



HABITAT INTEGRITY

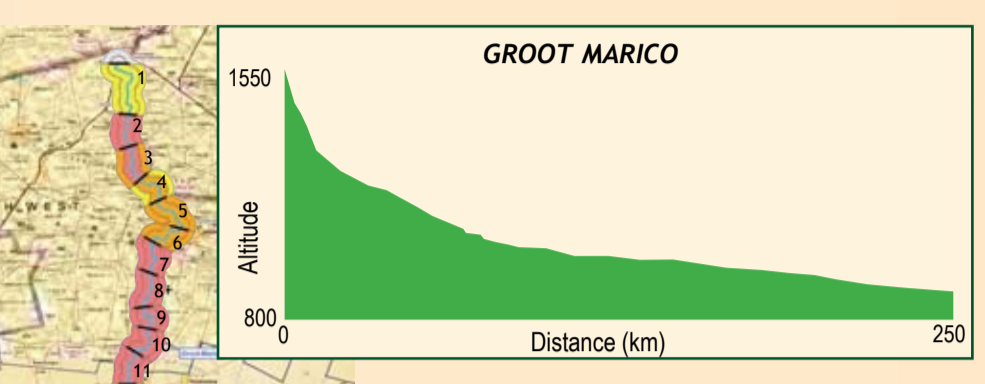
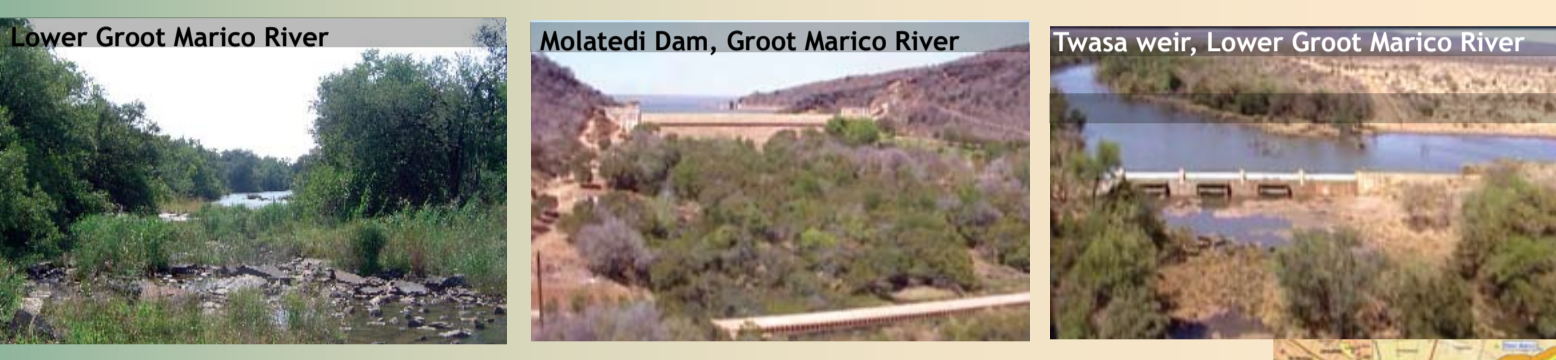
# Habitat Integrity of Selected Rivers of the North West Province

### Habitat Integrity Results: Groot Marico River

Table with 3 rows (Riparian, Instream, Riparian) and 50 columns of habitat integrity ratings (A-F).

In general, the tributaries in the Upper Groot Marico catchment (Draaifontein, Kaaaloo se Loop, Rietspuit, Ribbokfontein se Loop, Van Straatenstvl, and Sterkstrook), consist of natural wetlands in the upper reaches, while the lower reaches flow over the plateau and are largely impacted by agricultural activities as well as invasive alien vegetation.

The Lower Groot Marico is dominated by large dams (Marico Bosveld and Molatedi Dam) that provide for domestic and agricultural water supply. This results in severe flow modifications that impact on both the instream and riparian zones.

