Area	Develop and manage a project for establishing an estuarine protected area: PR-3.1.1 <i>Establishment of marine sanctuary areas in the Bot / Kleinmond estuarine system</i>	
3.2	Mouth Management Policy	Facilitate establishment of a Mouth Management Working Group (MMWG).	
3.3	Co-operative management and sustainable use of marine living resources	Develop and manage projects for PR-3.3.1 <i>Establishment of a co-operative resource management vehicle</i> and PR-3.3.2 <i>Record and document traditional knowledge of estuarine ecosystem functioning and fishery management</i>	
4.1	Spatial framework for conservation and development	Facilitate agreement on the EMP Spatial Conservation and Development Framework	Support OSM in developing the Rural Development Framework and integrating it into the OSM SDF and IDP

PART C - MANAGEMENT ACTION SUMMARY No.1 – RESPONSIBILITIES OF PARTICIPATING GOVERNMENT INSTITUTIONS

MAP	Description	Substantial role	TWG activities / supporting role
4.2	Coastal Planning Scheme		Support MCM in developing and managing the preparation of a test case Coastal Planning Scheme for the Bot/Kleinmond estuarine system.
4.3	Terrestrial Conservation Plan	Prepare TOR and procure services for PR-4.3.1 <i>Terrestrial Conservation Plan for the Bot / Kleinmond estuarine catchment</i>	Support CNC in managing the project to prepare a terrestrial conservation plan for the estuarine catchment
4.4	Public Recreations Areas development	Facilitate identification of a Recreation Areas Working Group (RAWG) to act as a project reference group	Support the OSM in developing the project to prepare a Recreation Areas development plan and attract investors.
4.5	Eco-tourism development	Facilitate establishment of an Ecotourism Working Group and two sub-groups: Nature-based Tourism WG and Cultural Tourism WG	Support the OSM in the project to develop eco-tourism enterprises in the estuarine area.
Overstrand Estuaries Management Office			
1.1	Organisational arrangements	Convene, facilitate and record EF meetings 2x per annum Convene, facilitate and record TWG meetings 4x per annum	
1.3	Monitoring + evaluation programme	Design M&E framework for EMP implementation and establish a monitoring system, including recruitment and co-ordination of a team of monitors, compilation and distribution of quarterly reports, and annual interim evaluations. Procure expert services and facilitate PR-1.3.1 <i>External evaluation of implementation of the First Generation EMP.</i>	
1.4	Improved compliance	Facilitate focus group meetings to address problems associated with non-compliant behaviour. Establish and maintain a hotline and an incident record. Design and implement a programme aimed at raising public awareness and building a shared understanding of the issues that threaten estuarine health and productivity. Procure expert services and manage a project PR-1.4.1 <i>Information pamphlet to promote an understanding of the impacts of human activities on estuarine ecosystem functioning</i>	
2.2	Water Quality Programme	Ongoing liaison to promote best practice in the catchment in agriculture and agricultural industries	

PART C - MANAGEMENT ACTION SUMMARY No.1 – RESPONSIBILITIES OF PARTICIPATING GOVERNMENT INSTITUTIONS

MAP	Description	Substantial role	TWG activities / supporting role
3.2	Mouth Management Policy	Co-ordinate monitoring of mouth management. Facilitate participation of Estuarine Forum in discretionary decision-making.	Support MCM in preparing an evaluation of current mouth management policy, and revision of the policy following the 2009 'Indaba' and completion of the RDM study.
CapeNature Conservation			
1.1	Organisational arrangements		Review Draft EMP and sign off on MOU Attend EF meetings 2x per annum Attend TWG meetings 4x per annum
1.2	Funding and capacity	Motivate for and confirm funding allocation in MTEF for implementation of agreed EMP projects. Develop staff capacity for estuarine management and enforcement through attendance at training courses	
1.3	Monitoring + evaluation programme		Monitor indicators associated with projects being implemented by your department and submit quarterly reports to the Overstrand EM Office. Contribute to annual EMP evaluations.
1.4	Improved compliance		Participate in focus group meetings to address problems associated with non-compliant behaviour. Make enforcement resources available to support a rapid response to hotline reports of contraventions.
2.2	Water Quality Programme		Participate in Water Quality Working Group activities
2.3	Riparian reserve		Support establishment of a riparian reserve in the estuarine catchment. Liaise with CAPE EP (OSM) and WfW regarding control of invasive alien vegetation in the catchment.
3.1	Estuarine Protected Area		Support the CAPE EP in establishing marine sanctuary areas in the Bot / Kleinmond estuarine system.

PART C - MANAGEMENT ACTION SUMMARY No.1 – RESPONSIBILITIES OF PARTICIPATING GOVERNMENT INSTITUTIONS

MAP	Description	Substantial role	TWG activities / supporting role
3.2	Mouth Management Policy		Support MCM in preparing an evaluation of current mouth management policy, and revision of the policy following the 2009 'Indaba' and completion of the RDM study.
3.3	Co-operative management and sustainable use of marine living resources		Support CAPE EP in establishing a co-operative resource management vehicle.
4.2	Coastal Planning Scheme		Support MCM in surveying and mapping the High Water Mark of the estuarine system during open mouth conditions.
4.3	Terrestrial Conservation Plan	Manage the project for PR-4.3.1 <i>Terrestrial Conservation Plan for the Bot / Kleinmond estuarine catchment</i>	Assist CAPE EP in developing TOR for the project.
CapeNature Conservation (Stewardship Programme)			
2.3	Riparian reserve		Liaise with CAPE EP (OSM) and WfW regarding control of invasive alien vegetation in the catchment.
4.3	Terrestrial Conservation Plan		Assist CAPE EP in developing TOR for the project to prepare a terrestrial conservation plan for the estuarine catchment. Support CNC in managing and implementing the project.
Department of Agriculture			
1.1	Organisational arrangements		Review Draft EMP and sign off on MOU Attend EF meetings 2x per annum Attend TWG meetings 4x per annum
1.2	Funding and capacity	Develop staff capacity for estuarine management and enforcement through attendance at training courses	
2.1	Resource Directed Measures		Support Breede CMA in implementing Reserve determination and implementation of Resource Directed Measures.

