

# 2023 WESTERN CAPE BIODIVERSITY SPATIAL PLAN AND GUIDELINES OVERVIEW



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## Western Cape Biodiversity Spatial Plan and Guidelines Overview

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## Origins of the Western Cape Biodiversity Spatial Plan

The Western Cape Biodiversity Act 6 of 2021 (WCBA) recognises the unique biodiversity in the Western Cape, the Republic's international obligations, the province's dependence on ecosystem services, the need for access and benefit sharing, and the need to ensure long-term ecological resilience. One mechanism it introduces to ensure that these requirements can be attained is that of the Western Cape Biodiversity Spatial Plan (WCBSP). This plan, an evolution from the 2017 Biodiversity Spatial Plan, comprises two essential components:

- Western Cape Biodiversity Spatial Plan Document (WCBSP): This comprehensive document outlines strategic guidelines for spatial planning. It is developed in accordance with the requirements specified in Chapter 5 of the Western Cape Biodiversity Act (Act 6 of 2021).
- Western Cape Biodiversity Spatial Plan Spatial Informant (WCBSP Map): A powerful spatial tool, the WCBSP map provides critical information in a spatial form.

Together, this product aims to identify the province's ecological infrastructure and prioritise biodiversity-rich areas, while also facilitating sustainable development. In essence, the WCBSP facilitates responsible decision-making in the delicate dance between nature and progress.

## Objectives of the Western Cape Biodiversity Spatial Plan

The WCBSP was developed using the principles and methods of systematic biodiversity planning. It identifies a province-wide network of biodiversity priority areas defined as Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) designed to meet the objectives as defined in Chapter 5 Section 34-35 of the WCBA.

Section 35 of the WCBA defines that the purpose of a Biodiversity Spatial Plan is to:

- Set biodiversity targets.
- Spatially identify one or more categories of biodiversity priority areas that will ensure the continued existence and functioning of biodiversity and ecosystems, including the delivery of ecosystem services.
- Provide guidelines that set out the desired management objectives for land and resource use in each category of biodiversity priority areas.
- Provide spatial planning and land-use decision-making guidelines to ensure environmentally sustainable development and resource use, as well as ecological and spatial resilience in the province.
- Ensure that the ecological infrastructure in the province is maintained, ecosystem fragmentation and loss are avoided, and the resilience of ecosystems and human communities to the impacts of climate change is strengthened.

The WCBSP Map guides natural resource management and conservation efforts, enabling efficient targeting of biodiversity goals. Additionally, they assist planners in evaluating how different land-use options impact biodiversity and people. These maps serve not only for conservation management planning but also for proactively integrating biodiversity considerations into overall development planning and infrastructure investment.

### Ecological Resilience

The capacity of an ecosystem to maintain its normal patterns of nutrient cycling and plant growth even after experiencing damage caused by an ecological or human disturbance.

### Ecosystem Services

The benefits humans derive from ecosystems, which include:

- (a) provisioning services, such as the production of food and provisioning of water.
- (b) regulating services, such as the control of climate, air quality or disease and disaster risk reduction.
- (c) supporting services, such as nutrient cycling, soil formation and crop pollination.
- (d) cultural services, such as spiritual and recreational benefits.

### Systematic biodiversity planning

A planning method that uses software to identify biodiversity priority areas by compiling spatial information for multiple biodiversity features (animals and plants) and ecological processes (climate movement corridors, water production areas, etc.) and determines the minimum area required to secure them. It simultaneously tries to avoid conflict with other forms of land-use, favours areas that are important for freshwater ecosystems and water security and promotes areas that best mitigate against the effects of climate change and ensure connectivity across the landscape.

# Theory of Change

The 2023 Western Cape Biodiversity Spatial Plan is guided by a theory of change to understand how outputs will lead to its goals and vision.

