

## SECTION E: ENVIRONMENTAL COMPOSITE

### SECTION SYNOPSIS

This section provides a summary and sensitivity analysis of the key environmental characteristics of the site. These assessments will provide the basis for the preparation of the development suitability plan for the GRCA.

The Environmental Composite serves as background for the following:

- a) Determining the suitability of the site for the proposed developments
- b) Preparing information for the Site Development Plan, which provides the spatial parameters for all aspects of the proposed projects.

## 5. ENVIRONMENTAL COMPOSITE

### 5.1 ENVIRONMENTAL COMPOSITE PROCESS

The primary objectives with the Environmental Composite are the following:

1. Provide a basis for the preparation of a Development Suitability Plan
2. Determine the spatial parameters for the proposed projects that will be illustrated by the Site Master Plan. Diagram 1 below illustrates relationship between the various plans and related maps.

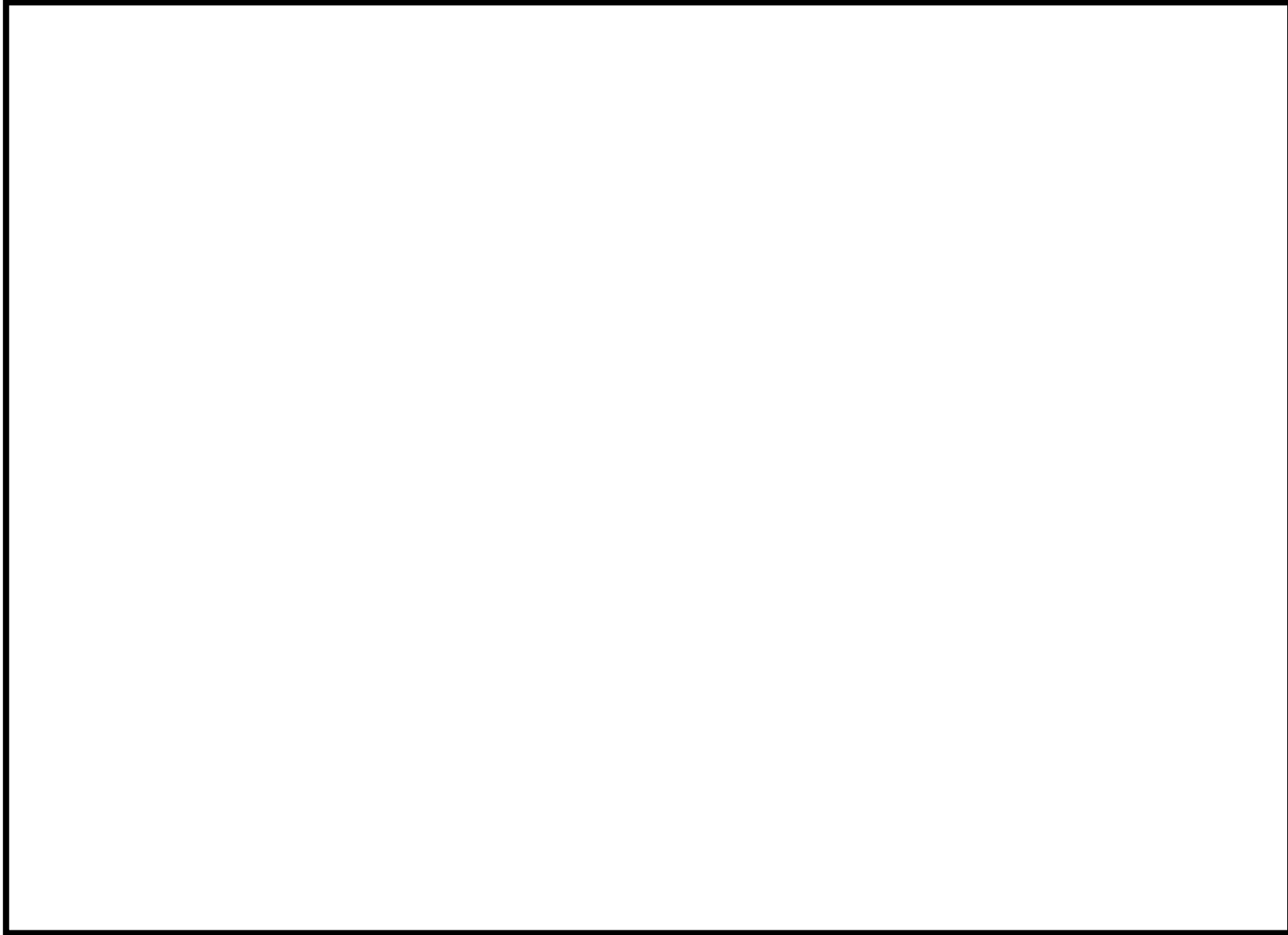


Diagram 1: Process development and relationships

## 5.2 SPATIAL ZONING PARAMETERS

In Chapter 3 (Site Description and Context), the Biophysical aspects, Social context and Current land use was explained and mapped. The suitability analysis procedure explained in Chapter 4 (Guidelines and Principles for Planning, Design and Management) will now be used to overlay each of the Biophysical Characteristics with Conservation, Agriculture, Recreation and Urbanisation to reveal the relative values for each region. Table 6 gives a description and basic purpose of these four primary zones.

In order to provide more detailed information for the zoning of each of the primary zones, a matrix was developed for both the Gourits River Catchment Area (GRCA) as well as the Kannaland Tourism Node (KTN). It shows all the possible zoning elements and requirements related to each of the primary zones (Refer to Addendum B). These elements are then evaluated and categorized as either suitable (marked with an X) or not suitable. With these categories identified in each zone, a suitability plan for each of the primary zones is drawn up.

ZONES	BASIC PURPOSES
Conservation Zones	<ul style="list-style-type: none"> <li>• Comprising areas of conservation importance.</li> <li>• Only non-consumptive land-uses may be allowed conditionally.</li> </ul>
Agricultural Zones	<ul style="list-style-type: none"> <li>• Constituting rural areas where extensive and intensive agriculture is practiced, including exotic forestry areas.</li> </ul>
Urban Zones	<ul style="list-style-type: none"> <li>• Representing a broad spectrum of nodal urban related settlements and associated services and infrastructure.</li> <li>• Representing industrial areas.</li> </ul>
Recreation Zones	<ul style="list-style-type: none"> <li>• Representing all the possible recreation and tourism activities.</li> </ul>