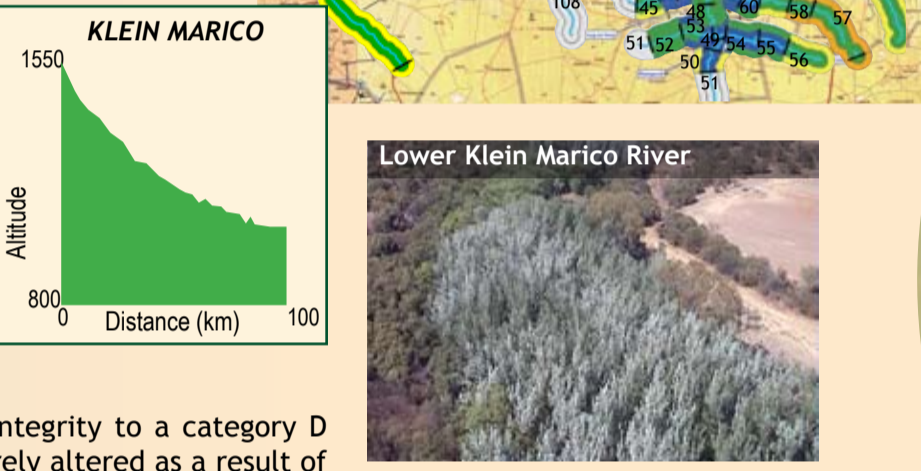


### Habitat Integrity Results: Klein Marico River

Table with 3 rows (Riparian, Instream, Riparian) and 15 columns of habitat integrity ratings (A-F).

Habitat integrity in the upper Klein Marico River is predominantly impacted by alien vegetation in the riparian zone and agricultural activities. River channel modification by dense stands of white poplar trees adds to the largely modified habitat.

The Klein Maricoport Dam contributes to a deterioration of the habitat integrity to a category D downstream of the dam. The lower section of the Klein Marico River is severely altered as a result of the abstraction of water from Kromellenboog Dam.



### Habitat Integrity Results: Molopo River

Table with 3 rows (Riparian, Instream, Riparian) and 16 columns of habitat integrity ratings (A-F).

The integrity of the Molopo River varies from a largely natural (B category) upstream from Mafikeng to a low D and E category downstream of Mafikeng. The exception is the rehabilitated wetland areas in the upper river and in the Mafikeng Nature Reserve where wetland rehabilitation has taken place.

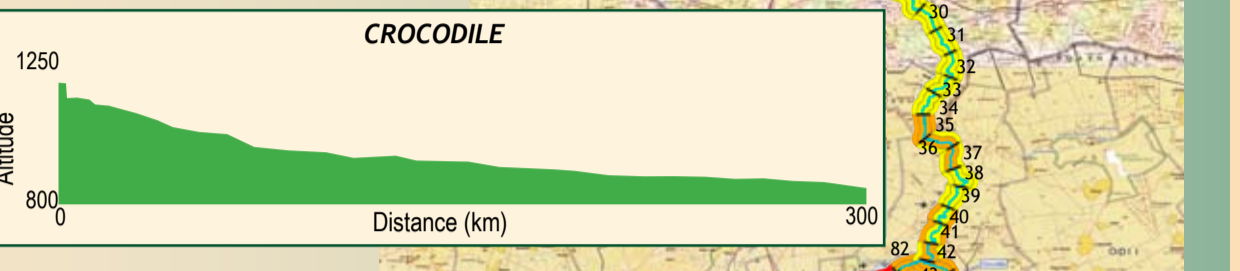


### Habitat Integrity Results: Crocodile River

Table with 3 rows (Riparian, Instream, Riparian) and 50 columns of habitat integrity ratings (A-F).

The Crocodile River system is heavily utilised and the impacts are the result of the major impoundments of Hartbeespoort and Roodekopjes Dams, which alter the flow variability and volumes downstream resulting in bed and channel modification.

Heavy alien plant infestations in the riparian zone and vegetation removal in the intensive irrigated areas contributes to the deterioration of habitat integrity. The habitat integrity gradually improves in the downstream direction in the Crocodile system.

