

BARBERSPAN: RAMSAR DATA

1. COUNTRY

South Africa

2. DATE OF COMPILATION

1992-08-19 (18 March 1994)

3. REFERENCE NUMBER

1ZA002

4. COMPILERS

4.1 Name: D.R. Swart, G.I. Cowan

4.2 Address:

4.3 Telephone number:

4.4 Fax number:

5. NAME OF WETLAND

Barberspan

6. DATE OF RAMSAR DESIGNATION

12 March 1975

7. GEOGRAPHICAL CO-ORDINATES

26° 35'S 25° 35'E

8. GENERAL LOCATION

The Barberspan nature reserve lies close to the western border of the Transvaal, 17 kilometer north-east of Delareyville.

9. AREA (ha)

The reserve is 3118 ha in extent, of which about 2 000 ha is water. The pan itself is about 600 m wide and 1 550 m long.

10. WETLAND TYPE

Code: M, O and S.

Perennial freshwater lake.

Permanent river, stream, creek.

Permanent freshwater pools.

11. ALTITUDE
(Average or maximum and minimum)

Between 1 345m and 1 360m above sea level.

12. OVERVIEW OF SITE
(Thumbnail sketch in 2 - 3 sentences)

The reserve is 3118 ha in extent, of which about 2 000 ha is water. The pan is connected with the Harts River via a channel and is the largest of a series of depressions along this channel. The pan itself is about 600m wide and 1 550m long.

It is a natural, shallow, alkaline lake which is perennial. Other pans in the vicinity are non-perennial. It is one of the few permanent natural waterbodies on the western highveld and provides food and shelter during the dry months for large numbers of waterfowl. Migrating aquatic species use the pan as an important stopover.

Almost 300 species of birds have been recorded here, about one-fifth being migrants. A research station was established during 1952 for the ringing and study of waterfowl but is no longer operational. Approximately 40 000 birds of 190 species were ringed annually for study of their distribution and migration.

The pan is also a popular angling resort and recreational area in the Western Transvaal.

13. PHYSICAL FEATURES

13.1 Geology and geomorphology

Barberspan is the largest of a series of pans on the fossil bed of the Harts River. The reserve is underlain by amygdaloidal lava of the Ventersdorp System (age 2 100 million years). This is covered by surface limestone (age 100 million years) and classified as vlei or pan limestone according to origin. The quality varies from pure limestone to calcrete. It is hard and massive on the surface but softer and granular beneath the crust.

There are no known economic deposits of any minerals.

The area is generally gently undulating or very flat grassy plains. Hills seldom rising more than 130m above the surrounding flats.

13.2 Origins

It is a natural pan and is the largest of a series of pans on the fossil bed of the Harts River.

13.3 Hydrology

No major rivers and streams are present in the area. The main source feeding the pan being the Harts River. The pan is connected with the Harts River via a channel. The pan itself is a natural, shallow, alkaline lake which is perennial. Other pans in the vicinity are non-perennial.

Barberspan lies 9m lower than the Harts River. The water of the river fills the pan. During floods the river overflows its banks and not all the water enters the pan. The immediate catchment of the pan is 39 km². The inflow from this source is a fraction of that from the Harts.

13.4 Soil type and chemistry

Soils are shallow, alkaline and calcereous with sandy patches in certain areas. Mispah forms predominate in the reserve, while Katspruit forms are found near the water (Milstein, 1975).

13.5 Water quality

The water is reasonably clear with a marked increase in clarity in winter. The pH averages 9,40 over a range of 8,2 to 9,8. Surface temperatures vary from 15,0 oC to 17,2oC in June and from 24,5oC to 31,0oC in December.

13.6 Depth, fluctuations and permanence

The depth varies from 5m to 9,5m flooding an area of 1 000 ha to 1 700ha. The storage capacity varies according to depth from 33 000m³ X 10 to 96 000m³ X 10.

13.7 Tidal variations

Not applicable.

13.8 Catchment area

The immediate catchment of the pan is 39 km² with a runoff of only 77 610m³ per year, while an average flow of over 60 times as much reaches it annually from the Harts River.

13.9 Downstream area

See overview of site.

13.10 Climate

Situated in the summer rainfall region the pan and its catchments receive their rains during the hot summer months and experience cool dry winters. The rainfall over the entire catchment averages 557mm/annum. The annual average temperature range varies between 9oC (minimum) to 27oC (maximum).

According to the Köppen climate classification Barberspan's climate can be coded as BSK referring to an arid zone with an average temperature below 18oC.

14. ECOLOGICAL FEATURES

(Main habitat and vegetation types)

The vegetation falls within the Dry Cymbopogon-Themeda veld as classified by Acocks (1953) of which very little remains. Relatively few naturally occurring shrubs and trees are found on the reserve. At present 60 % of the reserve is made up by old lands in various stages of succession (Knesl, pers comm).

15. LAND TENURE

(Ownership of site and surrounding areas)

The whole of the pan is protected as a Provincial nature reserve proclaimed in 1954 and is therefore State controlled.

The surrounding area is an agricultural area controlled by the farming community.

16. CONSERVATION MEASURES TAKEN.

16.1 Legal status

The above-mentioned 3118 ha forms a Provincial reserve.

16.2 Management category

16.3 Management practises

A provisional management plan for the Provincial nature reserve has been drafted and is currently being implemented.

17. CONSERVATION MEASURES PROPOSED

It was proposed that funds be raised to purchase the farms compromising the nearby Leeupan which is a natural extension of Barberspan. This is however unlikely. The possibility of a conservancy should be investigated. However, a major problem is the farmers negative attitude towards conservation as much of the land forming the reserve was in fact expropriated from them.