Table 7: The four primary spatial zones

## 5.2 SUITABILITY ZONING FOR THE GOURITS RIVER CATCHMENT AREA

### 5.3.1 Suitability Zones

#### 5.3.1.1 Conservational Suitability Zones

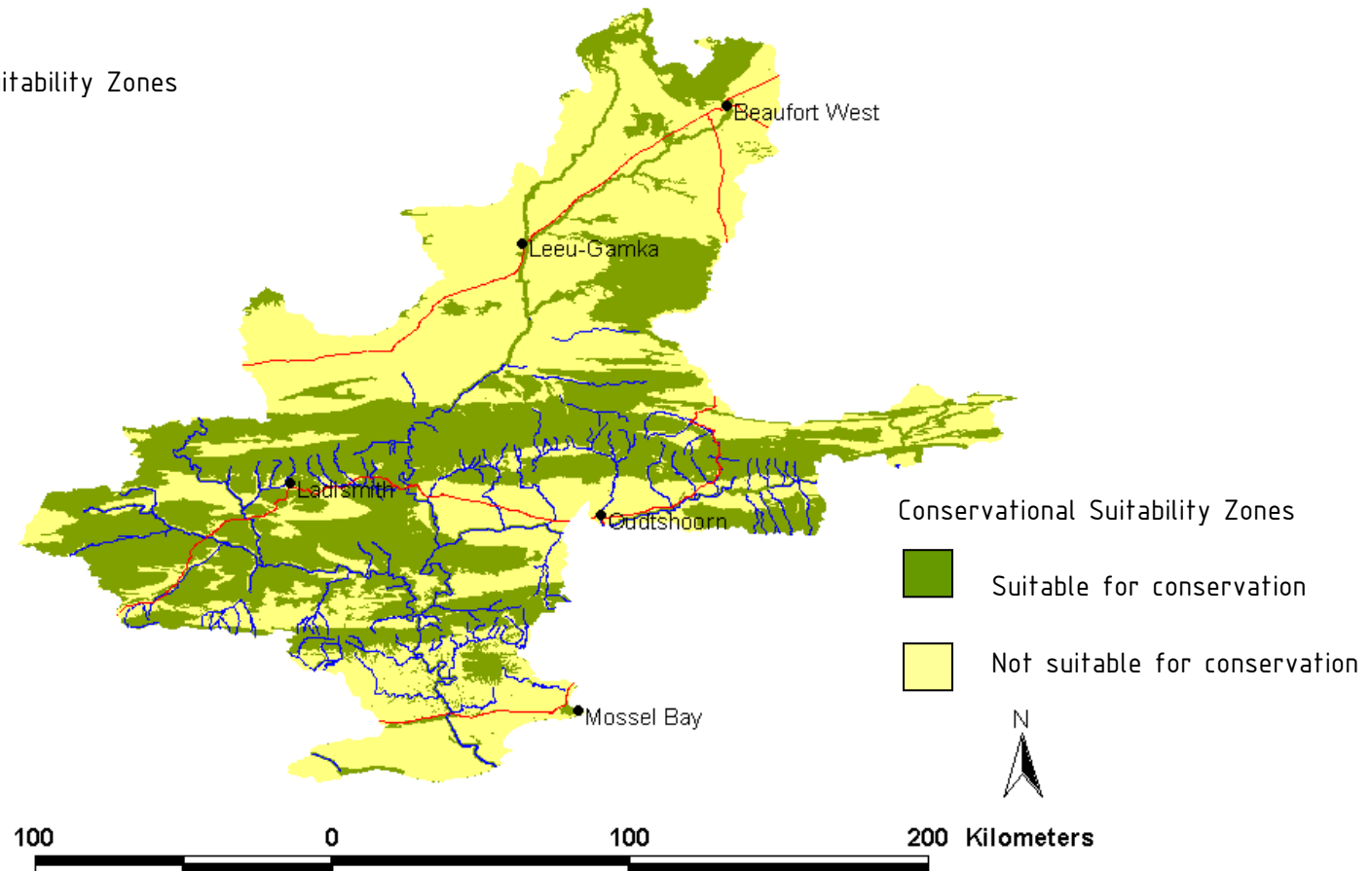


Figure 22: Conservational Suitability Zones in the GRCA

## 5.3.1.2 Agricultural Suitability Zones

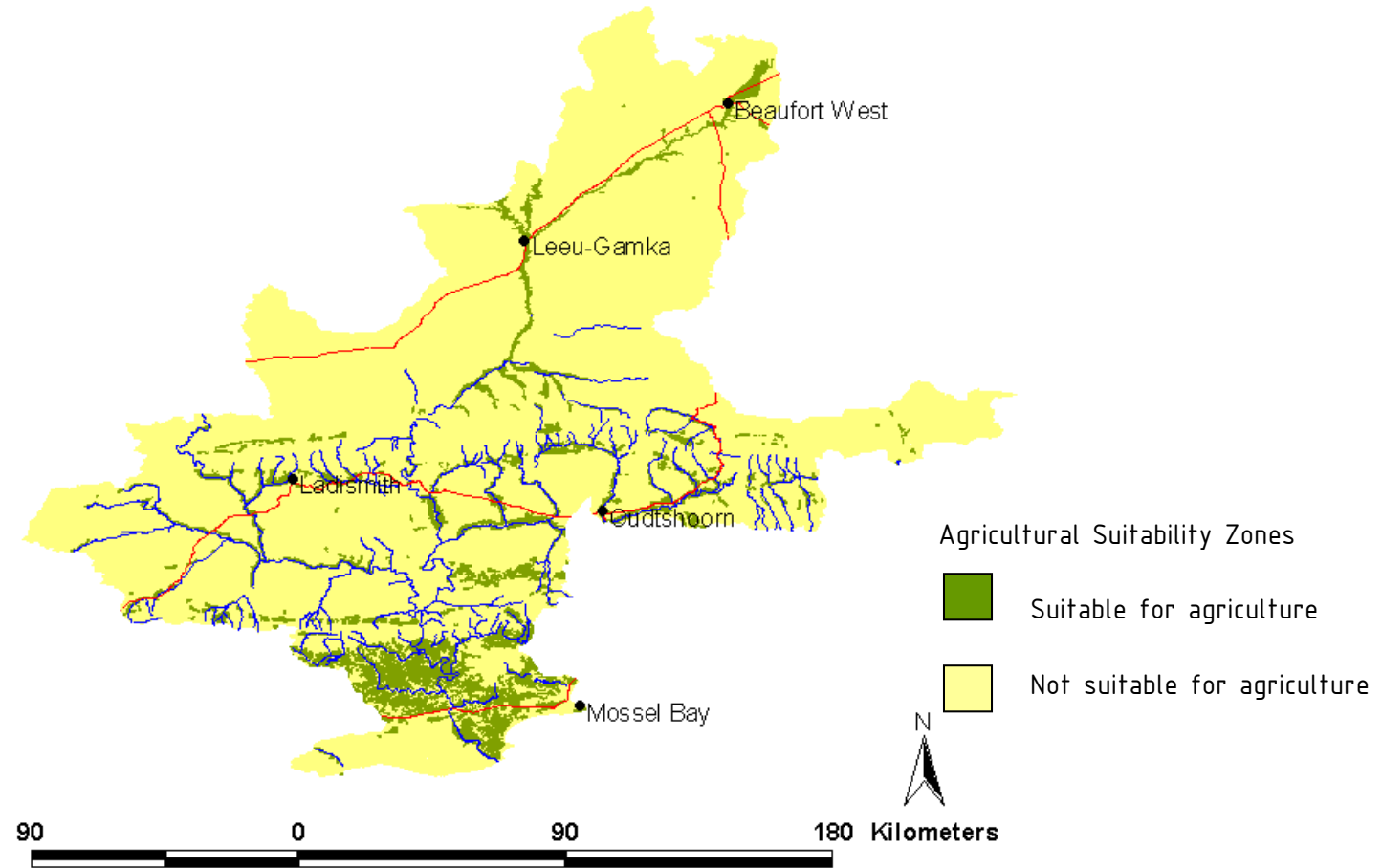


Figure 23: Agricultural Suitability Zones in the GRCA

5.3.1.3 Urban Suitability Zones

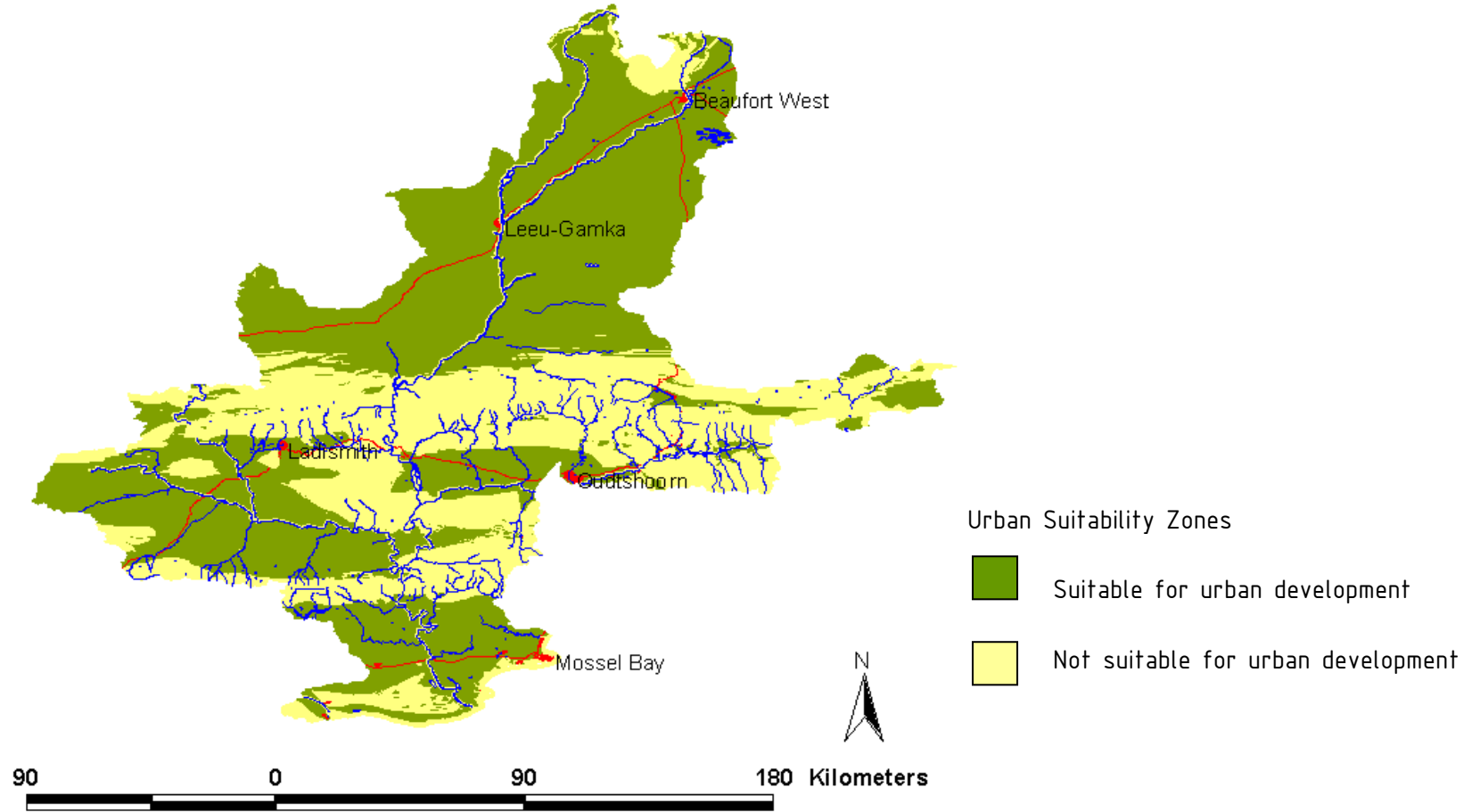


Figure 24: Urban Suitability Zones in the GRCA

5.3.1.4 Recreational Suitability Zones

