

CBA Series  
#2

# Brief Land Management Guidelines



## Useful Notes:

### What is biodiversity?

**Biodiversity** refers to the wide variety of plant and animal species in their natural environment. It not only refers to species (plants, animals and micro-organisms), but also to ecosystems, landscapes, and the ecological and evolutionary processes that allow biodiversity to persist over time. It includes the diversity within species, between species, and of ecosystems.

### Why is biodiversity important in planning?

Biodiversity is constantly changing & threatened by changing land uses that try to accommodate increasing population, expanding industries and agriculture and climate change. **By providing information of where our ecosystem goods and services are located and by understanding the pressures and threats to ecosystems, policy makers, decision makers and practitioners from a range of sectors can be more informed in policy drafting and implementation of development projects that are cognisant of critical biodiversity areas.**

### What is a critical biodiversity area?

These are terrestrial (land) and aquatic (water) features (e.g. vleis, rivers and estuaries) in the landscape that are critical for conserving biodiversity and maintaining ecosystem functioning in the long term (which is particularly important in the face of climate change).

### What is a critical biodiversity areas map?

A fine-scale systematic biodiversity plan that delineates on a map Critical Biodiversity Areas and Ecological Support Areas which require safeguarding to ensure the continued existence of biodiversity, its ecological processes (e.g. animal migration, pollination) and its ecosystem services e.g. water supply. The map also delineates formal Protected Areas, Other Natural Areas and No Natural Remaining. The broad objective of the **CBA Map** is to ensure appropriate land use planning for sustainable development, to reduce cumulative impacts on biodiversity and to promote integrated management of natural resources. The CBA map is developed together with **land management and land use guidelines** that are applicable to the different **CBA categories**.

## Critical Biodiversity Areas categories

A CBA Map is a systematic biodiversity plan produced at a scale of 1:50000 that delineates on a map **Protected Areas, Critical Biodiversity Areas, Ecological Support Areas, Other Natural Areas** and **No Natural Remaining**. Protected Areas, Critical Biodiversity Areas and Ecological Support Areas are referred to as the **biodiversity priority areas** and are **sub-divided into categories using a systematic biodiversity plan**.

- **Critical Biodiversity Areas 1 & 2** are irreplaceable areas which includes Threatened species, threatened ecosystems that need to be kept in their natural or near natural state.
- **Ecological Support Areas 1 & 2 (ESAs)** are supporting zones (ecological) or areas required to prevent degradation of Critical Biodiversity Areas and formal Protected Areas, usually located adjacent to or which link CBA and/or Protected Areas. Some of these areas may already be transformed or degraded, but they still support ecological processes.

### Land management guidelines

**Land management guidelines** for a parcel of land or aquatic ecosystem refers to the ecological state or condition in which it should be maintained or managed. In broad terms, the biodiversity priority areas (PA, CBA and ESA) need to be managed in a healthy and functioning condition while the heavily impacted or modified areas can be further developed.

**The land use guidelines** are informed by the land management objective for each category on the CBA Map as well as the relative impact of a land use activity on biodiversity.

The biodiversity sector plan provides details information on each CBA category and the recommended land use guidelines for the different land use activities. The following section only provides information on the land management guidelines.

**These guidelines (see coloured boxes that follow) should be used in conjunction with available ecosystem guidelines and/or other guidelines when undergoing land development applications (e.g. EIAs, water use licenses, mining or agricultural applications etc.), where applicable:**

- NFEPA Implementation Manual for Freshwater Ecosystem Priority Areas (Driver et al., 2011).
- Wetland offsets: A Best-Practice Guideline for South Africa (Macfarlane et al., 2014).
- Buffer zone guidelines for rivers, wetlands and estuaries (Macfarlane & Bredin, 2017).
- Guidelines for Development within Kruger to Canyons Biosphere Region. Download at <http://www.kruger2canyons.org/01-17%20-%20K2C%20Development%20Guidelines.pdf>.
- Grassland Ecosystem Guidelines (SANBI, 2013).
- Grazing and Burning Guidelines (SANBI, 2014).
- Guidelines for Game Farming (developed by the Department of Local Government and Human Settlements).
- Mining and Biodiversity Guideline (SANBI, 2013).
- The Western Cape Provincial Guideline on Biodiversity Offsets can also be consulted for additional support (DE&ADP, 2007).