PART C - MANAGEMENT ACTION SUMMARY No.1 – RESPONSIBILITIES OF PARTICIPATING GOVERNMENT INSTITUTIONS

MAP	Description	Substantial role	TWG activities / supporting role
2.2	Water Quality Programme	Through existing programmes, promote best practice in the catchment in agriculture and agricultural industries.	Participate in Water Quality Working Group activities. Liaise with CAPE EP (OSM) regarding agricultural practices in the catchment.
Department of Environmental Affairs and Development Planning			
1.1	Organisational arrangements		Review Draft EMP and sign off on MOU Attend EF meetings 2x per annum Attend TWG meetings 4x per annum
1.2	Funding and capacity	Develop staff capacity for estuarine management and enforcement through attendance at training courses	
4.1	Spatial framework for conservation and development		Review and contribute to development of the EMP SCDF Support OSM in developing the Rural Development Framework and integrating it into the OSM SDF and IDP
4.2	Coastal Planning Scheme		Support MCM in developing and managing the preparation of a test case Coastal Planning Scheme for the Bot/Kleinmond estuarine system.
4.4	Public Recreations Areas development		Support the OSM in developing the project to prepare a Recreation Areas development plan and attract investors.
Department of Water Affairs and Forestry (DWAF)			
1.1	Organisational arrangements		Review Draft EMP and sign off on MOU Attend EF meetings 2x per annum Attend TWG meetings 4x per annum
1.2	Funding and capacity	Motivate for and confirm funding allocation in MTEF for implementation of agreed EMP projects. Develop staff capacity for estuarine management and enforcement through attendance at training courses	

PART C - MANAGEMENT ACTION SUMMARY No.1 – RESPONSIBILITIES OF PARTICIPATING GOVERNMENT INSTITUTIONS

MAP	Description	Substantial role	TWG activities / supporting role
1.3	Monitoring + evaluation programme		Monitor indicators associated with projects being implemented by your department and submit quarterly reports to the Overstrand EM Office. Contribute to annual EMP evaluations.
2.3	Riparian reserve	Through existing programmes, promote the control of invasive alien vegetation in the Bot and Kleinmond catchment, prioritising ecologically sensitive and heavily infested areas.	Support establishment of a riparian reserve in the estuarine catchment. Liaise with CAPE EP (OSM) regarding control of invasive alien vegetation in the catchment.
3.2	Mouth Management Policy		Support MCM in preparing an evaluation of current mouth management policy, and revision of the policy following the 2009 'Indaba' and completion of the RDM study.
DWAF (Breede Catchment Management Agency)			
1.1	Organisational arrangements		Review documents and sign off on MOU Attend EF meetings 2x per annum Attend TWG meetings 4x per annum
1.4	Improved compliance		Participate in focus group meetings to address problems associated with non-compliant behaviour. Make enforcement resources available to support a rapid response to hotline reports of contraventions.
2.1	Resource Directed Measures	Set the Reserve for the Bot and Kleinmond estuaries Establish Water User Associations Implement Reserve	
2.2	Water Quality Programme	Through existing programmes, promote best practice in the catchment for water-wise use in agriculture and agricultural industries.	Participate in Water Quality Working Group activities. Liaise with CAPE EP (OSM) regarding agricultural practices in the catchment.

PART C - MANAGEMENT ACTION SUMMARY No.1 – RESPONSIBILITIES OF PARTICIPATING GOVERNMENT INSTITUTIONS

MAP	Description	Substantial role	TWG activities / supporting role
DEAT – Marine and Coastal Management			
1.1	Organisational arrangements		Review Draft EMP and sign off on MOU Attend EF meetings 2x per annum Attend TWG meetings 4x per annum
1.2	Funding and capacity	Motivate for and confirm funding allocation in MTEF for implementation of agreed EMP projects. Develop staff capacity for estuarine management and enforcement through attendance at training courses	
1.3	Monitoring + evaluation programme		Monitor indicators associated with projects being implemented by your department and submit quarterly reports to the Overstrand EIM Office. Contribute to annual EMP evaluations.
1.4	Improved compliance		Participate in focus group meetings to address problems associated with non-compliant behaviour. Make enforcement resources available to support a rapid response to hotline reports of contraventions.
2.1	Resource Directed Measures		Support Breede CMA in implementing Reserve determination and implementation of Resource Directed Measures.
3.1	Estuarine Protected Area		Support the CAPE EP in establishing marine sanctuary areas in the Bot / Kleinmond estuarine system.
3.2	Mouth Management Policy	Prepare an evaluation of the current mouth management policy, an interim revised policy following the 2009 'Indaba', and a revised policy following completion of the RDM study.	
3.3	Co-operative management and sustainable use of marine living resources		Support CAPE EP in establishing a co-operative resource management vehicle and document traditional knowledge of the estuarine system and fishery management.

PART C - MANAGEMENT ACTION SUMMARY No.1 – RESPONSIBILITIES OF PARTICIPATING GOVERNMENT INSTITUTIONS

MAP	Description	Substantial role	TWG activities / supporting role
4.2	Coastal Planning Scheme	Develop and manage a project for PR-4.2.1 Test case Coastal Planning Scheme for the Bot/Kleinmond estuarine system	
Overberg District Municipality (Environmental Management)			
1.1	Organisational arrangements		Review Draft EMP and sign off on MOU Attend EF meetings 2x per annum Attend TWG meetings 4x per annum
1.2	Funding and capacity	Develop staff capacity for estuarine management and enforcement through attendance at training courses	
1.3	Monitoring and Evaluation Programme		Provide monitoring information relating to landfill site in the estuarine catchment for quarterly M&E reports
2.2	Water Quality Programme		Participate in Water Quality Working Group activities
Overberg District Municipality (Tourism)			
4.5	Eco-tourism development		Participate in Ecotourism Working Group activities Support the OSM in the project to develop eco-tourism enterprises in the estuarine area.
Overstrand Municipality			
1.1	Organisational arrangements	Establish Overstrand EM Office in OSM	Review Draft EMP and sign off on MOU Attend EF meetings 2x per annum Attend TWG meetings 4x per annum
1.2	Funding and capacity	Motivate for and confirm funding allocation in MTEF for implementation of agreed EMP projects. Develop staff capacity for estuarine management and enforcement through attendance at training courses	

PART C - MANAGEMENT ACTION SUMMARY No.1 – RESPONSIBILITIES OF PARTICIPATING GOVERNMENT INSTITUTIONS

MAP	Description	Substantial role	TWG activities / supporting role
1.3	Monitoring + evaluation programme		Monitor indicators associated with projects being implemented by your department and submit quarterly reports to the Overstrand EM Office. Contribute to annual EMP evaluations.
1.4	Improved compliance		Participate in focus group meetings to address problems associated with non-compliant behaviour. Make enforcement resources available to support a rapid response to hotline reports of contraventions.
2.1	Resource Directed Measures	Develop water use awareness through PR-2.1.4 <i>Preparation of material to promote water demand management.</i>	Support Breede CMA in implementing Reserve determination and implementation of Resource Directed Measures.
2.2	Water Quality Programme	Identify medium-term projects for upgrading waste water treatment works, upgrading and expanding sewer reticulation infrastructure, including the installation of standby-generators at all pump stations in the Bot-Kleinmond estuarine catchment. Secure the inclusion of the projects in the IDP and MTEF.	
2.3	Riparian reserve		Support establishment of a riparian reserve in the estuarine catchment.
3.1	Estuarine Protected Area		Support the CAPE EP in establishing marine sanctuary areas in the Bot / Kleinmond estuarine system.
4.1	Spatial framework for conservation and development	Develop the Rural Development Framework for the Bot-Kleinmond estuarine catchment and integrate it into the OSM SDF and IDP	Participate in a public review of the EMP SCDF
4.2	Coastal Planning Scheme		Support MCM in developing and managing the preparation of a test case Coastal Planning Scheme for the Bot/Kleinmond estuarine system.
4.3	Terrestrial Conservation Plan		Support CNC in managing the project to prepare a terrestrial conservation plan for the estuarine catchment