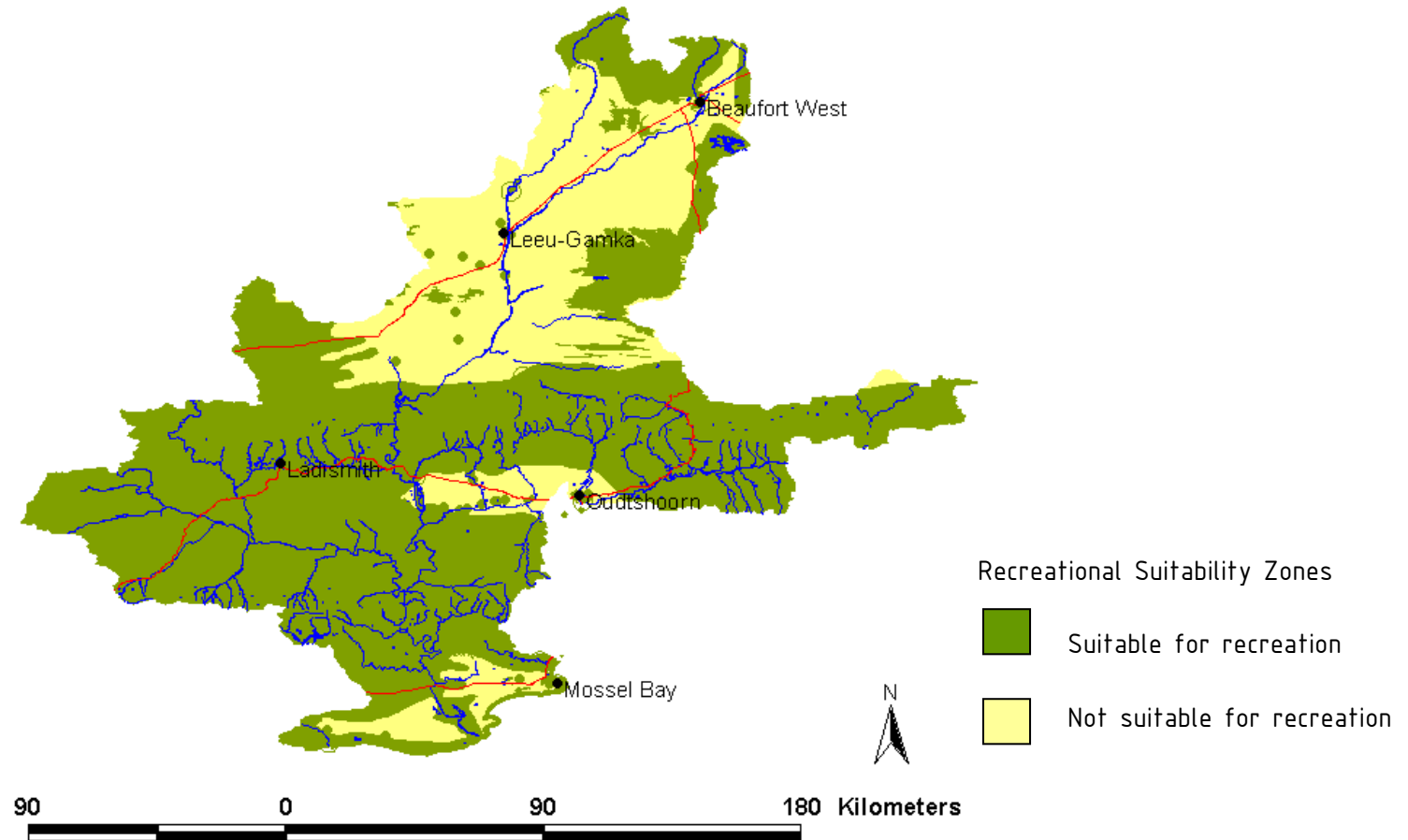


Figure 25: Recreational Suitability Zones in the GRCA

## 5.4 SUITABILITY ZONING FOR THE KANNALAND TOURISM NODE (KTN)

### 5.4.1 CONSERVATIONAL SUITABILITY ZONE

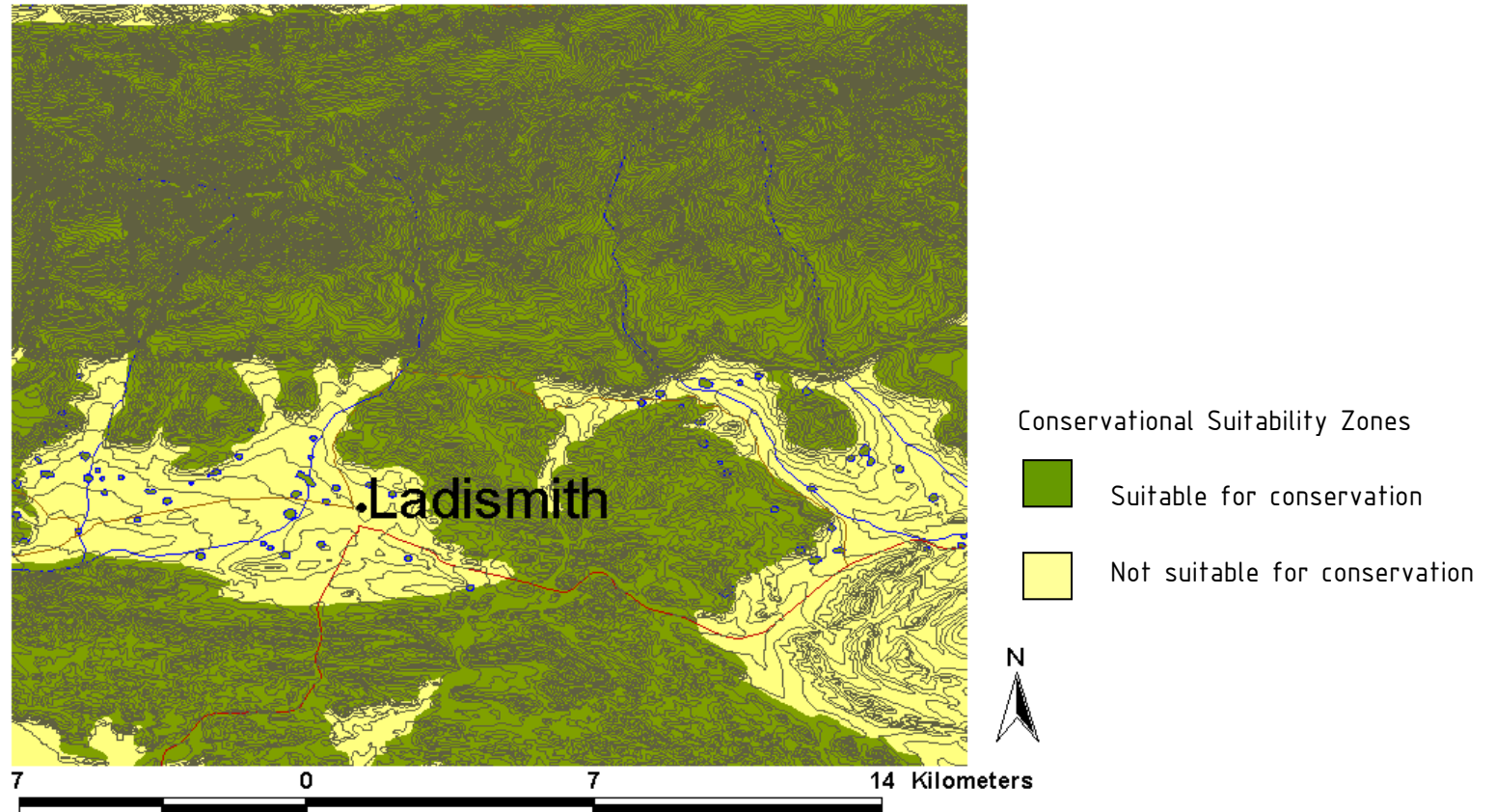


Figure 26: Conservational Suitability Zones in the KTN



### 5.4.2 AGRICULTURAL SUITABILITY ZONES

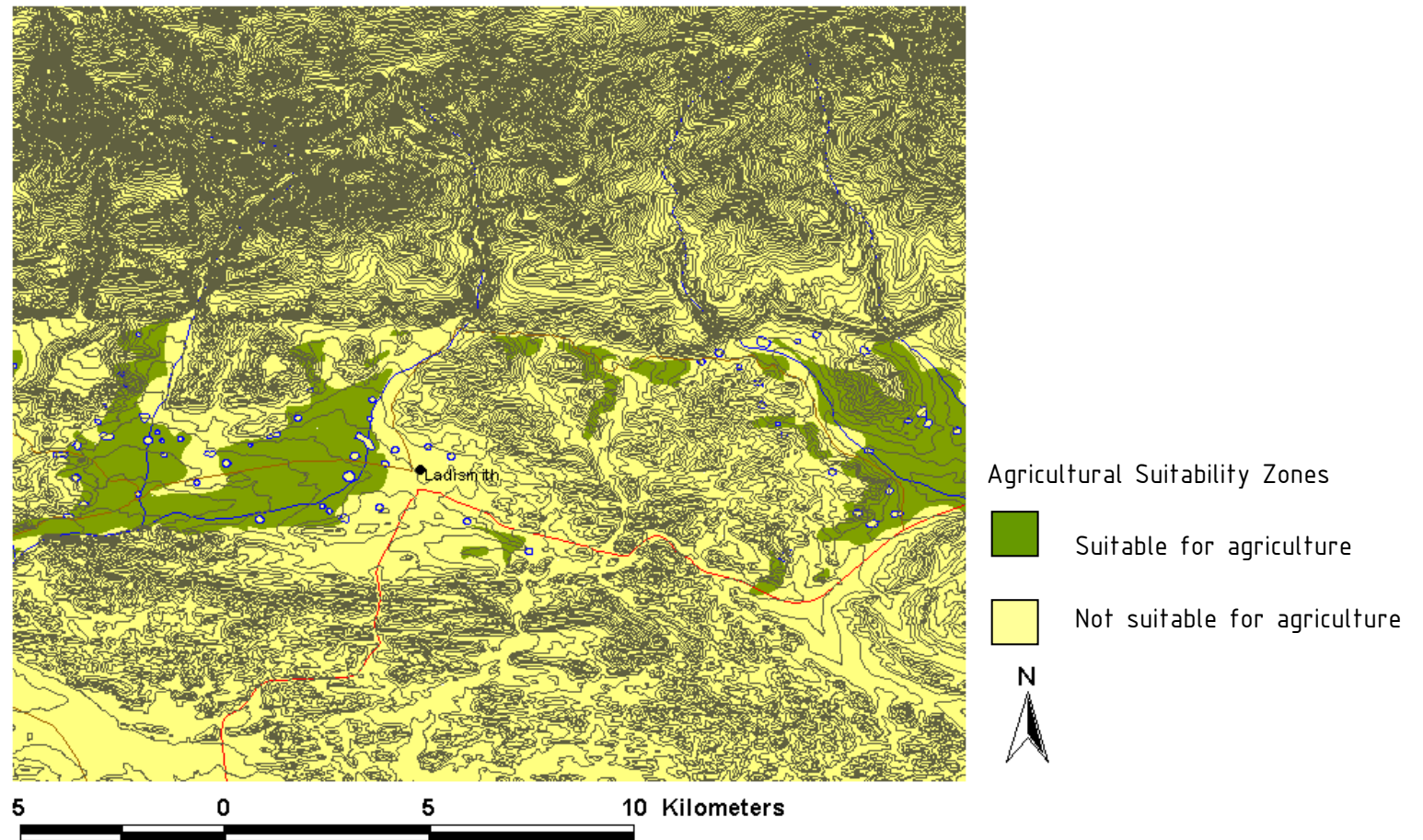


Figure 27: Agricultural Suitability Zones in the KTN

### 5.4.3 URBAN SUITABILITY ZONES

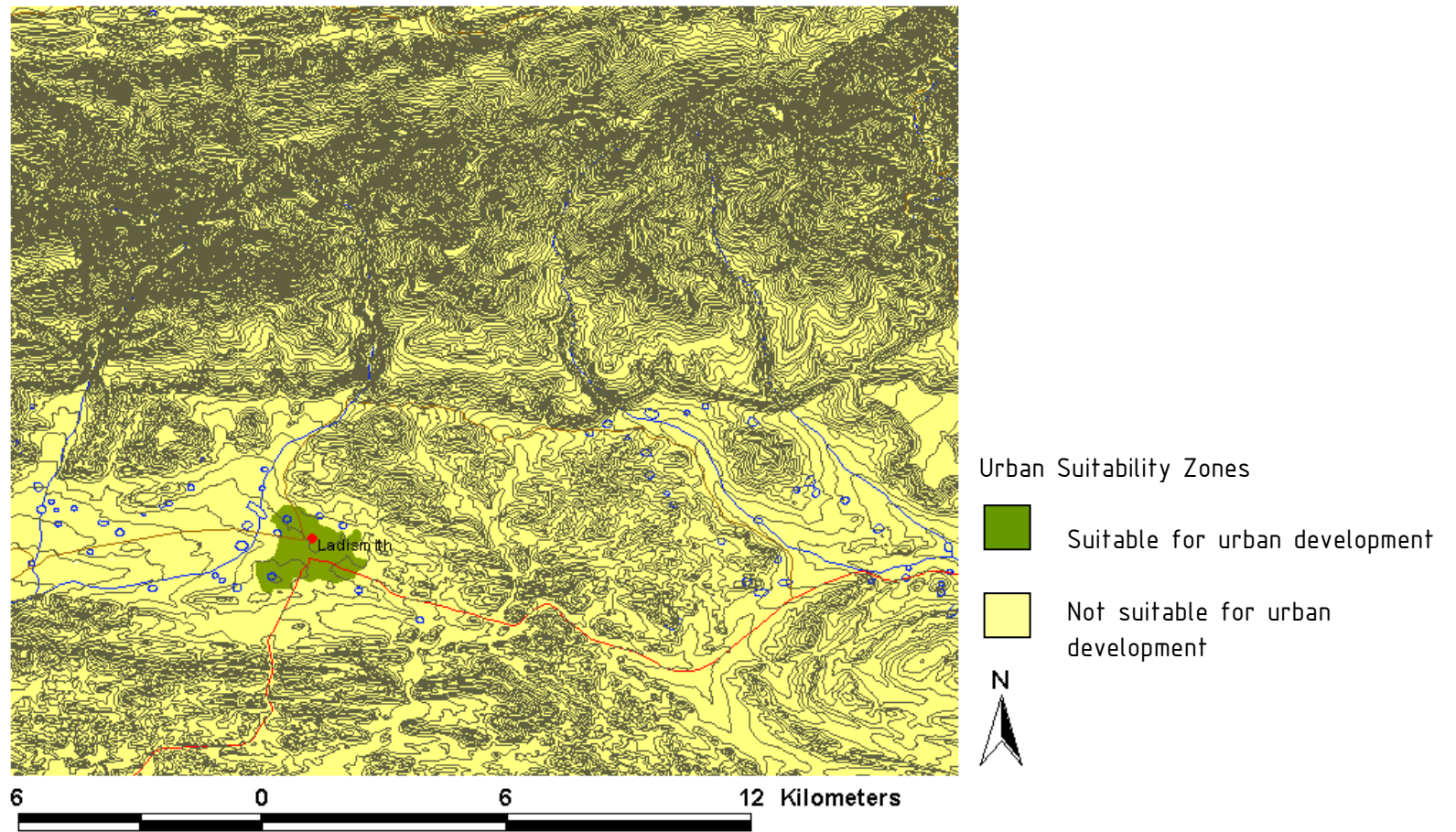


Figure 28: Urban Suitability Zones in the KTN