|                          |  |  |  |   |
|--------------------------|--|--|--|---|
| <b>Vision</b>            | Priority biodiversity and ecosystems in the Western Cape are protected and conserved, to strengthen the resilience of ecosystems and the associated delivery of ecosystem services to communities, and to mitigate against the impacts of climate change.  |  |  |   |
| <b>Mission</b>           | To provide and implement a biodiversity spatial plan that can be integrated across sectors to respond to biodiversity loss and support resilience of ecological infrastructure and sustainable development for all.  |  |  |   |
| <b>Problem Statement</b> | <ul style="list-style-type: none"> <li>• Unprecedented biodiversity loss.</li> <li>• 109 of 349 ecosystem types in the Western Cape are Critically Endangered.</li> <li>• 16% of extant taxa in the Western Cape are threatened.</li> <li>• Climate change exacerbates disaster impacts on human communities.</li> <li>• Unsustainable development and unsound land-use practices driving habitat loss.</li> <li>• Degradation of ecological infrastructure.</li> <li>• Inconsistent application of WC BSP guidelines in land-use decision making and planning.</li> </ul> |  |  |   |
| <b>Goals</b>             | Biodiversity targets set.  | Biodiversity priority areas identified.  | Land-use guidelines for management objectives for each category of Biodiversity Priority Area developed. |   |
| <b>Enablers</b>          | Accessible platforms for spatial data and land-use guidelines.   | Appropriate and enforceable biodiversity legislation.  | Integrated multi-sectoral planning.  | Collaborative provincial and municipal platforms support mainstreaming and capacity building. |
| <b>Objectives</b>        | Biodiversity priority areas (Critical Biodiversity Areas and Ecological Support Areas) protected via informed land-use decision making.  | Land-Use and planning Guidelines for Desired Management Objectives for each category of Biodiversity Priority Area are used to maintain ecological intactness and ecosystem stability and persistence. | Biodiversity priorities mainstreamed into decision making.   | Resilience of ecosystems and human communities to impacts of climate change strengthened.     |
| <b>Outputs</b>           | Environmental authorisations are informed by WC BSP.   | Municipal spatial development frameworks reflect categories which incorporate the WC BSP Biodiversity priority areas.  | Mainstreaming products and capacity building actions.  |   |
| <b>Outcomes</b>          | Land-use and planning informed by best available science.  | Improved compliance with Biodiversity legislation.   | Ecological infrastructure maintained.  | Biodiversity targets met.   |

## Natural heritage in the Western Cape

The Western Cape is situated in the southwestern most part of South Africa, flanked by the Indian Ocean to the south and the Atlantic Ocean to the west and southwest, the two oceans meeting at Cape Agulhas, the southernmost point of Africa. It is predominantly a winter rainfall area, with warm to hot dry summers and cool rainy winters, with a similar climate to other Mediterranean ecosystem types located in the Mediterranean basin, parts of Chile, California, and parts of Southwestern and Southeastern Australia. The rainfall is more evenly distributed throughout the year further eastward with non-seasonal rainfall in the Southern Cape. Rainfall decreases further inland, with the Cape Fold Mountains creating a rain shadow. The Nama Karoo region in the northeastern parts of the province has predominantly late summer rainfall which falls in erratic thunderstorms.

The primary river catchments of the Western Cape are the Berg, Breede, Olifants and Gouritz, and each provide a vital function in terms of the water needs for the various economic sectors in a predominantly arid province. The mountains mentioned above are vital for these catchments, as these regions experience elevated rainfall. The combination of the high variability of topography, which in turn results in high levels of climatic variation over short distances, variation in geology and soils has resulted in high levels of speciation within the Western Cape, particularly within the Cape Floristic Region and Succulent Karoo Biome.

The Cape Floristic Region is a remarkable area characterised by extraordinary biodiversity and endemism. Within this relatively small region, over 9,000 vascular plant species thrive, with an impressive 69 percent of them being endemic to this area. Much of this remarkable diversity is associated with the fynbos biome, a Mediterranean-type, fire-prone shrubland. Occupying less than 0.5 percent of Africa's land area, it supports approximately 20 percent of the continent's plant diversity. This hotspot is home to the greatest non-tropical concentration of higher plant species globally. Remarkably, it houses five of South Africa's 12 endemic plant families and 160 endemic genera. This diversity contributes significantly to the regional economy, with the wildflower industry alone contributing an estimated R150 million annually to the Western Cape Gross Domestic Product.

However, the Western Cape region faces significant challenges. Unsustainable land-use practices, invasive alien species, changing weather patterns, climate change effects, and developmental pressure threaten its habitats. As a result of these threats and the high levels of endemism and diversity, it has earned the status of a Global Biodiversity Hotspot. Striking a delicate balance between protecting biodiversity and promoting infrastructural and economic development remains an ongoing and critical challenge.