PART C - MANAGEMENT ACTION SUMMARY No.1 – RESPONSIBILITIES OF PARTICIPATING GOVERNMENT INSTITUTIONS

MAP	Description	Substantial role	TWG activities / supporting role
4.4	Public Recreations Areas development	Develop and manage a project for PR-4.4.1 <i>Preparation of Pubic Recreation Area Development Plans for xx and xx (2 precincts)</i>	Assist the CAPE EP in identification of a Recreation Areas Working Group (RAWG) to act as a project reference group
Overstrand Municipality (Local Economic Development)			
4.5	Eco-tourism development	Develop and manage a project for PR-4.5.1 <i>Ecotourism package development, promotion and negotiation.</i>	Participate in Ecotourism Working Group activities
Overstrand Municipality (Tourism)			
4.5	Eco-tourism development		Participate in Ecotourism Working Group activities Support the OSM in the project to develop eco-tourism enterprises in the estuarine area.
Overstrand Municipality (Water Quality Working Group)			
2.2	Water Quality Programme	Establish a Water Quality Working Group (WQWG). Design and establish a rapid response deployment strategy triggered by water quality indicators. Revise the tariff system for emptying conservancy tanks to promote regular and timeous emptying. Review quarterly water monitoring reports. Attend quarterly meetings of the Working Group. Identify 'hotspots' and responses / remedial / enforcement actions required. Implement these through the appropriate institutional channels. Report back.	
WWF Marine Programme			
3.1	Estuarine Protected Area		Support the CAPE EP in establishing marine sanctuary areas in the Bot / Kleinmond estuarine system.

PART C - MANAGEMENT ACTION SUMMARY No.3 – INDICATIVE FUNDING REQUIREMENTS FOR EMP PROJECTS

MAP	Proj Ref	Project Description	Prop Imp Agent	Prop source of funds	Indicative funding requirements - financial year						Total
					2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	
1.1	PR-1.1.1	Facilitate adoption of the EMP	CAPE EP	CAPE EP	150,000						150,000
1.1	PR-1.1.2	Drafting of the Second Generation EMP	CAPE EP	CAPE EP					250,000		250,000
1.2	PR-1.2.1	Attendance of officials and citizens at estuarine management training courses	CAPE EP	MCM				50,000			50,000
1.2	PR-1.2.2	Attendance of enforcement officials and peace officers at training courses	CAPE EP	MCM	50,000						50,000
1.3	PR-1.3.1	External evaluation of the First Generation EMP	CAPE EP	CAPE EP					550,000		550,000
1.4	PR-1.4.1	Information pamphlet to promote an understanding of the impacts of human activities	CAPE EP	CAPE EP			20,000				20,000
2.1	PR-2.1.1	Intermediate level Bot/Kleinmond RDM Study	CMA	DWAF		1,000,000	1,000,000				2,000,000
2.1	PR-2.1.2	Ecological monitoring for RQOs	CMA	DWAF		100,000	100,000	100,000		100,000	400,000
2.1	PR-2.1.4	Material to promote water demand management.	OSM	OSM			20,000				20,000
2.3	PR-2.3.1	Delineation of riparian habitats in the Bot-Kleinmond estuarine catchment	CAPE EP	DWAF		50,000					50,000
2.3	PR-2.3.2	Development of a management policy and guidelines for riparian habitats in OSM	CAPE EP	DWAF		50,000					50,000
3.1	PR-3.1.1	Establishment of marine sanctuary areas in the Bot / Kleinmond estuarine system	CAPE EP	MCM		100,000	100,000				150,000
3.2	PR-3.2.1	A scientific evaluation of the current mouth management policy	MCM	MCM	50,000						50,000
3.2	PR-3.2.2	Revised Interim Mouth Management Policy and Guidelines (2009)	MCM	MCM	75,000						75,000
3.2	PR-3.2.3	Revised Mouth Management Policy and Guidelines	MCM	MCM			50,000				50,000
3.3	PR-3.3.1	Establishment of a co-operative resource management vehicle	CAPE EP	MCM		100,000					100,000
3.3	PR-3.3.2	Record + document traditional knowledge of estuarine functioning + fishery management	CAPE EP	MCM			100,000				100,000
4.1	PR-4.1.1	Facilitate agreement on EMP SCDF	CAPE EP	OSM	50,000						50,000
4.2	PR-4.2.1	Test case Coastal Planning Scheme	MCM	MCM+OSM		750,000	500,000				1,250,000
4.3	PR-4.3.1	Terrestrial Conservation Plan	CNC	CNC+OSM		100,000	250,000				350,000
4.4	PR-4.4.1	Preparation of Pubic Recreation Area Development Plans for xx and xx (2 precincts)	OSM	OSM		550,000					550,000
4.5	PR-4.5.1	Ecotourism package dev, promotion + negotiation.	OSM LED	OSM		350,000					350,000

PART D : ESTUARY ZONING AND LAND USE FRAMEWORK

An amendment to an existing zoning plan for the Bot estuary regulating boating and fishing is currently the subject of a submission to OSM Council (EMP Situation Assessment s3.13). It is a sound interim measure which should be supported by the Council. The need to further revisit the zoning has arisen from the CAPE Estuaries Programme's Regional Conservation Plan which established a conservation target of 50% of the Bot-Kleinmond estuarine area and its margins. This Part therefore includes a proposal for a further amendment to the zoning of the water body, for consideration and development during the course of the EMP implementation period.

In addition, a draft spatial framework for conservation and development (SCDF) of the land around the estuary is presented here. Residents have expressed legitimate concerns about the implications of further development in the estuarine catchment. Most of the things that impact negatively on estuarine health are generated by land-based activities, and most of those are carried into the estuary by water – surface run-off and groundwater. In developing this framework, we have aimed first and foremost to ensure that ecologically and/or hydrologically sensitive or connected areas are prioritised for conservation, and then looked at how to take account of the Province's and Municipality's developmental mandates and other priorities identified by IAPs relating to the recreational amenity and eco-tourism potential of the estuarine environment. The SCDF is provided as a starting point for the OSM to mobilise stakeholders around the decision-making process for conservation and development planning in the Rural Development Area proposed in the OSM SDF.

Estuary zoning plan

Details of the extent, intention and supported / non-supported uses of the estuary zones are provided in the guidelines following the map.

Sanctuary Zones – where recreational activities are limited to those which involve 'no take, no wake' – are intended to protect nursery habitats and provide refugia for fish, birds and invertebrates, and reduce disturbance of sediment in shallow areas and erosion of banks. The upper reach of the

Bot estuary is regarded as the primary refuge area for marine juvenile fish. Low impact activities such as paddling and sailing are supported.