#### 5.4.4 RECREATIONAL SUITABILITY ZONES

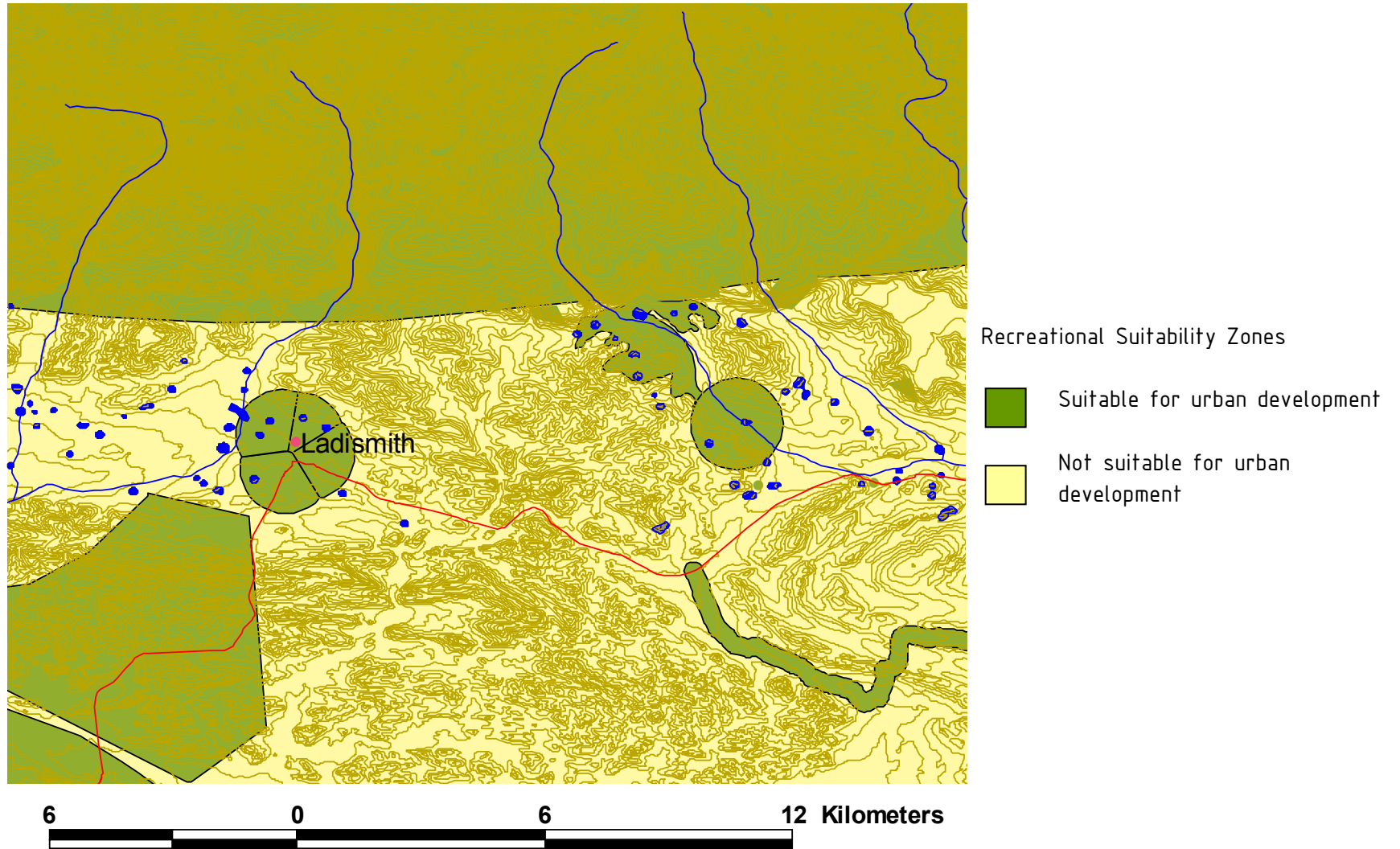


Figure 29: Recreational Suitability Zones in the KTN



## 5.5 LAND-USE ZONES

The ecological characteristics, suitability's and potentials have now been identified and mapped. The next step in the planning process is to identify the relevant activities linked to the various values and zone them accordingly. In Table 6 the Zones are divided into activities and facilities needed. The intensity is the possible impact these facilities will have on the environment.