## Intended Use and Application of the Biodiversity Spatial Plan

The WCBSP is intended as the primary spatial biodiversity informant for the Western Cape. The WCBSP Map and associated guidelines can be used for five main types of application in land and resource use decision making:

- **Proactive conservation:** such as identifying land of high biodiversity value for the expansion and consolidation of protected areas, either through biodiversity stewardship agreements, land acquisition or other tools that may be developed, e.g. strategic offsetting / offset banking.
- **Proactive forward-planning:** such as the incorporation of CBAs, ESAs, and the land-use guidelines into local municipality spatial planning tools or environmental management instruments.
- **Development applications:** such as applications for Environmental Authorisation in terms of the National Environmental Management Act 107 of 1998 (NEMA); agricultural land-use decisions (e.g., cultivation licenses) in terms of the Conservation of Agricultural Resources Act 43 of 1983 (CARA); authorisations for prospecting and mining in terms of both the Mineral and Petroleum Resources Development Act 28 of 2002 (MPRDA) and NEMA, and land-use planning decisions in terms of both the Spatial Planning and Land-use Management Act 16 of 2013 (SPLUMA) and Western Cape Land Use Planning Act 3 of 2014 (LUPA).
- **Restoration:** such as identifying biodiversity priority areas requiring restoration or other action to improve the condition of the environment and restore biodiversity pattern and ecological processes.
- **Reactive conservation:** aid in the identification of potential offset areas.

## Intended Users of the WCBSP

The WCBSP should be used by all sectors involved in land-use planning and decision-making in the Western Cape to ensure the protection of biodiversity assets and ecological infrastructure and the delivery of vital ecosystem services. This includes users (e.g., organs of state) who are required to use the plan to meet legislative or policy requirements, and those users who will find it a useful informant to their planning processes.

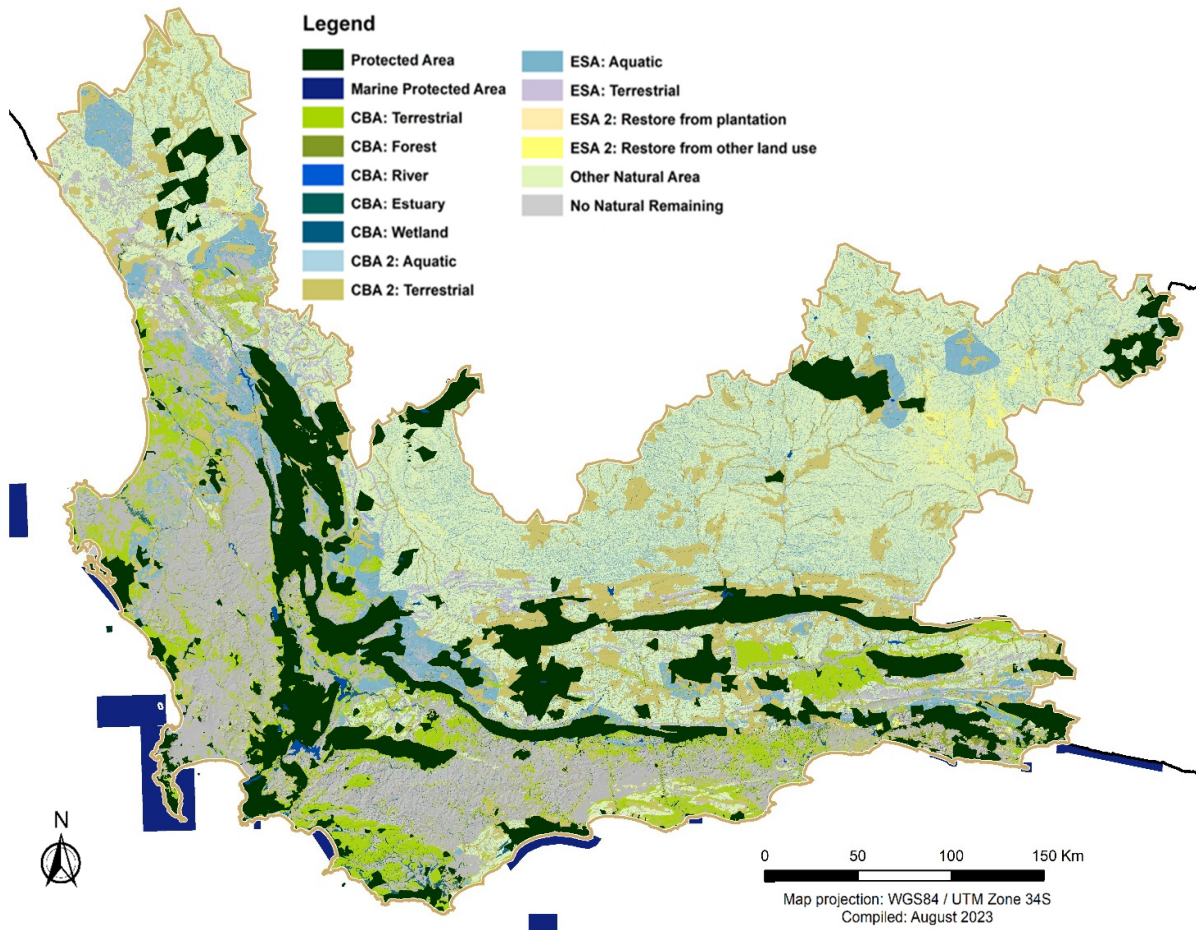
The main users of the WCBSP include national and provincial government departments, conservation agencies, spatial planners and other officials in local and district municipalities, environmental professionals including planning and environmental assessment practitioners and specialists, biodiversity and conservation scientists in research institutions, the private sector and civil society organisations, strategic planners associated with natural resource management programmes (e.g., Working for Water, Working on Fire, and Working for Wetlands), and landowners contemplating changes in land-use.