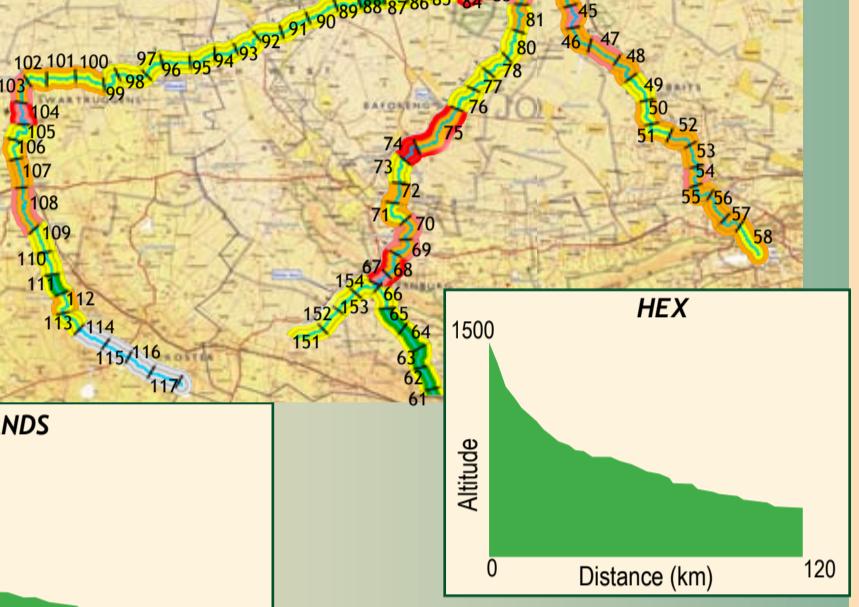


### Habitat Integrity Results: Hex River

Table with 3 rows (Riparian, Instream, Riparian) and 15 columns of habitat integrity ratings (A-F).

The Hex River is subjected to various impacts, mostly relating to the impoundments and the modification of flows, with water abstraction and agricultural and mining activities adding to the increased turbidity and erosion problems.

Below Rustenburg heavy infestations of alien vegetation and flow modification as a result of the Olifantsnek Dam are the major impacts on the river. Intensive agricultural activities in segments 69 and 70 resulted in vegetation removal and impacts on water quality.