## **Recommended land management guidelines in Critical Biodiversity Areas & Ecological Support Areas**

### **Managing loss of natural habitat in CBAs:**

- Further loss of natural habitat should be avoided in CBA 1, whereas loss should be minimised in CBA 2 i.e. land in these two categories should be maintained as natural vegetation cover as far as possible.
- CBA 1s and CBA 2s not formally protected should be rezoned where possible to conservation or an appropriate zoning, and where possible declared in terms of the Protected Areas Act.
- CBA 1 and CBA 2 can act as possible biodiversity offset receiving areas.
- The provincial biodiversity stewardship programme may wish to prioritise privately owned erven in CBA 1s and CBA 2s to be incorporated into the protected area network through biodiversity stewardship agreements. The provincial protected area expansion strategy to use the CBA Map in prioritising these erven.
- Degraded or disturbed CBA 1s and CBA 2s should be prioritised for rehabilitation through programmes such as Working for Water and Working for Wetlands. An invasive alien vegetation eradication programme should be implemented. If threatened species are identified as being present, rehabilitation programmes should explicitly consider these species in the development of restoration programmes. Rehabilitation activities should be undertaken in such a way that does not negatively impact on the survival of threatened species

## General management guidelines in Aquatic CBAs and ESAs:

- Maintain water quality and flow regimes as close to natural as possible.
- Where Ecological Reserves or Environmental Flow Requirements have been determined these should be strictly adhered to. Where these have not been determined, determination should be prioritised for all CBA and ESA rivers and wetlands.
- All effluent (including municipal, mining and industrial waste water) as well as acid mine drainage should be treated to the required specifications before release.
- Storm water flow should be managed to avoid degradation of CBAs and ESAs.
- Where CBAs and ESAs include floodplains (e.g. areas within the 1:100 year flood line), riparian areas (e.g. as a minimum, a 32m buffer around rivers) or buffers around wetlands, management activities should ensure that these remain in a natural state or are rehabilitated to a natural state. Do not permit infilling, excavation, drainage, hardened surfaces (including buildings and asphalt), intensive agriculture or any new infrastructure developments within a river, riparian area, wetland or buffer area. In addition to avoiding irreversible modification of natural vegetation cover, other activities such as livestock access may need to be controlled and alien vegetation managed to avoid damage to banks, riparian areas, wetlands and buffer areas.
- Where necessary, the site development plan should indicate the 1:100 year flood line, as determined by a professional engineer. If the development is not subject to flood lines this should be confirmed by a professional engineer.
- Areas that are degraded or disturbed should be rehabilitated through programmes, such as Working for Water and Working for Wetlands; and an invasive alien vegetation eradication programme implemented.
- Linear infrastructure that crosses CBAs is not desirable, whereas for ESAs 1 and 2, linear infrastructure features designed to cross rivers and riparian areas are permitted subject to appropriate impact minimisation, avoidance, mitigation and offset.
- Creation of berms, roads, culverts, canalisation, channelization, invasive alien vegetation, impoundment, abstraction, well points, storm-water or other point source inflows, irrigation return flows, grazing / trampling, agriculture, golf courses, suburban gardens, artificial deepening and drainage, should be avoided within CBAs, whereas for ESAs these impacts should be avoided, where possible, within the 1:100 year flood line.

## Managing loss of ecological functionality in ESAs:

- ESA 1s should be maintained in a functional state. Avoid intensification of land uses, and rehabilitate to a natural or near-natural state, where possible.
- In ESA 2s, additional impacts on ecological processes should be avoided.
- Maintain connectivity between CBAs, continue ecosystem functioning within the CBA corridors and prevent the degradation of adjacent CBAs.

### General management guidelines in CBAs and ESA1s:

- An Environmental Management Plan should be compiled where required in CBA 1, CBA 2 and ESA 1. The Environmental Management Plan should include invasive alien species control, fire management, prevention of overgrazing etc. Fire management is especially important and should be appropriately managed for the particular vegetation type(s) on site.
- Control of illegal activities, such as hunting and dumping, which impact on biodiversity, should be prioritised in CBA 1s, then CBA 2s then ESA 1s.
- Prioritise CBA 1s for LandCare projects, Working for Water, beneficial green economy projects (e.g. alien clearing, rehabilitation) and NGOs

## Where rezoning, land use change and infrastructure is proposed, the following guidelines are recommended:

- Refer to Section 5.1 - Guide to integrating the critical biodiversity areas map into environmental impact assessments and land use change applications.
- Biodiversity or ecological specialist to conduct an ecological assessment.
- Land use changes that may impact on the population viability of listed threatened species should be assessed by a specialist.
- **Rezoning in CBAs and ESAs:**
  - In CBA1s and CBA2s: Rezoning of properties to afford additional land use rights that will result in increased biodiversity loss should not be granted (i.e. permission to increase the permitted number of units per erf or per hectare should not be granted).