## Biodiversity Spatial Plan

The WCBSP Document serves as the authoritative record underpinning all elements that constitute the Biodiversity Spatial Plan. It not only explains the wealth of biodiversity and land-use information that informed the WCBSP Map’s creation, but also provides essential land-use guidelines to enhance effective biodiversity management.

## Biodiversity Spatial Plan Map

The WCBSP includes a map of biodiversity identifying Priority Biodiversity Areas, categorised as either Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs), requiring protection for the entire province, covering both the terrestrial and freshwater realms, as well as major coastal and estuarine habitats (Figure I). This map, composed of multiple layers, provides the relevant spatial data crucial to advise planning decisions that will result in both sustainable development and the conservation of important biodiversity and ecological infrastructure.



**Figure I:** The 2023 Western Cape Biodiversity Spatial Plan Map of Biodiversity Priority Areas

# Definitions and Management Objectives of the Biodiversity Spatial Plan Map Categories

To include biodiversity priorities within existing municipal spatial plans, municipalities develop land-use zoning schemes as part of their Spatial Development Frameworks which need to align with the various WCBSA categories (as per Section 37(c) of the WCBA). The various Biodiversity Priority Area sub-categories, their meanings and desired management objectives are summarised in Table 1.

**Table 1:** Summary of map categories and their meanings.

| Map Category   | Definition   | Desired Management Objective  | Sub-Category                       |
|--|--|---|------------------------------------|
| <b>Protected Area</b>                                    | Areas proclaimed as protected areas in terms of national or provincial legislation.  | Must be kept in a natural state, with a management plan focused on maintaining or improving the state of biodiversity. A biodiversity benchmark.  |                                    |
| <b>Critical Biodiversity Area 1</b>                      | Areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.   | Maintain in a natural or near-natural state, with no further loss of habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land-uses are appropriate.  | <b>River</b>                       |
|  |  |   | <b>Estuary</b>                     |
|  |  |   | <b>Wetland</b>                     |
|  |  |   | <b>Forest</b>                      |
|  |  |   | <b>Terrestrial</b>                 |
| <b>Critical Biodiversity Area 2</b>                      | Areas in a degraded or secondary condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.   | Maintain in a functional, natural, or near-natural state, with no further loss of natural habitat. These areas should be rehabilitated.   | <b>Degraded</b>                    |
| <b>Ecological Support Area 1</b>                         | Areas that are not essential for meeting biodiversity targets but play an important role in supporting the functioning of PAs or CBAs and are often vital for delivering ecosystem services.   | Maintain in a functional, near-natural state. Some habitat loss is acceptable, provided the underlying biodiversity objectives and ecological functioning are not compromised. Maintaining and improving protection of areas identified as ESA Water Source and Water Recharge important to secure water resources, particularly in Strategic Water Source Areas (SWSAs). | <b>Foredune</b>                    |
|  |  |   | <b>Forest</b>                      |
|  |  |   | <b>Climate Adaptation Corridor</b> |