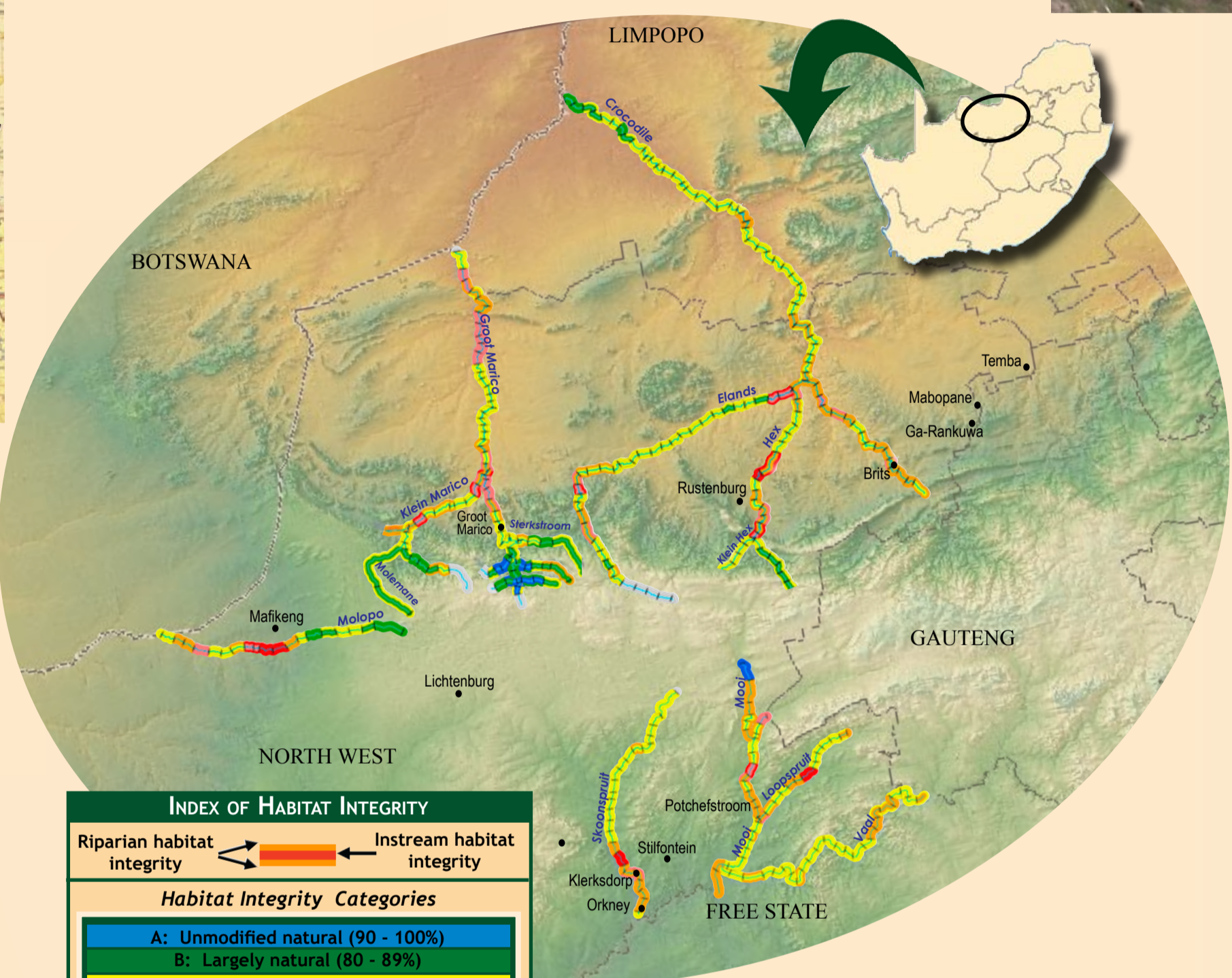
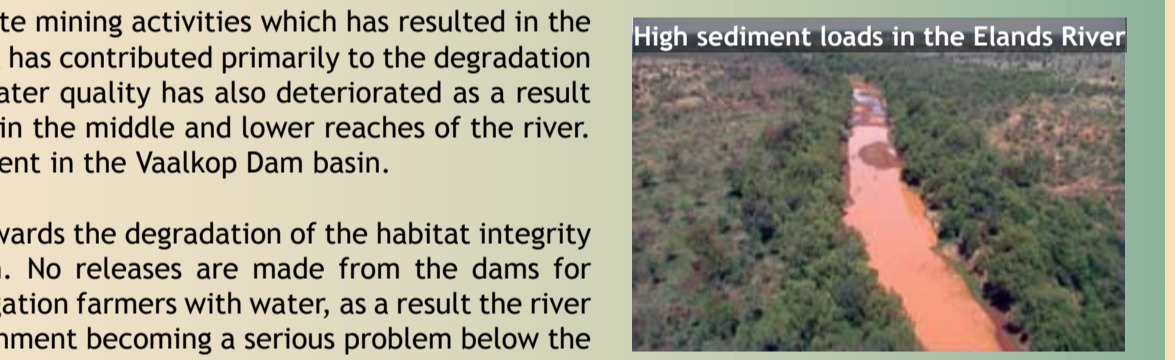
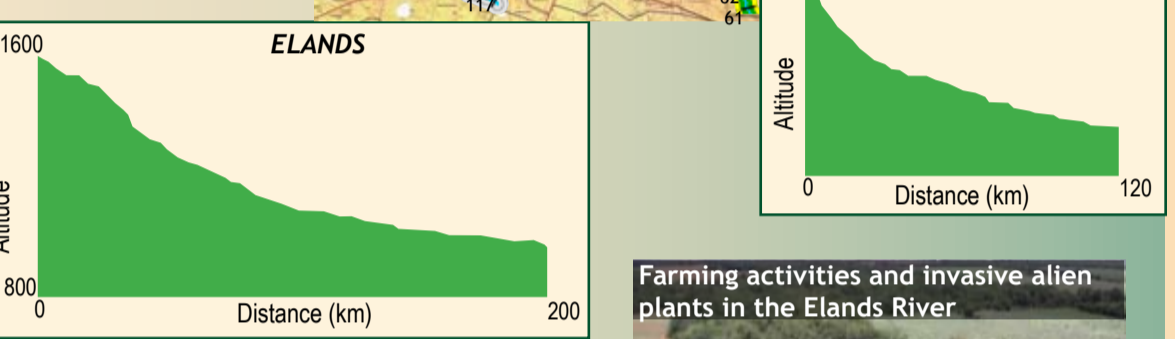