High-speed boating and water-skiing is provided for in **Recreation Zone 3** – a circuit of 5km in the middle of the central recreational zone of the Bot estuary, defined by floating buoys. A speed limit of 10 km/hour is proposed in other recreation zones for safety reasons and in order to reduce disturbance of sediments in shallow areas and bank erosion caused by wake waves. Jet boats and jet skis are prohibited from the system entirely.

General recreation, including boating and recreational fishing, is supported in **Recreation Zone 1** in the central area of Bot estuary, but not bait collecting which is restricted to **Recreation Zone 2** in the mouth areas of the Bot and Kleinmond estuaries. This is in order to limit disturbance to bird habitats on the Rooisand shores.

Kitesurfing and parasailing are prohibited activities throughout the system because of their disturbance to birds. All forms of netting and fish trapping are prohibited, except for throw nets and cast nets (restricted to bait collection in Zone 3) in line with national regulations.

Management Action Plan 3.1 – Estuarine Protected Area – makes provision inter alia for consulting with IAPs, further refining and developing the zoning proposals, establishing the beacons, and communicating the new zoning delineations and regulations to estuary users.

Zone		Ha	%
Sanctuary Zones	No-take no-wake	730	48%
Recreation Zone 1	General recreation	606	40%
Recreation Zone 2	Bait collection	167	11%
Recreation Zone 3	Ski circuit	15	1%
Total		1,517	100%

Spatial Conservation and Development Framework

Details of the extent, intention and supported / non-supported uses of the Spatial Planning Categories are provided in the guidelines following the map.

This proposal serves as a basis for commencing a process described in Management Action Plan 4.1. The framework will be refined and developed in consultation with stakeholders and ultimately integrated into the OSM SDF.

The approach that was used to generate the shapes and distribution of the Spatial Planning Categories (SPCs) aims to integrate estuarine, terrestrial and freshwater biodiversity conservation priorities by connecting and protecting diverse, high-value or sensitive habitats and water courses, and directing development and recreational activities to areas that have higher resilience or are already transformed, and have low potential to impact negatively on estuarine health. GIS-based analysis was used to integrate the value-sensitivity assessment (Situation Assessment Chapter 10) and data currently being assembled through a Stewardship initiative in the buffer zone of the Kogelberg Biosphere Reserve, to the east of Kleinmond.

All formally proclaimed protected areas, including Mountain Catchment Areas, make up the category **Conservation 1**.

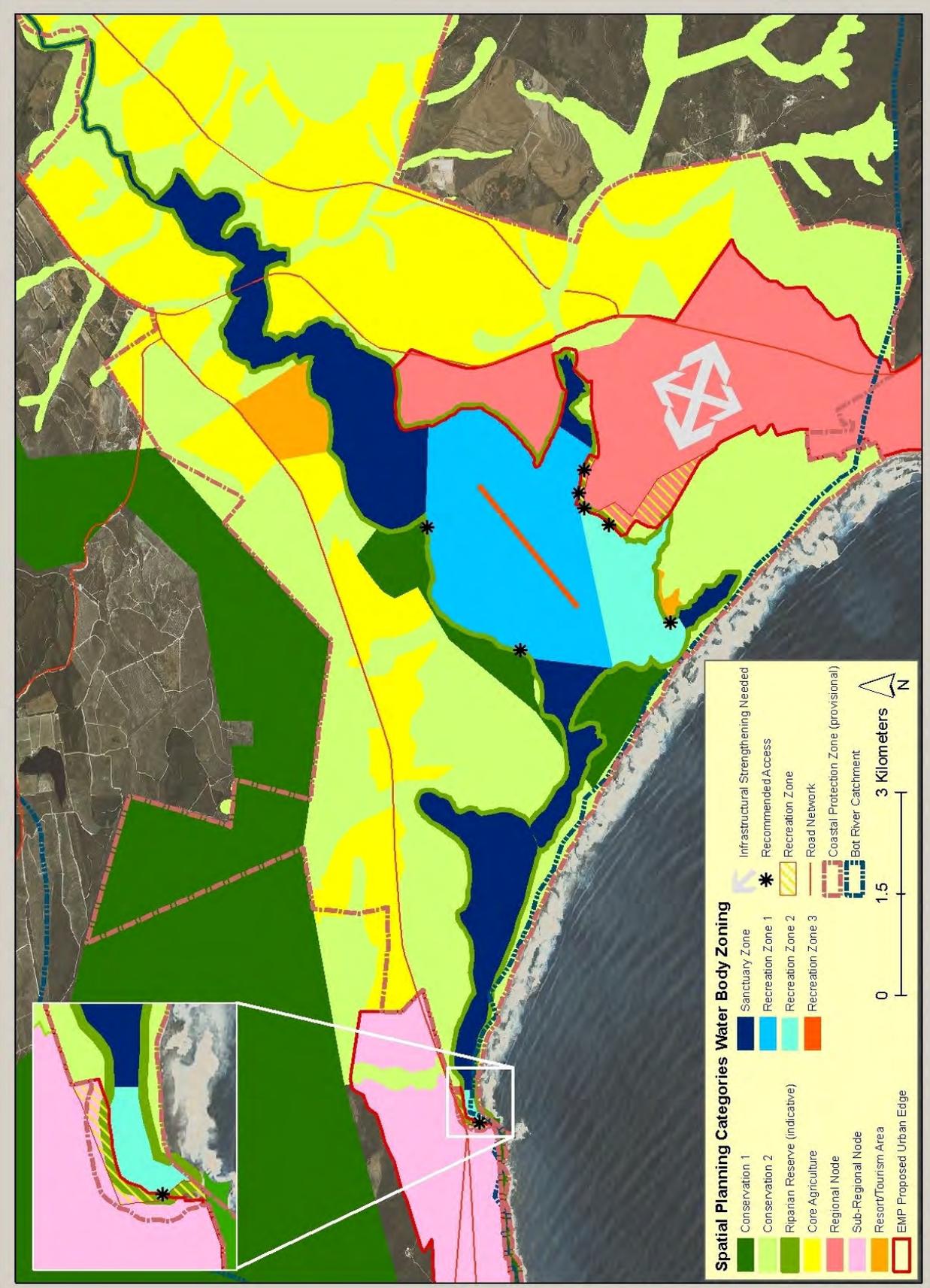
Conservation 2 areas were generated by locating areas of critically endangered vegetation, high priority wetland habitats, untransformed areas of high-value / high-sensitivity vegetation, and dynamic coastal process areas, and linking them via drainage lines to core conservation and mountain areas, and the riparian coast-to-mountain corridor. Whilst some of these areas may be suitable for formal protection as nature reserves, many of them are more suited to being managed as biodiversity priority corridors on privately owned land or the municipal open space system. Management Action Plan 1.3 – Conservation Plan – provides a process of further investigation and consultation to identify the best options for securing conservation of these areas.