- In ESA 1s: Rezoning of properties to afford additional land use rights that will result in increased impacts on ecological processes should not be granted, unless significant net conservation gains can be achieved, ecosystem functioning and connectivity of ESAs will not be compromised, and biodiversity impacts with regard to species and habitats are at an acceptable significance and mitigated where possible.
- In highly modified ESA2s that are still important for supporting ecological processes: Current land uses should either be maintained or less intensive land uses permitted (e.g. game farming, game reserves, eco-tourism facilities, low density rural residential), intensification of land use should be avoided (e.g. a transition from extensive agriculture to urban or mining). If cultivation is no longer viable, then these areas should be targeted for ecological restoration.
- **Infrastructure in CBA and ESA:**
  - In CBA1s: The installation of infrastructure in CBA 1s is not desirable and should only be considered if all alternative alignment and design options have been assessed and found to be non-viable. Under such conditions, at least a Basic Assessment (BA) should be undertaken, and if approved, a comprehensive Environmental Management Plan (EMP) must be developed and best-practice restoration efforts strictly implemented.
  - In CBA2s: Should additional infrastructure be required in CBA 2, the requirements of threatened species should be taken into account. At least a Basic Assessment (BA) should be undertaken for any development which results in the intensification of land use, and if intensification of land use is approved, an Environmental Management Plan (EMP) must be developed to minimise impacts on threatened species.
  - Infrastructure developments should be limited to existing degraded / modified footprints, if and where present.
  - In ESA2: Infrastructure should be designed to avoid additional impacts on ecological processes (e.g. ensuring that hydrological functioning of runoff flow rate, quantity and quality are not impacted; or, landscape connectivity is not reduced through, for example, fencing).
  - Units carefully dispersed or clumped to achieve least impact, particularly with regard to threatened species, habitat loss and fragmentation.
  - A site development plan should be compiled and approved by the municipality and LEDET.
  - A services report should be compiled by a professional engineer and a services agreement drawn up with the local municipality. Long term maintenance of infrastructure should be indicated, for example road, sewage and water supply infrastructure.

*Consult the Mopani District Bioregional Plan Guidelines - Part 4, Tables 3 - 7, for additional support*



# award

The Association for Water and Rural Development

AWARD is a non-profit organisation specialising in participatory, research-based project implementation. Their work addresses issues of sustainability, inequity and poverty by building natural-resource management competence and supporting sustainable livelihoods. One of their current projects, supported by USAID, focuses on the Olifants River and the way in which people living in South Africa and Mozambique depend on the Olifants and its contributing waterways. It aims to improve water security and resource management in support of the healthy ecosystems to sustain livelihoods and resilient economic development in the catchment.

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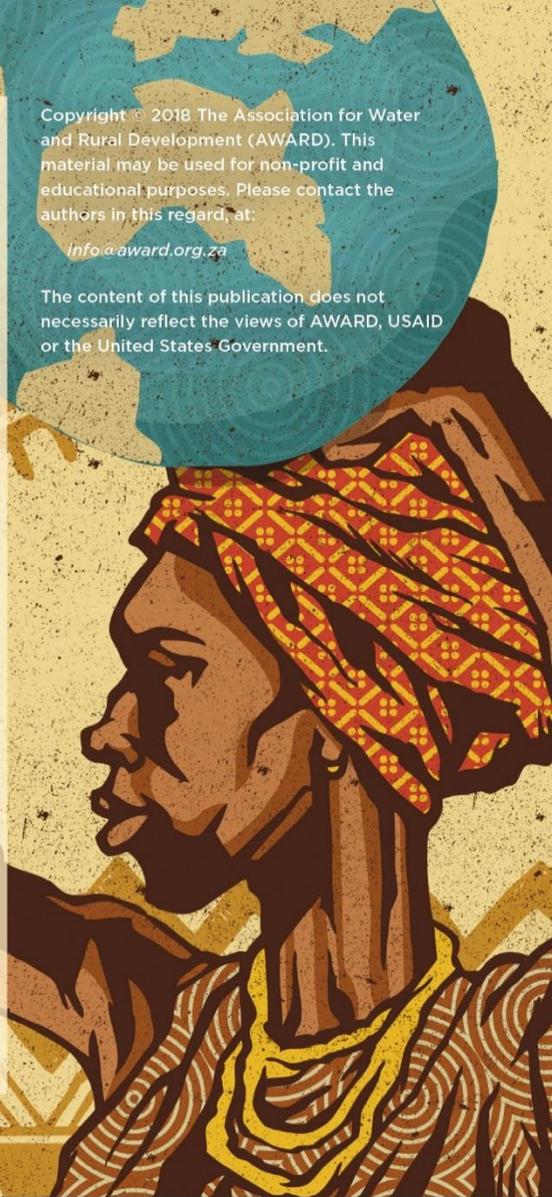
## About USAID: RESILIM-O

USAID: RESILIM-O focuses on the Olifants River Basin and the way in which people living in South Africa and Mozambique depend on the Olifants and its contributing waterways. It aims to improve water security and resource management in support of the healthy ecosystems that support livelihoods and resilient economic development in the catchment. The 5-year programme, involving the South African and Mozambican portions of the Olifants catchment, is being implemented by the Association for Water and Rural Development (AWARD) and is funded by USAID Southern Africa.

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