### Habitat Integrity Results: Elands River

Table with 3 rows (Riparian, Instream, Riparian) and 15 columns of habitat integrity ratings (A-F).

The upper reaches of the catchment is dominated by slate mining activities which has resulted in the dumping of slate by-products into the river. The dumping has contributed primarily to the degradation of the integrity of the riparian zone of the river.

The Swartruggens and Lindleyspoort Dams contribute towards the degradation of the habitat integrity as a result of flow modification and water abstraction. No releases are made from the dams for ecological purposes.



INDEX OF HABITAT INTEGRITY legend with color-coded categories (A-F) and a diagram of riparian vs instream habitat integrity.



### Habitat Integrity Results: Schoonspruit River

Table with 3 rows (Riparian, Instream, Riparian) and 15 columns of habitat integrity ratings (A-F).

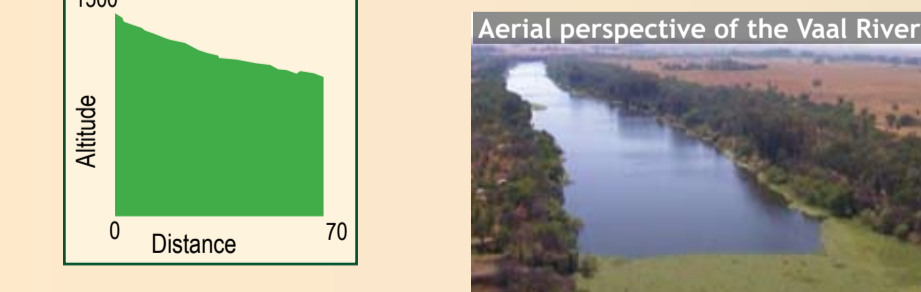
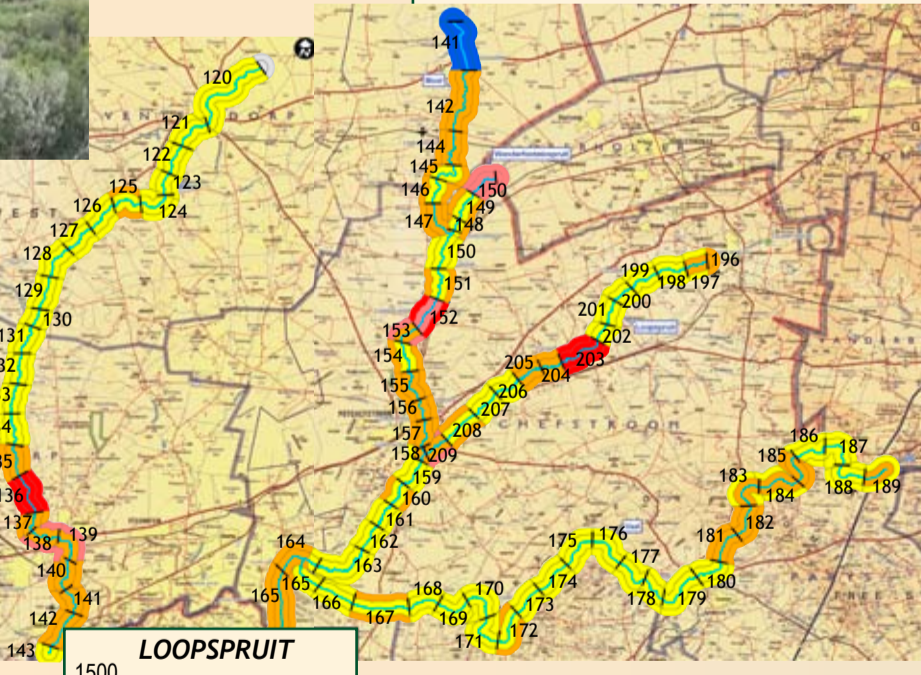
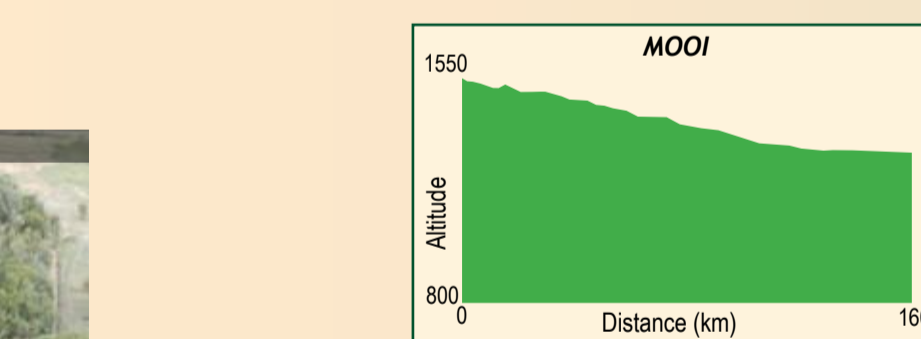
The Schoonspruit can be divided into distinct reaches depending on the riparian zone vegetation and the type of ecosystem dominating the river. The upper reaches are characterised by wetland habitat.