The three zones are:

- Conservational
- Cultural
- Recreational

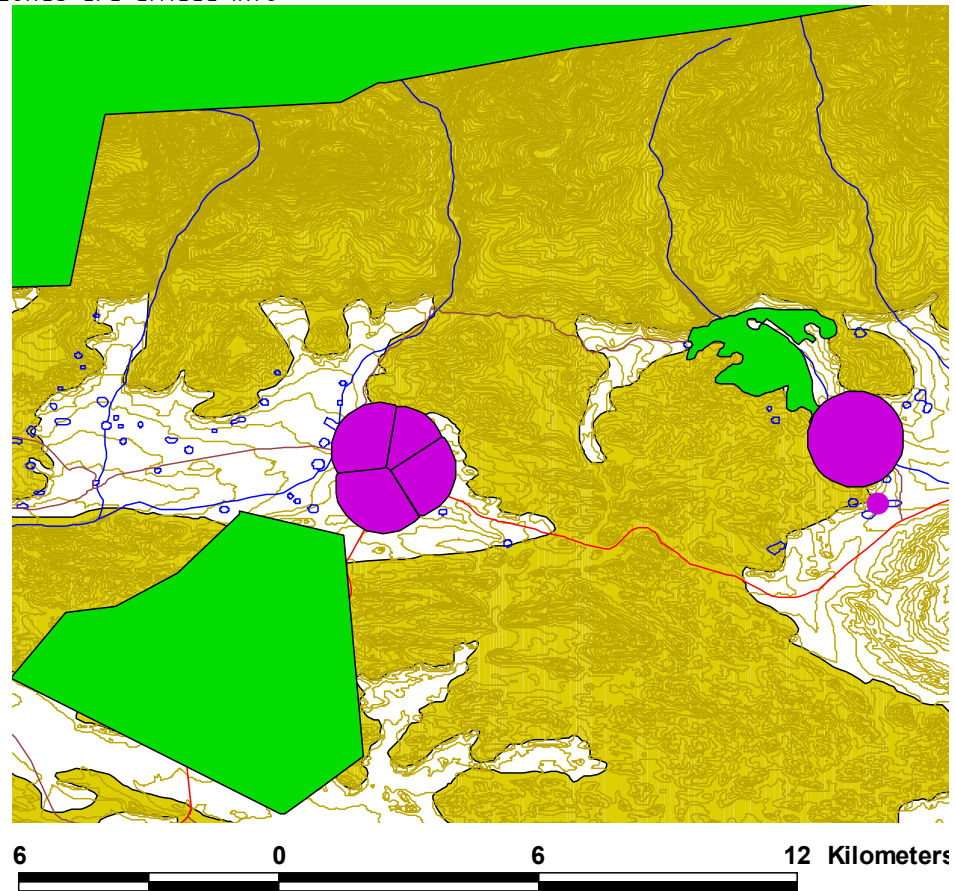


Figure 31: Land-use Zones in the KTN

Table 8: Zoning of Kannaland Tourism Node

<b>ZONING OF KANNALAND TOURISM NODE</b>			
<b>CONSERVATIONAL ZONES</b>			
	<b>ACTIVITIES</b>	<b>INTENSITY</b>	<b>FACILITIES</b>
<b>SUPPORTING FACILITIES</b>	Entrance	Medium	Entrance control, parking, ablutions, info centre
	Nature management	Medium	Fauna and Flora
	Services	Medium	Service roads
<b>UTILIZATION</b>	Veld study	Low	Fauna and Flora
	Bird watching	Low	Bird hide
	Hiking	Low	Hiking trail, Overnight cabins
	Game viewing	Low	Circulation routes, Waterholes, Overnight cabins
	Horse Riding	Low	Horse trails, Stables
<b>CULTURAL ZONES</b>			
<b>SUPPORTING FACILITIES</b>	Entrance	Medium	Entrance control, parking, ablutions, info centre
<b>UTILIZATION</b>	Formal learning	High	Cultural centre
	Informal learning	Low	Info kiosks at cultural historical features
	Educational trips	Low	Cultural, historical features
<b>RECREATIONAL ZONES</b>			
<b>SUPPORTING FACILITIES</b>	Entrance	Low	Entrance control, parking, ablutions, info centre
	Sanitary	Low	Ablutions
	Services	Low	Service roads
	Eat and Drink	Medium	Restaurants, coffee shops, market, kiosks
<b>RECREATION</b>	Hiking	Low	Hiking trail, Overnight cabins
	Walking	Low	Trails, Info centres, water points
	Camping	High	Chalets, ablution, parking, caravan stands, food preparing areas, services
	Picnic	Medium	Picnic area
	Braai	Medium	Picnic area, taps, tables
	Cycling	Low	Cycling routes
	Accommodation	High	Chalets
	Canoeing	Low	Perennial water, waterfront
	Swimming	Low	Swimming pool

RECREATIONAL ZONES			
	ACTIVITIES	INTENSITY	FACILITIES
<b>RECREATION</b>	Horse Riding	Low	Horse trails, Stables
	Climbing	Low	Info centre
	Scenic Drives	Low	Info boards, Gateway, Roadside stalls, Restaurants
	Viewing	Low	Fauna, Flora, Waterfalls, Rock Formations, Landforms, Topographical features, Cultural Patterns, Man-made structures, Historical, Archeological, Geological

### 5.5.1 CONSERVATION

Conservational activities are related to the study of nature and natural processes. These activities do not need facilities as such, but are in need of relatively unspoilt natural features. Some of the proposed activities are listed below:

- ❑ Veld study
- ❑ Bird watching
- ❑ Wilderness trail
- ❑ Game viewing
- ❑ Horse riding
- ❑ Hiking

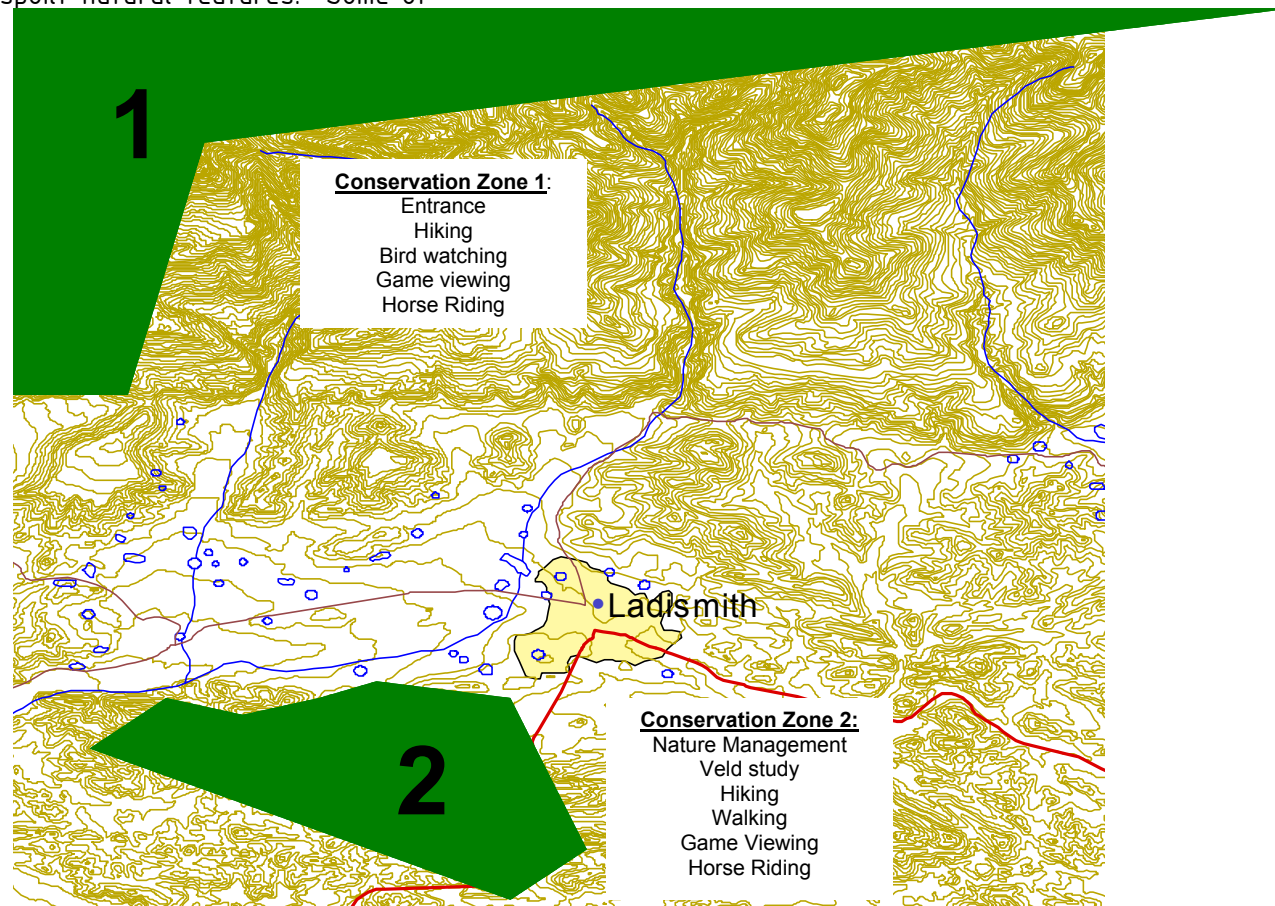


Figure 32: Conservational Zones in the KTN



## 5.5.2 CULTURE

These activities are linked to the way in which human utilize the environment and relevant historical structures. The successes of these activities are therefore dependent on the integration of these structures such as fountains and homesteads.