|  |  |   | <b>Coastal Resource Protection</b> |
|  |  |   | <b>Endangered Ecosystem</b>        |
|  |  |   | <b>River</b>                       |
|  |  |   | <b>Estuary</b>                     |
|  |  |   | <b>Wetland</b>                     |
|  |  |   | <b>Watercourse Protection</b>      |
|  |  |   | <b>Water Source Protection</b>     |
| <b>Water Recharge Protection</b>                         |  |   |                                    |
| <b>Ecological Support Area 2</b>                         | Areas not essential for meeting biodiversity targets but have an important role in supporting the functioning of PAs or CBAs. Often vital for delivering ecosystem services.   | Restore and/or manage to minimise impact on ecological infrastructure functioning; especially soil and water-related service.   | <b>Restore from Non-Natural</b>    |
| <b>Ecological Support Area: Species Specific Overlay</b> | Terrestrial No Natural Remaining areas that provide a critical support function to a threatened or protected species e.g. cultivated land associated with nesting/roosting sites.  | Maintain current land-use or rehabilitate to functional natural area.   | <b>Species Specific</b>            |
| <b>Other Natural Areas: Natural to Near-Natural</b>      | Areas that have not been identified as a priority in the systematic biodiversity plan but retain most of their natural character and perform a range of biodiversity and ecological infrastructure functions. They are still an important part of the natural ecosystem.                     | Minimise habitat and species loss and ensure ecosystem functionality through strategic landscape planning. Offers flexibility in permissible land-uses, but authorisation required for high-impact land-uses.   | <b>Natural to Near-Natural</b>     |
|  |  |   | <b>Degraded</b>                    |
| <b>No Natural Remaining</b>                              | Areas that have been modified by human activity to the extent that they are no longer natural nor contribute to biodiversity targets. These areas may still provide limited biodiversity and ecological infrastructure functions, even if not currently prioritised for conservation action. | Manage in a biodiversity-sensitive manner, aiming to maximise ecological functionality. Offers the most flexibility regarding potential land-uses, but authorization/s may still be required for high-impact land-uses.   | <b>No Natural Remaining</b>        |

## Land-use Guidelines

The focus of the land-use guidelines contained in the WCBSP is to identify land-uses compatible with maintaining and achieving biodiversity targets. They should, therefore, be used in conjunction with any other sector-specific guidelines that may be available for the province.

Land-use guidelines provided below are intended primarily to guide planning and decision-making in terrestrial and freshwater CBAs and ESAs identified on land outside protected areas. In the sections that follow, general recommendations are given for each category on the WCBSP Map, relating to Desired Management Objectives and appropriate land-uses. Guidelines for locating land-uses within CBAs are provided in Table 2.

**Table 2: Biodiversity Priority Areas Categories and Land-use Zones with Desired Management Objectives**

|   |  |   |
|---|--|---|
| Yes<br>Permissible land uses that are unlikely to compromise the biodiversity objective | Restricted<br>Land-uses that may compromise the biodiversity objective and are only permissible under certain conditions | No<br>Land-uses that will compromise the biodiversity objective and are not permissible |
|---|--|---|