### Habitat Integrity Results: Vaal River

Table with 3 rows (Riparian, Instream, Riparian) and 15 columns of habitat integrity ratings (A-F).

The habitat integrity for the sections of the Vaal River assessed is mostly in a moderately modified state (C category). The only aspects that reduce habitat integrity to a largely modified state are the degree of inundation and riparian zone impacts.

A substantial number of new housing developments are taking place in the vicinity of Parys with specific impacts in terms of vegetation. This resulted in the variation in the habitat integrity that can be attributed to the clearing of vegetation and the associated localised impacts caused by sediment deposition in the river.



### Habitat Integrity Results: Mooi River

Table with 3 rows (Riparian, Instream, Riparian) and 15 columns of habitat integrity ratings (A-F).

In general the habitat integrity in the Mooi River is in a largely or moderately modified state. At Kerkskraal and Boskop dams the river has been extensively modified to an unacceptable state (E category).

The Wonderfontein receives mining processing water that deteriorates the water quality. Peat mining in the tributary that is formed from the Gerhard Minnebron dolomitic eye has reduced the habitat integrity in this part of the catchment.

### Habitat Integrity Results: Loopspruit River

Table with 3 rows (Riparian, Instream, Riparian) and 10 columns of habitat integrity ratings (A-F).

The habitat integrity of the Loopspruit is predominantly in a moderately to largely modified state. Major impacts are mining activities and urban activities at Fochville, as well as the discharge of treated sewage into the upper reaches of the river.

## HABITAT INTEGRITY ASSESSMENT PROCEDURE

Habitat integrity refers to the maintenance of a balanced, integrated composition of physico-chemical and habitat characteristics (temporally and spatially) that are comparable to the natural riverine habitat characteristics. The habitat integrity status for a river provides the template for a certain level of biotic integrity to be realised.

Habitat integrity methods were used in the collation and interpretation of data, as well as the final assessment (for further information see Kleynhans & Engelbrecht, 1994). Separate assessments of the instream and riparian habitat integrities are undertaken according to a number of key criteria (Table 1). The observed habitat condition in terms of these criteria is compared to a perceived unperturbed conditions to estimate the change in habitat integrity.

Table 1: Weights and criteria used in the instream and riparian zone habitat integrity assessment

Table with 3 columns: Instream Criteria, Weight, and Score. Lists factors like water abstraction, flow modification, bed modification, etc.

Table 2: Descriptive classes for assessing habitat integrity modifications

Table with 3 columns: Impact Class, Description, and Score. Lists impact levels from None to Critical.