They are listed below:

- ❑ Formal learning
- ❑ Informal learning
- ❑ Educational trips

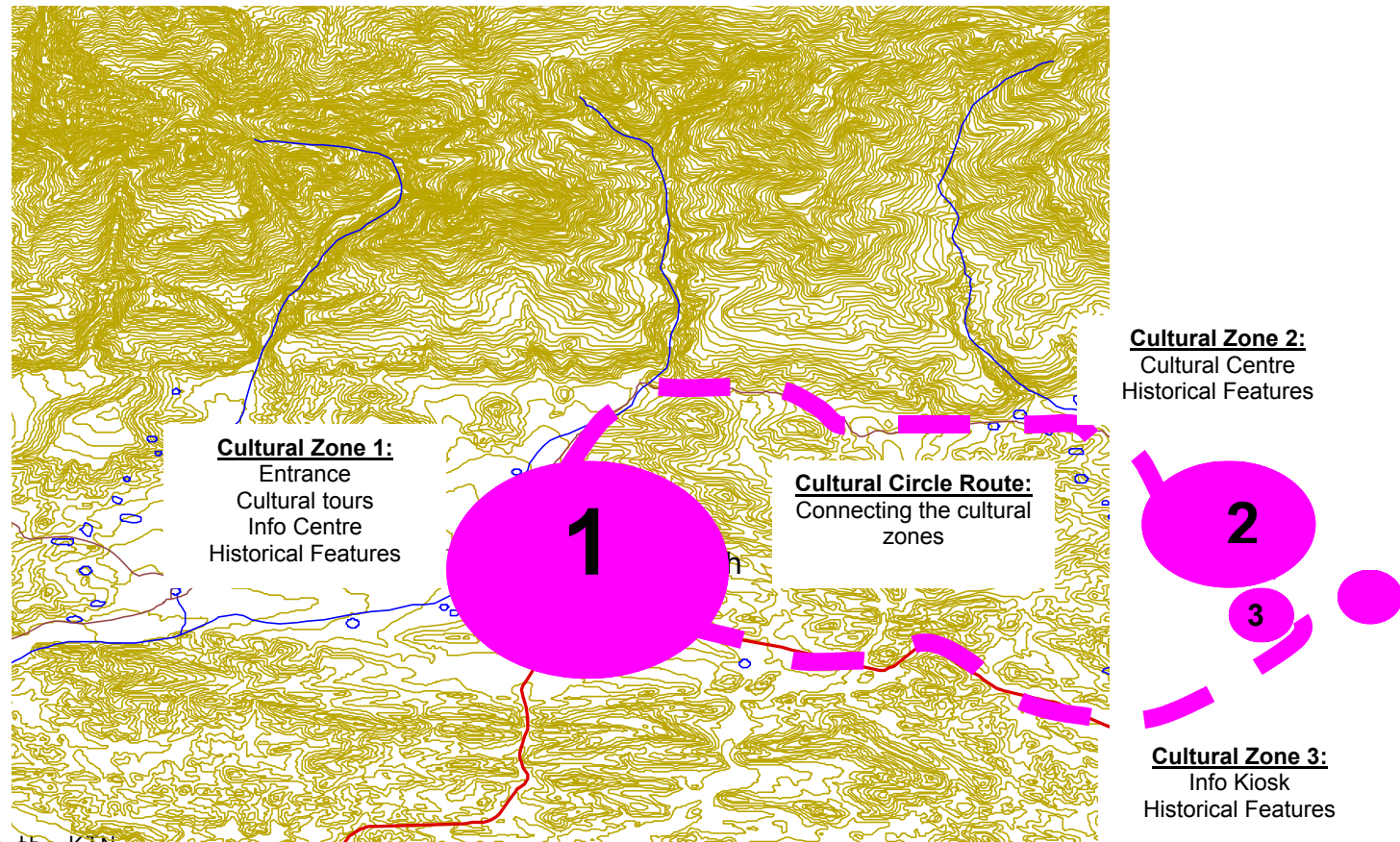


Figure 33: Cultural Zones in the KTN

### 5.5.3 RECREATION

Recreation activities can be either passive activities linked to the environmental features or active activities linked to both open space and facilities. Their impact can be fairly high and therefore management input to deal with these impacts must be high.

These activities are listed as follows:

- Hiking
- Walking
- Camping
- Picnic
- Braai
- Cycling
- Accommodation
- Canoeing
- Swimming
- Horse riding
- Climbing
- Scenic drives
- Viewing