According to available data, there are no areas of high potential or unique agricultural land in the estuarine catchment. Existing cultivated lands serve to reinforce the sense of rural-ness in the valley and have been categorised as **Core Agriculture**.

Existing **urban settlement areas**, including residential estates, are fixed in the landscape. The OSM SDF (2006) adopted an approach of encircling these with an Urban Edge, even where they are 'islands' outside of the core urban area. In the EMP SCDF, the Urban Edge is used as a mechanism to control urban sprawl, to contain urban development within a core area which can be serviced by municipal mainline services. Adjustments proposed to the OSM SDF include the exclusion of the dynamic and sensitive coastal environment of the Middelvlei dune field from the urban core, and the linking of Benguela Cove to the urban core area on the basis that it is sewered. The detailed planning schemes for the urban areas must make provision for open space corridors serving the same purpose as the Conservation 2 SPCs. The existing developments at the mouth of the Bot and at Arabella are outside of the urban edge and, on the basis of the Province's spatial planning policies, it's recommended here that they are managed as Resort or Tourism areas.

For the purpose of addressing the need for carefully located and designed recreational facilities, Management Action Plan 4.4 proposes the identification of two precincts to be planned and developed as **Public Recreation Areas**. Potential sites are indicated on the SCDF map, and guidelines are provided in the table, for further consideration and development through a participatory planning exercise (MAP 4.4). The intention in respect of the precinct shown in the Paddavlei area is that the existing road, instead of being an invitation to illegal activity in an isolated wasteland, should be used as a spine for a recreational activity corridor. It requires visionary planning and strengthening of infrastructure to establish better access links to neighbouring urban areas, and to support the requirement that no new development should be undertaken until existing water and waste treatment shortcomings have been addressed. The existing recreation areas at Fisherhaven and Kleinmond also hold potential for upgrading, particularly the poorly sited ablation facilities at Kleinmond and the bridge in the mouth area which impedes water circulation in the estuary.

PART D – ESTUARY ZONING AND LAND USE FRAMEWORK



PART D – GUIDELINES FOR ESTUARINE AND LAND USE MANAGEMENT I.T.O. THE DRAFT EMP SPATIAL FRAMEWORK

SPATIAL PLAN- NING CATEGORY	DESCRIPTION / LOCATION	SPECIFIC INTENT	ESTUARINE (BELOW HIGHWATER MARK) AND LAND USE MANAGEMENT GUIDELINES
ESTUARINE SANCTUARY ZONE (WATER BODY)	<p>SANCTUARY ZONES</p> <p>Upper reaches of the Bot lagoon, north of existing Beacon no. 1, extending to within 60 metres of the R43 road bridge.</p> <p>Backwater areas: at Afdaks River inlet (Areas 4E and 4F), east of the footbridge at Middelvlei (Area 4D) and west of existing Beacon no.2.</p> <p>Roosand and Lamloch wetlands.</p> <p>Kleinmond estuary east of the lightweight footbridge (2nd bridge from mouth).</p>	<p>a) <i>In situ</i> conservation of biodiversity, aiming to attain the minimum target for conservation of 33% of all estuarine habitats, as established in the Conservation Plan for Temperate South African Estuaries (Turpie & Clark, 2007);</p> <p>b) Sanctuary area for birds, fish and invertebrates, and the protection of habitats;</p> <p>b) Monitoring undisturbed ecosystems and undertaking non-destructive research;</p> <p>c) Environmental education;</p> <p>d) Low impact, non-motorised recreational uses.</p>	<p>Supported uses and activities:</p> <p>Canoes, kayaks, paddle skis, row boats, sail boats and other low impact non-motorised craft.</p> <p>Bird watching, hiking, swimming, non-destructive scientific research.</p> <p>Licensed guided catch-and-release enterprises. Release of concessions to be managed in compliance with open and transparent procurement processes.</p> <p>Rehabilitation of disturbed portions of the riparian reserve.</p> <p>Non-supported uses and activities:</p> <p>No bait collecting. No killing or removal of fish, invertebrates or plants at any time by any means except permitted scientific research.</p> <p>No motorised boats. No jet boats. No kite surfing. No para-sailing.</p> <p>No planting, no harvesting of plant material (with the exception of rehabilitation activity relating to invasive alien vegetation).</p> <p>Riparian reserve: No removal of indigenous vegetation, no planting of any material (except where rehabilitation is underway), no fertilisers or pesticides.</p> <p>No aquaculture. No sand mining.</p> <p>Infrastructure and municipal services:</p> <p>No bridges, causeways, new jetties, boardwalks. No launching. No wharfs or edge hardening.</p>
ESTUARINE RECREATION ZONE 1 (WATER BODY)	<p>GENERAL USE AREA</p> <p>Central zone between Beacons No. 1 and 2, excluding backwater areas at Afdaks inlet and Roosand NR.</p> <p>Upper reaches of the estuary, in the vicinity of the R43 road bridge and above.</p>	<p>a) Low impact recreational uses;</p> <p>b) Recreational line-fishing;</p> <p>c) Sailing;</p> <p>d) Protection of bird habitats on western shores from disturbance.</p>	<p>Supported uses and activities:</p> <p>Line fishing from the shore or from a boat or craft in compliance with MLRA permitting system and bag limits.</p> <p>Canoes, kayaks, paddle skis, rowing boats, sail craft, motorised boats – speed limit 10 km/h, subject to periodic review of guidelines, by-laws and public notices aimed at ensuring safety and security of all users.</p> <p>Bird watching, hiking, swimming, non-destructive scientific research.</p> <p>Rehabilitation of disturbed portions of the riparian reserve.</p> <p>Non-supported uses and activities:</p> <p>No capturing or removal of fish during mouth breaching events.</p> <p>No bait collecting. No cast- or throw-netting.</p> <p>No capturing of linefish species with cast nets, seine nets, gill nets, traps, gaffs or spears.</p> <p>Riparian reserve: No removal of indigenous vegetation, no planting of any material (except where</p>