| Map and Land use Categories |  | Protected Area  | Critical Biodiversity Area 1 | Critical Biodiversity Area 2 | Ecological Support Area 1: Terrestrial | Ecological Support Area 1: Aquatic | Ecological Support Area 2 | Ecological Support Area: Species Specific Overlay | ONA: Natural to Near Natural | ONA: Degraded | No Natural Remaining |     |
|-----------------------------|--|---|------------------------------|------------------------------|--|------------------------------------|---------------------------|---|------------------------------|---------------|----------------------|-----|
| Conservation                | Proclaimed Protected Areas               | Land use within proclaimed protected areas is subject to a management plan drawn up for that specific protected area. | Yes                          | Yes                          | Yes                                    | Yes                                | Yes                       | Restricted  | Yes                          | Restricted    | Restricted           |     |
|                             | Conservation Areas                       |   | Yes                          | Yes                          | Yes                                    | Yes                                | Yes                       | Yes   | Yes                          | Restricted    | Restricted           |     |
| Agriculture                 | Intensive Agriculture                    |   | No                           | No                           | No                                     | No                                 | No                        | Restricted  | Restricted                   | Restricted    | Yes                  |     |
|                             | Extensive Agriculture                    |   | Restricted                   | Restricted                   | Restricted                             | Restricted                         | Restricted                | Restricted  | Restricted                   | Yes           | Yes                  | Yes |
| Tourism and Recreational    | Low Impact Facilities                    |   | No                           | Restricted                   | Restricted                             | Restricted                         | Restricted                | Restricted  | Restricted                   | Restricted    | Yes                  | Yes |
|                             | High Impact Facilities                   |   | No                           | No                           | No                                     | No                                 | No                        | No  | Restricted                   | Restricted    | Restricted           | Yes |
| Rural Accommodation         | Agri-worker Accommodation                |   | No                           | No                           | No                                     | No                                 | No                        | Restricted  | Restricted                   | Restricted    | Restricted           | Yes |
|                             | Smallholdings                            |   | No                           | No                           | No                                     | No                                 | Restricted                | Restricted  | Restricted                   | Restricted    | Yes                  | Yes |
| Urban                       | Existing settlements and urban expansion |   | No                           | No                           | No                                     | No                                 | No                        | Restricted  | Restricted                   | Restricted    | Restricted           | Yes |
|                             | Community Facilities and Institutions    |   | No                           | No                           | No                                     | No                                 | No                        | Restricted  | Restricted                   | Restricted    | Restricted           | Yes |



**Table 3 Cont.: Biodiversity Priority Areas Categories and Land-use Zones with Desired Management Objectives**

|   |  |   |
|---|--|---|
| Yes<br>Permissible land uses that are unlikely to compromise the biodiversity objective | Restricted<br>Land-uses that may compromise the biodiversity objective and are only permissible under certain conditions | No<br>Land-uses that will compromise the biodiversity objective and are not permissible |
|---|--|---|

| Map and Land use Categories  |  | Protected Area  | Critical Biodiversity Area 1 | Critical Biodiversity Area 2 | Ecological Support Area 1: Terrestrial | Ecological Support Area 1: Aquatic | Ecological Support Area 2 | Ecological Support Area: Species Specific Overlay | ONA: Natural to Near Natural | ONA: Degraded | No Natural Remaining |
|------------------------------|--|---|------------------------------|------------------------------|--|------------------------------------|---------------------------|---|------------------------------|---------------|----------------------|
| Business & Industrial        | Rural Business                                 | Land use within proclaimed protected areas is subject to a management plan drawn up for that specific protected area. | No                           | No                           | Restricted                             | No                                 | No                        | No  | Restricted                   | Restricted    | Yes                  |
|                              | Non-place-bound Industry (low-moderate impact) |   | No                           | No                           | Restricted                             | No                                 | No                        | Restricted  | Restricted                   | Restricted    | Yes                  |
|                              | Non-place-bound Industry (high impact)         |   | No                           | No                           | No                                     | No                                 | No                        | Restricted  | Restricted                   | Restricted    | Yes                  |
|                              | Renewable Energy                               |   | No                           | No                           | Restricted                             | No                                 | Restricted                | No  | Restricted                   | Restricted    | Yes                  |
|                              | Extractive Industry (incl. Prospecting)        |   | No                           | No                           | No                                     | No                                 | No                        | Restricted  | Restricted                   | Restricted    | Yes                  |
| Infrastructure Installations | Linear - roads and rail                        |   | No                           | Restricted                   | Restricted                             | Restricted                         | Restricted                | No  | Restricted                   | Yes           | Yes                  |
|                              | Linear - pipelines & canals                    |   | No                           | Restricted                   | Restricted                             | Restricted                         | Restricted                | Restricted  | Restricted                   | Yes           | Yes                  |
|                              | Linear - powerlines                            |   | Restricted                   | Restricted                   | Restricted                             | Restricted                         | Restricted                | Restricted  | Restricted                   | Yes           | Yes                  |
|                              | Other Utilities                                |   | No                           | No                           | Restricted                             | No                                 | Restricted                | Restricted  | Restricted                   | Yes           | Yes                  |

## How to find out more about the Western Cape Biodiversity Spatial Plan

Electronic copies of the WCBSP are available at the following website:

<https://www.capenature.co.za/western-cape-biodiversity-spatial-plan>

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