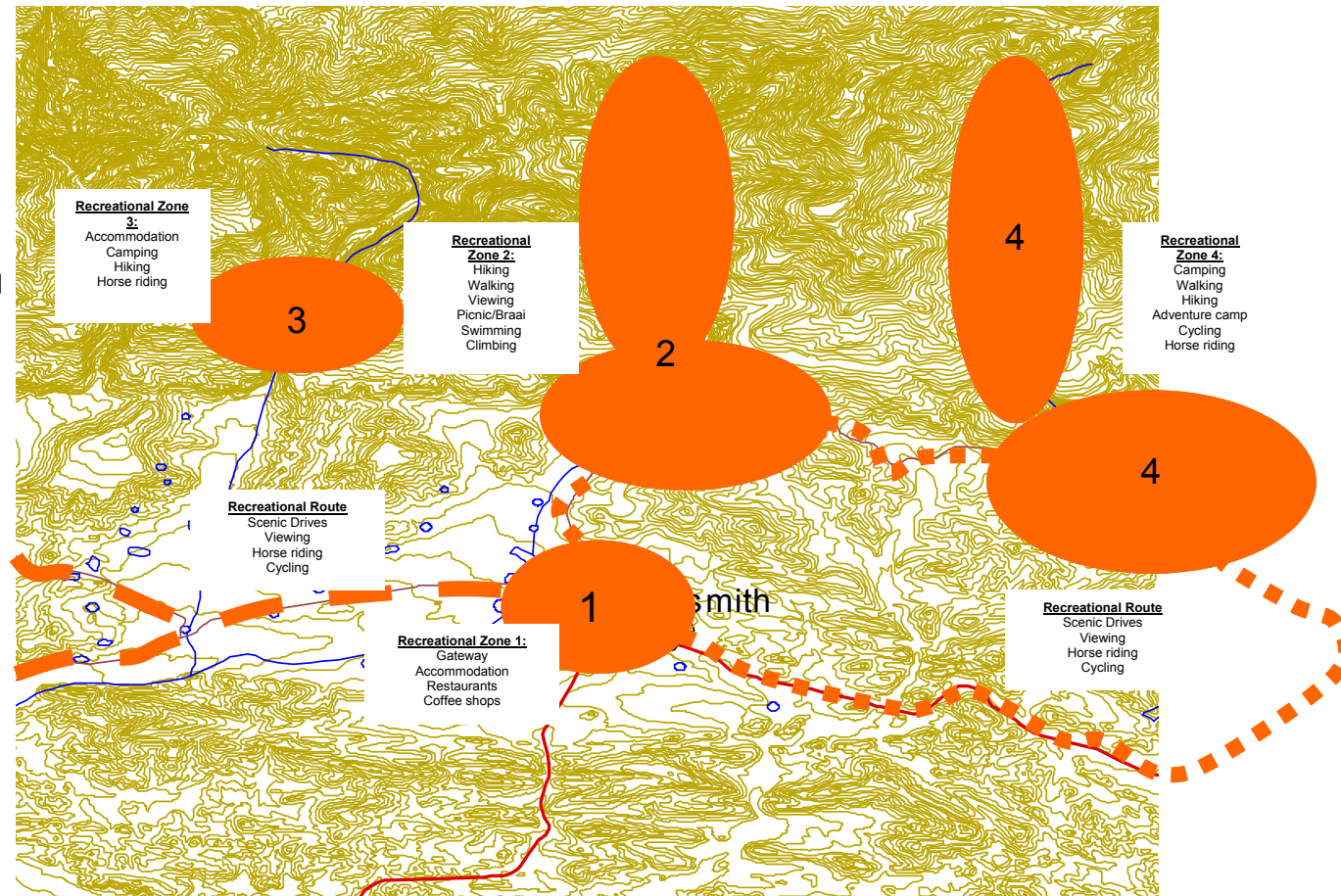


Figure 34: Recreation Zones in the KTN

## 5.6 SITE ANALYSIS

### 5.6.1 ZONE 2:

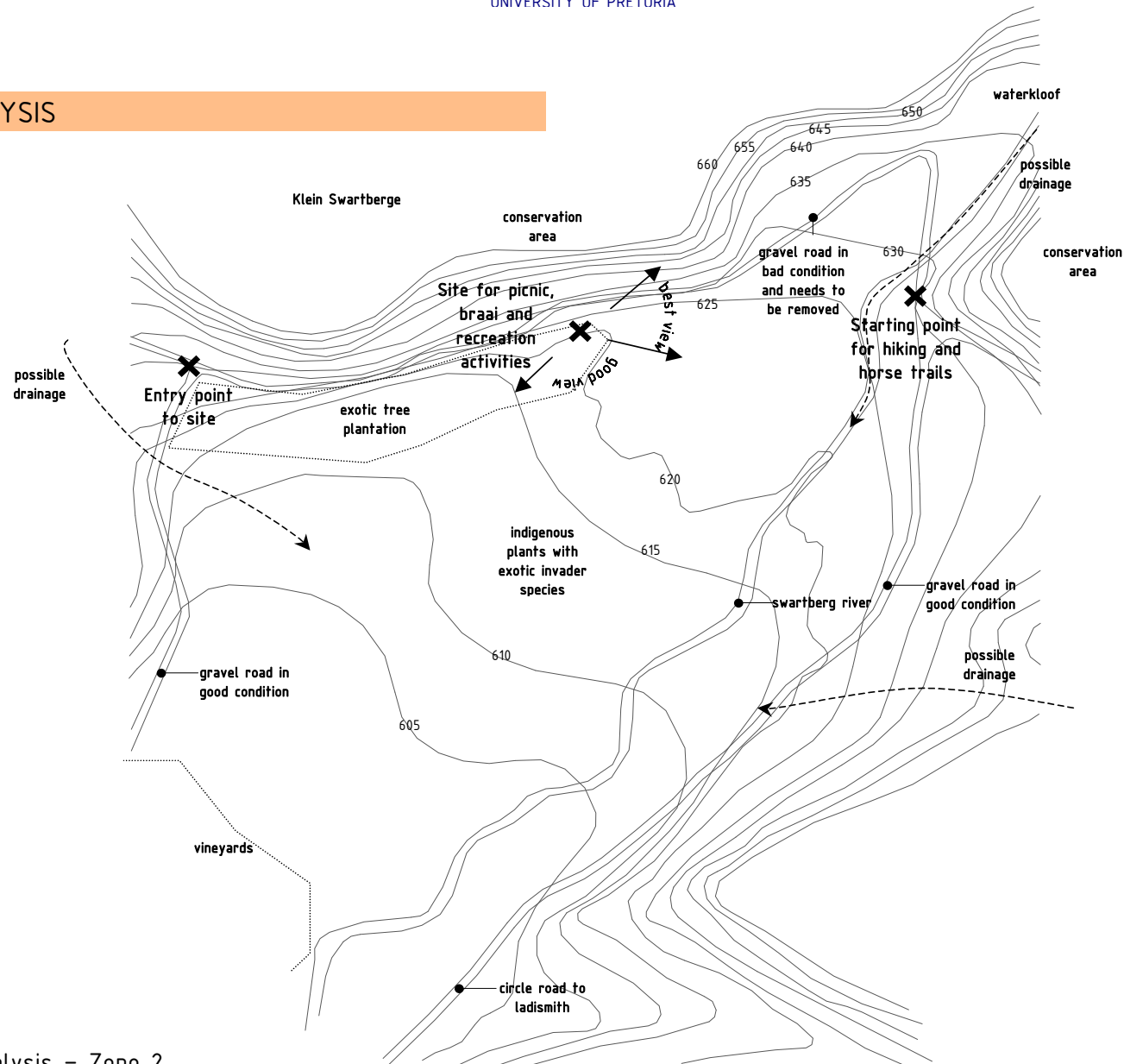


Figure 35: Site Analysis – Zone 2

5.6.2 ZONE 3:

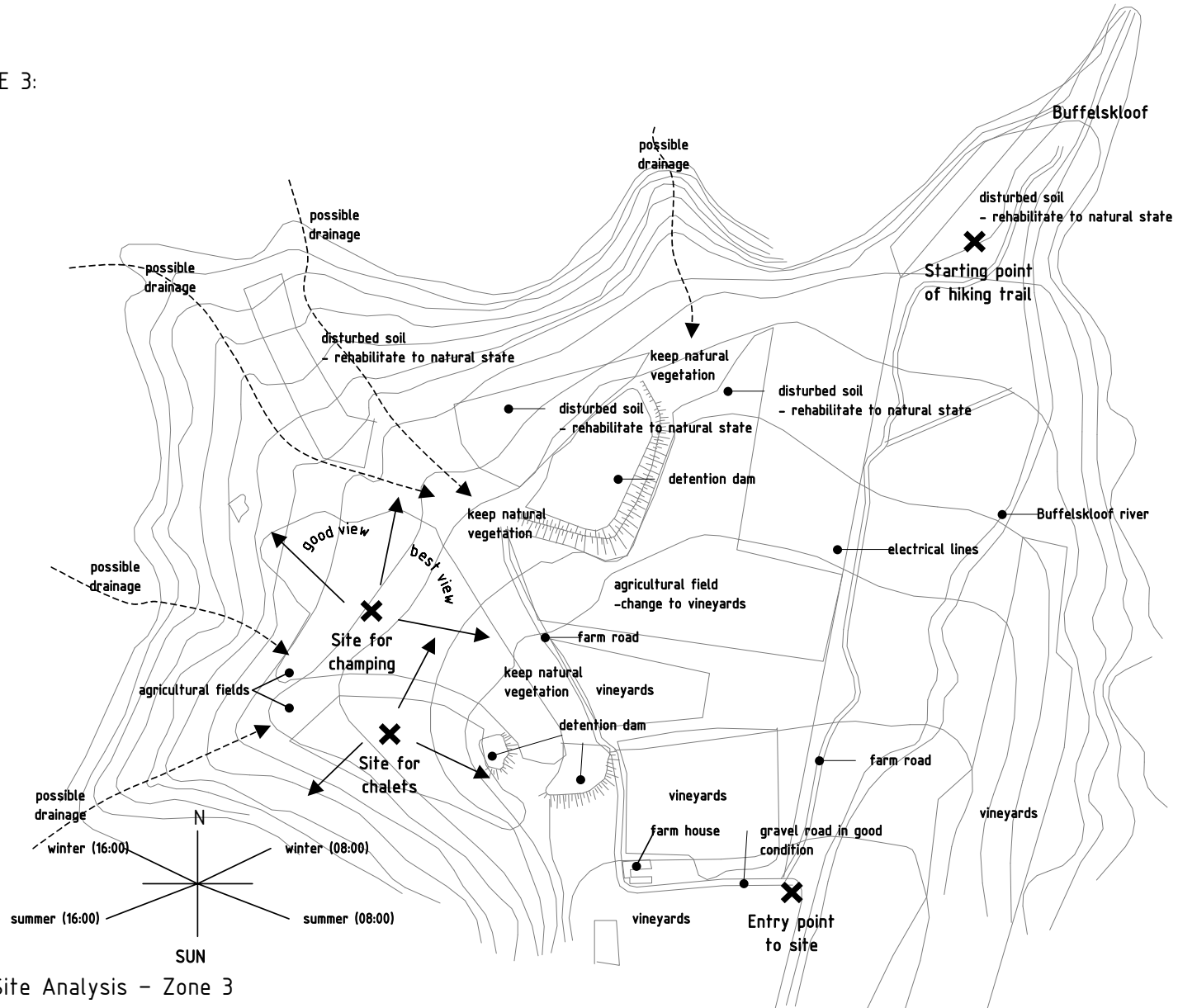


Figure 36: Site Analysis – Zone 3

5.6.3 ZONE 3:

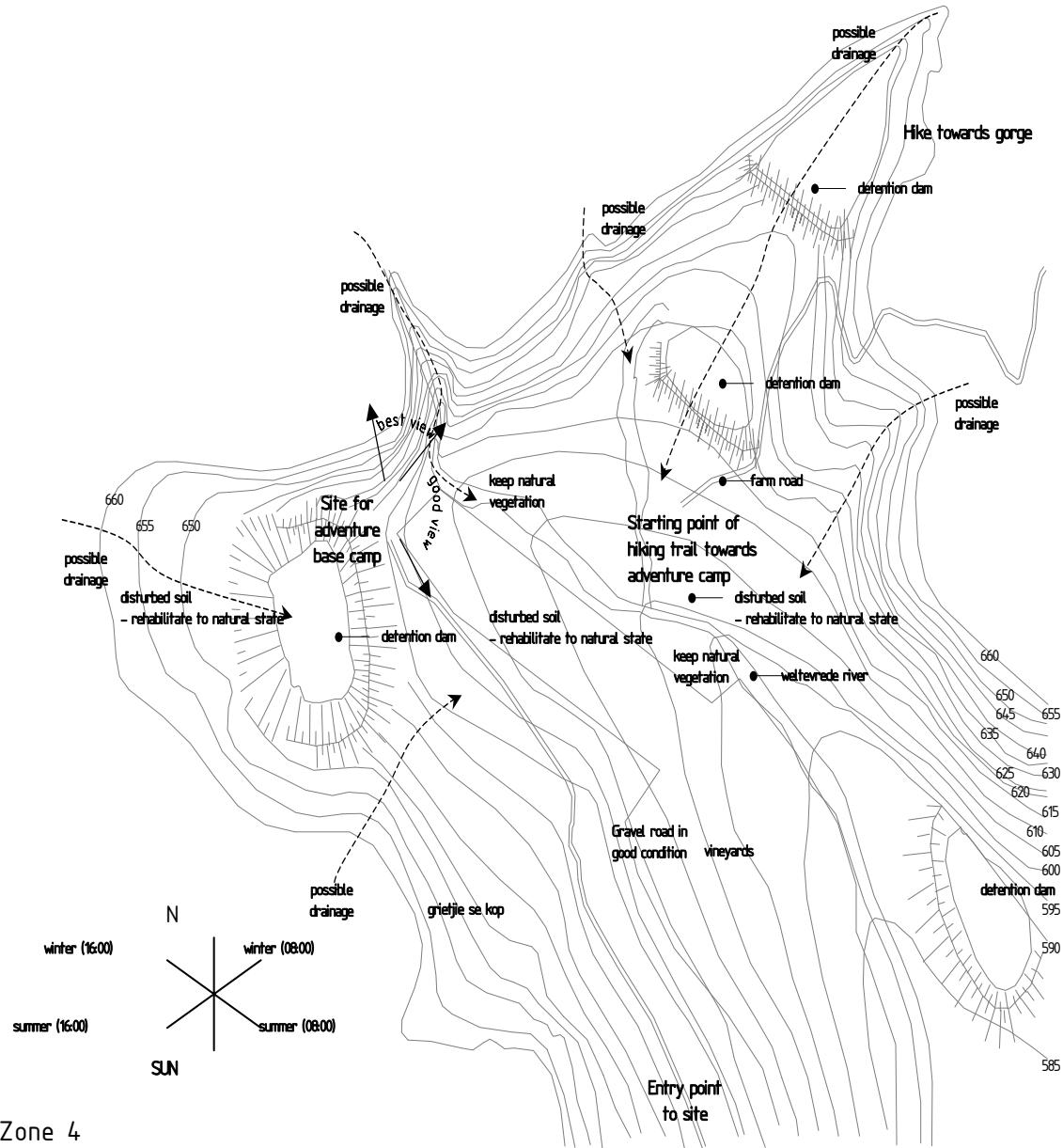


Figure 37: Site Analysis – Zone 4

## 5.7 SENSITIVITY ANALYSIS

The three zones of the Kannaland Tourism Node is analysed and divided into six sensitivity areas. These areas are then analysed according to the extent of degradation, ecological sensitivity, and aesthetic sensitivity. Table 9 provide the description of each area.