PART D – GUIDELINES FOR ESTUARINE AND LAND USE MANAGEMENT I.T.O. THE DRAFT EMP SPATIAL FRAMEWORK

SPATIAL PLAN- NING CATEGORY	DESCRIPTION / LOCATION	SPECIFIC INTENT	ESTUARINE (BELOW HIGHWATER MARK) AND LAND USE MANAGEMENT GUIDELINES
ESTUARINE RECREATION ZONE 2 (WATER BODY)	<p>BAIT COLLECTING AREA</p> <p>South of new beacons – no's. 3, 1 and 6, 1 – being the lower reaches of the Bot estuary (mouth area).</p> <p>Kleinmond estuary west of the lightweight footbridge (2nd bridge from mouth).</p>	<p>a) Low impact recreational uses;</p> <p>b) Bait collection and recreational line-fishing;</p> <p>c) Sailing.</p> <p>d) Sustainable use of estuarine resources for livelihood strategies and job creation purposes.</p>	<p>rehabilitation is underway), no fertilisers or pesticides.</p> <p>No jet boats. No jet skis. No kite surfing. No para-sailing.</p> <p>No motorised boats exceeding the speed limit of 10 km/h. No skiing.</p> <p>No aquaculture. No sand mining.</p> <p>Infrastructure and municipal services:</p> <p>No new bridges or causeways.</p> <p>No launch sites, new jetties, wharfs or edge hardening on western shores of the Central zone. In other areas, launch sites, jetties, boardwalks, wharfs and edge hardening, subject to compliance with ICM Bill (Coastal Public Property), ORV Regulations (licensing of launch sites) and EIA regulations (structures below high water mark, activities within 100m of high water mark).</p> <p>Cleaning services to address water-borne waste at public recreational nodes.</p> <p>Supported uses and activities:</p> <p>Line fishing from the shore or from a boat or craft in compliance with MLRA permitting system and bag limits.</p> <p>Use of cast- or throw-nets, release of any linefish species.</p> <p>Bait collecting, subject to periodic review, in compliance with MLRA permitting system and bag limits.</p> <p>Collection of mud prawn, sand prawn, bloodworm, pencil bait and tapeworm restricted to daylight hours, using legal implements.</p> <p>Canoes, kayaks, paddle skis, rowing boats, sail craft, motorised boats – speed limit 10 km/h, subject to periodic review of guidelines, by-laws and public notices aimed at ensuring safety and security of all users.</p> <p>Bird watching, hiking, swimming, non-destructive scientific research.</p> <p>Sustainable levels of harvesting of plant material from estuarine habitats to support job creating enterprises and livelihood strategies.</p> <p>Rehabilitation of disturbed portions of the riparian reserve.</p> <p>Non-supported uses and activities:</p> <p>No capturing or removal of fish during mouth breaching events.</p> <p>No capturing of linefish species with cast nets, seine nets, gill nets, traps, gaffs or spears.</p> <p>Riparian reserve: No removal of indigenous vegetation, no planting of any material (except where rehabilitation is underway), no fertilisers or pesticides.</p> <p>No jet boats. No jet skis. No kite surfing. No para-sailing.</p> <p>No motorised boats exceeding the speed limit of 10 km/h. No skiing.</p> <p>No aquaculture. No sand mining.</p> <p>Infrastructure and municipal services:</p> <p>No new bridges or causeways. Existing footbridge at Kleinmond estuary (closest to the mouth) causing obstruction to water flow to be removed. Design of a replacement structure subject to environmental authorisation.</p>

PART D – GUIDELINES FOR ESTUARINE AND LAND USE MANAGEMENT I.T.O. THE DRAFT EMP SPATIAL FRAMEWORK

SPATIAL PLAN-ING CATEGORY	DESCRIPTION / LOCATION	SPECIFIC INTENT	ESTUARINE (BELOW HIGHWATER MARK) AND LAND USE MANAGEMENT GUIDELINES
ESTUARINE RECREATION ZONE 3 (WATER BODY)	SKI ZONE 80 metre wide ski circuit approximately 2.3km long (each leg) located on centre axis of central zone (Recreation Zone 1).	a) Accommodate water sport activity that provides amenity for residents and tourists. b) Adaptive management of recreational activities to stay within physical and social carrying capacity using spatial and temporal sub-zones and permitting system. c) Minimise impacts of wake-producing activities on shoreline habitats.	<p>No launch sites, jetties, boardwalks, wharfs or edge hardening on western shores of Bot estuary. In other areas, launch sites, jetties, wharfs and edge hardening, subject to compliance with ICM Bill (Coastal Public Property), ORV Regulations (licensing of launch sites) and EIA regulations (structures below high water mark, activities within 100m of high water mark).</p> <p>Cleaning services to address water-borne waste at public recreational nodes.</p> <p>Supported uses and activities:</p> <p>Motorised boats, subject to periodic review of guidelines, by-laws and public notices aimed at ensuring safety and security of all users. Skiing.</p> <p>Non-destructive scientific research.</p> <p>Non-supported uses and activities:</p> <p>Swimming or fishing from a boat or craft during times of high-speed boating activity.</p> <p>Use of non-motorised craft in this zone during times of high-speed boating activity.</p> <p>No capturing or removal of fish during mouth breaching events.</p> <p>No bait collecting. No cast- or throw-netting.</p> <p>No capturing of linefish species with cast nets, seine nets, gill nets, traps, gaffs or spears.</p> <p>No jet boats. No jet skis. No kite surfing. No para-sailing.</p> <p>No aquaculture. No sand mining.</p> <p>Infrastructure and municipal services:</p> <p>Installation and maintenance of floating buoys to demarcate ski circuit.</p>
CONSERVATION 1 (TERRESTRIAL) Bioregional Spatial Planning Category A.b Other Statutory Conservation Areas	Statutory conservation areas: provincial, local and registered private nature reserves. Mountain Catchment Areas.	a) <i>In situ</i> conservation of biodiversity, serving to attain the minimum target for conservation of 50% of the estuarine margin, as established in the Conservation Plan for Temperate South African Estuaries (Turpie & Clark, 2007); b) Monitoring undisturbed ecosystems and undertaking non-destructive research.	<p>Supported uses:</p> <p>Day visitor facilities, walking, horse-riding trails. No private ownership of tourist infrastructure – any developments by concession or lease. The release of concessions to be managed in compliance with open and transparent procurement processes.</p> <p>Existing and sustainable harvesting of natural resources such as medicinal plants, wild flowers, etcetera.</p> <p>Infrastructure and municipal services:</p> <p>Existing roads only. No new roads permitted without an EIA. Pedestrian pathways, hiking trails, bicycle paths, horse trails, designed to minimise impact on estuarine and other special habitats.</p> <p>No overhead lines or masts. Use of solar panels encouraged. Any superstructure must not be visible from the vantage of an adult standing at the high-water mark at any part of the estuary.</p> <p>No edge-hardening to banks of wetland areas, rivers or streams.</p> <p>Sewerage: septic tank or approved VIP system, subject to approved design and geohydrological report.</p> <p>Solid waste – Temporary storage on site in room or containers that are inaccessible to foraging animals. Transported to a municipal transfer station and / or a licensed disposal site.</p> <p>Management interventions:</p>