Table 9: Sensitivity analysis area descriptions

AREA	DESCRIPTION	EXTENT OF DEGRADATION	ECOLOGICAL SENSITIVITY	AESTHETIC SENSITIVITY
1	Modified sites	Severe	Very low	Low to medium
2	Former agricultural fields	High	Low	Low
3	Modified natural remnants	Medium	Low to medium	Low to medium
4	Watercourses	High to medium	Medium to high	Low to high
5	Natural vegetations	Medium to low	Medium to high	High
6	Continuous tracts of Fynbos	Medium to low	High	High

5.7.1 ZONE 2

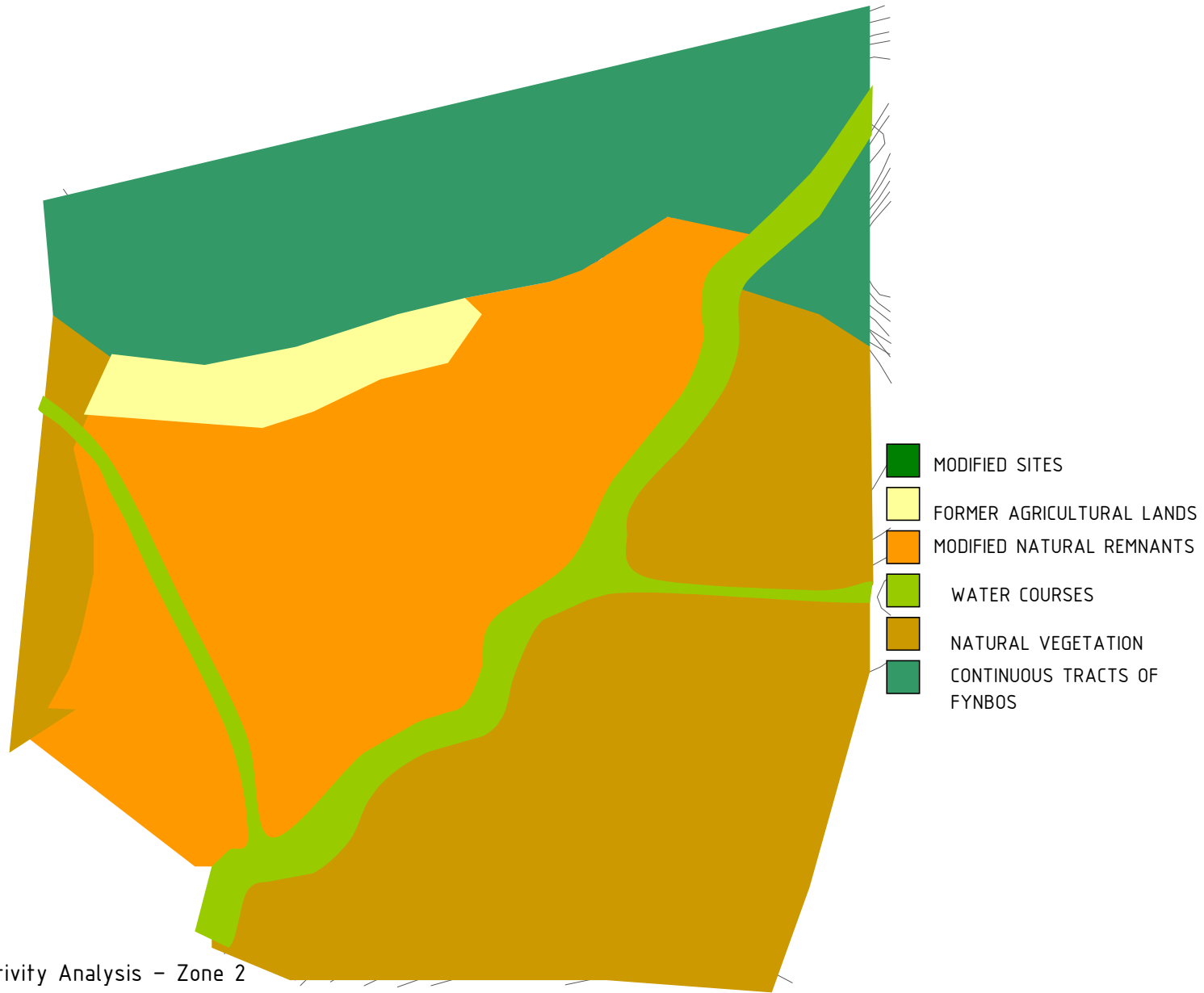


Figure 38: Sensitivity Analysis – Zone 2

5.7.2 ZONE 3

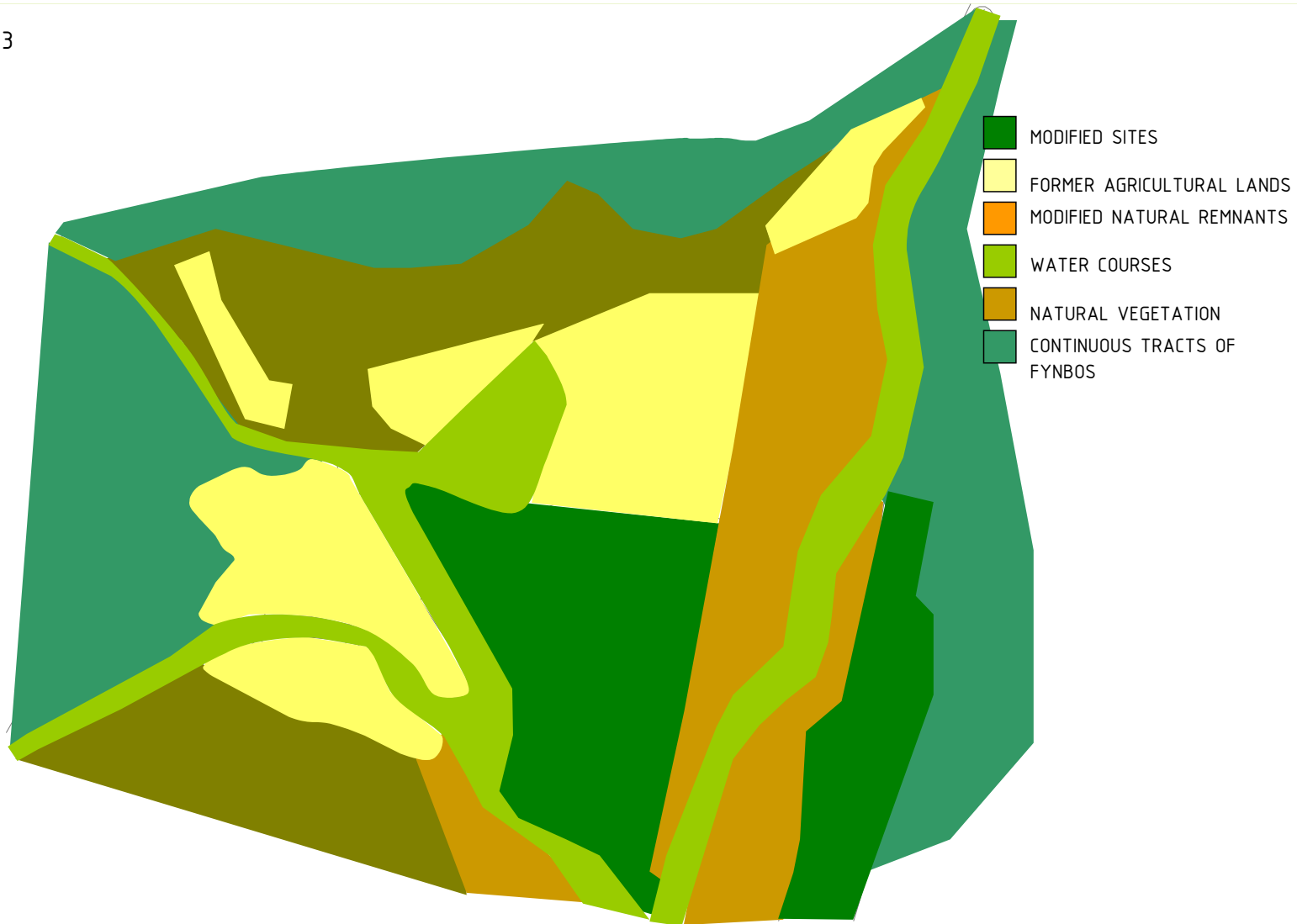


Figure 39: Sensitivity Analysis – Zone 3



5.7.3 ZONE 4



Figure 40: Sensitivity Analysis – Zone 4