PART D – GUIDELINES FOR ESTUARINE AND LAND USE MANAGEMENT I.T.O. THE DRAFT EMP SPATIAL FRAMEWORK

SPATIAL PLAN- NING CATEGORY	DESCRIPTION / LOCATION	SPECIFIC INTENT	ESTUARINE (BELOW HIGHWATER MARK) AND LAND USE MANAGEMENT GUIDELINES
CONSERVATION 2 (TERRESTRIAL) Bioregional Spatial Planning Category B: Buffer areas	<p>Areas of high biodiversity value or sensitivity which are currently unprotected by formal designation. Areas of private or municipal-owned land that are relatively untransformed and serve to link Conservation I category areas with the river corridor.</p> <p>Areas above the 120m contour elevation that are not registered Mountain Catchment Areas.</p>	<p>c) Environmental education.</p> <p>d) <i>Non-consumptive</i> land-uses (e.g. ecotourism).</p> <p>e) Providing a broader spectrum of outdoor recreation opportunities as opposed to Category A, e.g. opportunities for mechanised activities, such as 4X4 access.</p> <p>f) Sustainable resource uses, such as game capturing and harvesting of plant products, e.g. buchu.</p>	<p>Fire management – compliance with Veld and Forest Fires Act.</p> <p>Invasive alien vegetation – compliance with CARA, Biodiversity Act.</p> <p>No clearing of coastal vegetation or disturbance of dunes or dune vegetation.</p> <p>Any development or infrastructure installations subject to full EIA.</p>
		<p>a) <i>In situ</i> conservation of biodiversity, serving to attain the minimum target for conservation of 50% of the estuarine margin, as established in the Conservation Plan for Temperate South African Estuaries (Turpie & Clark, 2007);</p> <p>b) Halt transformation of remaining untransformed natural environments in high-value, high-sensitivity biodiversity areas;</p> <p>c) Ecological corridors linking core</p>	<p>Supported uses:</p> <p>Continued use of existing infrastructure and farm lands, within the existing footprint of transformed areas. Change of use, or consent use, of existing infrastructure for agritourism or eco-tourism purposes. No new development or cultivation outside the existing footprint of transformed areas.</p> <p>Stewardship agreements, financial incentives to owners who implement biodiversity prioritisation management interventions.</p> <p>Designation of formal protected areas. Day visitor facilities, walking, horse-riding trails.</p> <p>Development or continuation of enterprises involving the sustainable harvesting of natural resources such as medicinal plants, wild flowers etcetera.</p> <p>Subdivision of agricultural land, if it supports the intentions of this SPC, subject to authorisation in terms of LUPA and Act 70 of 1970, and EIA if a listed activity.</p> <p>Gardens planted with local indigenous vegetation. Maintain existing indigenous vegetation, rehabilitate transformed areas. Limited extent of lawn.</p> <p>Infrastructure and municipal services:</p> <p>No <i>in situ</i> sewerage discharge or disposal of solid waste within 100m of the bank of any wetland, river or water course.</p> <p>No edge-hardening to banks of wetland areas, rivers or streams.</p> <p>Management interventions:</p> <p>Promote stewardship and protected area designation.</p>

PART D – GUIDELINES FOR ESTUARINE AND LAND USE MANAGEMENT I.T.O. THE DRAFT EMP SPATIAL FRAMEWORK

SPATIAL PLAN- NING CATEGORY	DESCRIPTION / LOCATION	SPECIFIC INTENT	ESTUARINE (BELOW HIGHWATER MARK) AND LAND USE MANAGEMENT GUIDELINES
CORE AGRICULTURE	<p>Extensive areas of transformed land to the east of the R43.</p> <p>Pockets of transformed land flanking the R44 to the west of Bot River estuary.</p>	<p>conservation areas.</p> <p>d) Provide a buffer for core areas of the biosphere reserve.</p> <p>a) Maintain the agricultural reserve of farmland required for food production purposes;</p> <p>b) Protection of prime or unique agricultural land;</p> <p>c) Maintain a rural or pastoral character for tourism purposes.</p> <p>d) Promote LandCare and Area Wide Planning</p>	<p>Fire management – compliance with Veld and Forest Fires Act.</p> <p>Invasive alien vegetation – compliance with CARA, Biodiversity Act.</p> <p>Supported uses:</p> <p>Extensive and intensive agriculture (Agriculture I) excluding intensive feed farming and other consent uses.</p> <p>Maintenance of corridors of natural vegetation between and around fields. Water-wise practices.</p> <p>Subdivision of agricultural land outside the urban edge is not supported, to be managed as provided for in Overstrand Municipality SDF Policy No.5 (Section 5: p49).</p> <p>Infrastructure and municipal services:</p> <p>No <i>in situ</i> sewerage discharge or disposal of solid waste within 100m of the bank of any river or water course.</p> <p>Management interventions:</p> <p>Compliance with, and monitoring and enforcement of, restrictions and responsibilities applicable to the riparian reserve. This will be established through implementation of MAP 3.3. As an interim measure, it shall be deemed to be 30m on either side of major rivers, 20m on smaller rivers and 10m on streams, according to DWAF’s guidelines on demarcation of Riparian Reserves.</p> <p>Integrated farm planning. Crop rotation.</p> <p>Fire management – compliance with Veld and Forest Fires Act.</p> <p>Invasive alien vegetation, erosion control – compliance with CARA, Biodiversity Act.</p>
PUBLIC ACCESS WAYS	<p>At Kleinmond, providing access to the estuary at the existing public recreation area.</p> <p>On the west side of Bot estuary, to provide access from R44 via existing roads to public recreation areas within the Rooisand NR.</p> <p>On the east side of the Bot estuary, providing access to the estuary at existing public recreation areas in Fisherhaven, via an existing road at Middelvlei State</p>	<p>a) Provide public access to the estuary at suitable locations (Requirement of the ICM Bill).</p> <p>b) Provide safe access to public recreation areas developed through MAP 4.4.</p> <p>c) Improve security by increasing visibility of estuarine recreational areas.</p>	<p>Supported uses (Rooisand NR):</p> <p>Vehicular access road following existing routes. Upgrading subject to compliance with ICM Bill (access to Coastal Public Property), and EIA regulations (construction of roads, activities within 100m of high water mark) and appropriate engineering standards.</p> <p>Signposting at the intersection with R44.</p> <p>Managed pedestrian pathways, hiking trails, bicycle paths, horse trails, designed to minimise impact on estuarine and other special habitats.</p> <p>Supported uses (other recommended access points):</p> <p>Vehicular access roads, subject to compliance with ICM Bill (access to Coastal Public Property), and EIA regulations (construction of roads, activities within 100m of high water mark) and appropriate engineering standards.</p> <p>Pedestrian pathways, hiking trails, bicycle paths, horse trails, designed to minimise impact on estuarine and other special habitats.</p> <p>Landscaping with indigenous materials, protection of water courses in their natural (un-canalised) state.</p> <p>Signposting on the R43.</p> <p>Management interventions:</p> <p>Development of infrastructure designed to minimise impact of human activity, subject to compliance with</p>

PART D – GUIDELINES FOR ESTUARINE AND LAND USE MANAGEMENT I.T.O. THE DRAFT EMP SPATIAL FRAMEWORK

SPATIAL PLAN- NING CATEGORY	DESCRIPTION / LOCATION	SPECIFIC INTENT	ESTUARINE (BELOW HIGHWATER MARK) AND LAND USE MANAGEMENT GUIDELINES
RECREATION ZONE (PRECINCT WITHIN AN URBAN SPATIAL PLANNING CATEGORY)	<p>Ground, and to the mouth area at Middelviei.</p> <p>Existing informal shoreside precincts at Fishershaven (north shore) and Kleinmond.</p> <p>A corridor extending along alignment of an existing road, from the vicinity of Hawston sewerage treatment works, to the shoreline of the Bot estuary, as far as the drainage corridor and wetland area (Conservation 2) on the S-W side of the road, including a suitable extent for development of enterprises on the N-E side of the road, and expanding at the shoreline to link with Fishershaven.</p>	<p>a) Support nodal development of public recreational facilities that enhance the social and economic value of the estuary</p> <p>b) reduce disturbance resulting from recreational use of undeveloped shoreline areas</p> <p>b) Support development of a corridor of recreational infrastructure and related enterprises, in order to link shoreside and residential areas, thereby improving surveillance and reducing incidents of non-compliance.</p>	<p>EIA regulations, and ongoing associated operation and maintenance.</p> <p>Supported uses: Launch sites, jetties, limited extent of edge hardening or wharfs, subject to compliance with ICM Bill (Coastal Public Property), ORV Regulations (licensing of launch sites) and EIA regulations (structures below high water mark, activities within 100m of high water mark). Sports clubs that provide boat mooring and storage facilities and otherwise cater to the needs of members who make use of the estuary for recreational purposes. Public facilities for day visitors, including parking, toilets and picnic sites. A management strategy for supporting short-term camping in designated areas over festive periods. Phased release of a limited number of concessions for development of restaurants and other facilities that reserve right of admission to paying customers and that serve to enhance the social value of the estuary. Infrastructure and municipal services: Access – as per guidelines for Public Access Way; Piped sewerage and water supply, and refuse collection service, is a pre-requisite to any new development in these areas. Any development or infrastructure installations subject to full EIA. Landscaping of recreational facilities providing opportunities for environmental education. Use of non-indigenous vegetation limited to lawns. Buildings associated with recreational facilities providing shelter from wind, shaded summer areas, sunny winter areas, and optimising surveillance as a security strategy. Management interventions: Participative planning strategy (MAPs 4.4 and 4.5) and ongoing associated operation and maintenance.</p>

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SPATIAL PLAN- NING CATEGORY	DESCRIPTION / LOCATION	SPECIFIC INTENT	ESTUARINE (BELOW HIGHWATER MARK) AND LAND USE MANAGEMENT GUIDELINES
REGIONAL NODE Bioregional Spatial Planning Category D.b: Main local town	Greater Hermanus (including Fisherhaven, Hawston and Benguela Cove) urban core	<ul style="list-style-type: none"> a) Support the function of this settlement node as an administrative and tourist centre b) Accommodating the seat (capital town) of a Category C Municipality (i.e. the district town). b) Providing residential and business areas, including the institutions, infrastructure and essential services required for sustainable community development. 	<p>Growth management via application of the urban edge and spatial categories and guidelines as presented herein.</p> <p>Monitor discharges from the Hawston sewerage treatment works.</p> <p>Extension of piped services – sewerage – to all residential areas on the east side of the Bot lagoon.</p>
SUB-REGIONAL NODE Bioregional Spatial Planning Category D.c: Local town	Kleinmond urban core	<ul style="list-style-type: none"> a) Support the function of this settlement node as an administrative / residential / retirement centre. b) Providing residential and business areas, including the institutions, infrastructure and essential services required for sustainable community development. c) Accommodating a municipal office to manage local municipal affairs. 	<p>Limits to growth determined by the capacity of the environment to support and sustain it, i.r.o. potable water and liquid waste disposal.</p> <p>No development or infrastructure below the 1:100 year floodline. Precautionary principle to be applied until such time as floodlines have been calculated.</p> <p>Urgent intervention required i.r.o. pollutants entering the Kleinmond estuary from Isaacs River.</p> <p>Extension of piped services – sewerage – to all residential areas in the estuarine catchment.</p>

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SPATIAL PLAN- NING CATEGORY	DESCRIPTION / LOCATION	SPECIFIC INTENT	ESTUARINE (BELOW HIGHWATER MARK) AND LAND USE MANAGEMENT GUIDELINES
RESORT / TOURISM AREA Bioregional Spatial Planning Category D.h: Resorts & Tourism-Related Areas	Existing resorts and residential nodes outside of urban core areas: Arabella Phase 1, Meerrenbos, Meer-en-see and Sandown.	Contributing towards improving the economic base of the area.	<p>Supported uses: Roadside tourist facilities in accordance with Overstrand Municipality SDF Policy No.10 (Section 5: p58). Eco-tourism developments: guest houses, resorts, camping, hotels, in accordance with Overstrand Municipality SDF Policy No.12 (Section 5: p61). Public recreation nodes that enhance the social and economic value of the estuary, and related access ways. Gardens planted with local indigenous vegetation. Maintain existing indigenous vegetation, rehabilitate transformed areas. Limited extent of lawn. Non-supported uses and activities: Golf courses, polo estates or other land uses that are water intensive and generate contaminated or nutrient rich run-off. Canalisation of water courses, streams and rivers. Construction or infrastructure within the 1:100 year floodline. Privatisation of Coastal Public Property (area below the high-water mark). Infrastructure and municipal services: Piped sewerage and water supply, and refuse collection service, is a pre-requisite to any new development in these areas unless supported by a DEADP authorised and monitored Environmental Management Plan.</p>
ROAD NETWORK	General	Control impacts of ORVs	No new roads or tracks without a full EIA. Enforcement of ORV Regulations (Government Notice No.1399, 21 December 2001). Demarcation of ORV limits – in the Coastal Planning Scheme – and <i>in situ</i> through signage etcetera.
RIPARIAN RESERVE	Impact zone adjacent to wetlands, rivers and minor tributaries and streams.	<p>a) Reduce sediment load, surface run-off of pollutants, and leachate into the river and estuary;</p> <p>b) Control of invasive alien vegetation;</p> <p>c) Flood attenuation and minimisation of flood damage;</p> <p>d) Mitigate visual impact of development.</p>	<p>No cultivation except where rehabilitation is underway. No clearing of indigenous vegetation. Invasive alien vegetation management programme. No fertilisers or pesticides. No edge-hardening to banks of wetland areas, rivers or streams except as authorised in terms of a licensed boat launch site, a permit issued in terms of the ICM Bill or environmental authorisation in terms of EIA Regulations. No development or infrastructure below the 1:50 year floodline. Delineation of the Riparian Reserve is to be established through MAP 3.3 of the EMP. Provisional measures in the interim:</p> <ul style="list-style-type: none"> • The area within a line that is 30m from the bank of a major river (high water mark when the estuary is at its fullest), 20m on smaller rivers and 10m on streams (DWAF's guidelines on demarcation of Riparian Reserves). <p>100m buffer for geohydrological processes – No septic tank, soakaway, solid or liquid waste disposal within 100m of a river, stream or water course.</p>