The catchment should also be protected against further misuse. The floodplain on the southern side of the pan should also be acquired.

18. LAND USE

(Human population, principle human activities and main forms of land use).

A Provincial nature reserves has been proclaimed. The main recreational activity being angling and birdwatching. The surrounding land use is various forms of agricultural activities - cattle and maize farming being predominant.

19. DISTURBANCES AND THREATS, INCLUDING CHANGES IN LAND USE AND PROPOSED DEVELOPMENT PROJECTS

Threats are mainly external with pressure on the system arising from agricultural activities. The main threat being agricultural pollutants such as fertilisers, pesticides and herbicides.

Littering by anglers is also a problem.

Quarrying occurred previously and should be prohibited in the future.

20. HYDROLOGICAL AND BIOPHYSICAL VALUES

Barberspan is a wetland of international biogeographical importance. It is a dynamic system. The pan with its catchments represents a perfect and complete ecosystem in which the components are dependent on each other to maintain the ecological balance.

Also see section on hydrology.

21. SOCIAL AND CULTURAL VALUES

Social and cultural values are extremely subjective concepts. The main value of the area lies in the pan itself. The conservation value of the site is perceived to be exceptionally high and may be of national and even subcontinental importance.

Signs of previous human occupation of the area have been discovered. Primitive implements made of lava dating mostly to the Early Stone age (50 000 years B.P.) and Middle Stone age (10 - 40 000 years B.P.) have been found in quarries and on pebble outcrops. As yet no major cultural historic or archaeological finds have been made. However, the remains of General Smuts house are present which may be of interest to some.

The area is used mainly for research on birds and angling. The pan is also a popular angling resort and recreational area in the Western Transvaal.

22. NOTEWORTHY FAUNA

Barberspan is a very important stopover site for waterfowl, with over 320 recorded species including Palearctic species, red knot *Calidris canutus* and black godwit *Limosa limosa*. Species present include all indigenous waterfowl species except the tropical dwarf goose *Nettapus auritus*. Barberspan is the only locality in South

Africa where the pintail *Anas acuta* has been recorded. Some waterfowl species breed in the wetland.

Several endangered mammal and bird species occur (see attached lists).

It is of extreme importance to wetland avifauna populations that the pan is conserved as there are large numbers of birds which are dependent on it for stopover, breeding and foraging purposes.

In addition to this, the pan already qualified as a wetland of international importance according to the Ramsar Convention of 1971 and was listed during 1975.

Barberspan is very important as a stopover site for waterfowl. Species present include all indigenous waterfowl species, except the tropical dwarf goose, *Nettapus auritus*. Some of the waterfowl species breed in the wetland.

Rare mammals, such as the South African hedgehog (*Erinaceus frontalis*) and striped weasel (*Poecilogale albinucha*) occur on the reserve. Various threatened bird species also occur. Black wildebeest amongst other larger mammals, also occurs.

A total of 347 bird species have been recorded. Seven of these are classified as endangered. Two endangered mammal species occurs.

Eleven fish, nine amphibian and 28 reptile species were recorded.

A detailed description of the non-avian fauna of the reserve is attached.

23. NOTEWORTHY FLORA

The vegetation of Barberspan falls within the Dry Cymbopogon-Themeda veld as classified by Acocks (Veld Type 50). Relatively few naturally occurring trees and shrubs are found on the reserve. The most common are *Acacia karroo*, *Rhus lancea*, *R. pyroides* and *Diospyros lycioides*. Common grasses are *Themeda triandra*, *Cymbopogon plurinodes*, *Eragrostis lehmanniana*, *E. superba*, *Heteropogon contortus* and *Lippia scaberima*. Aquatic vegetation is dominated by *Potamogeton pectinatus*.

The pH of the water ranges between 9,2 and 10,4. This hampers the growth of higher vegetation which is usually present in the littoral zone of fresh waters. The vegetation of this zone is predominantly sedges (*Juncus* and *Cyperus* spp).

Phyto- and zooplankton are abundant.

A total of 226 plant species occurs on the reserve. A plant list is attached.

The vegetation of the littoral zone is predominantly sedge. In certain areas few or no sedges are found, being replaced by grasses which in places grow to the edge of or in the water.

24. SCIENTIFIC RESEARCH FACILITIES

Research facilities were constructed but are no longer used. Barberspan was one of the most important bird ringing stations in South Africa. Birds were ringed in order to gather information on migration, age, etc. The aquatic bird species have also been studied in depth.

The research station was also used for studies on various fresh water organisms. The facilities were readily available for approved research projects. Currently no major projects are being conducted and the station is mainly used for monitoring ???.

A large number of publications arose from this research. Some of these are listed in the attached appendix.

25. CONSERVATION EDUCATION

Currently no formal activities are taking place. However, strategies involving the surrounding communities including university, technikon and school groups as well as the farmers should be developed.

26. RECREATION AND TOURISM

A camping and picnicking site, a trail and bird hides have been established on the nature reserve. The southern section of the pan is zoned for angling purposes.

The pan is a popular angling resort and recreational area for the Western Transvaal.

27. MANAGEMENT AUTHORITY

Chief Directorate: Nature and Environmental
Conservation.
Private Bag X209
PRETORIA
0001
TRANSVAAL
RSA

28. JURISDICTION

Applicable legislation:

Nature Conservation Ordinance, Ordinance 12 of 1983
Environmental Conservation Act, 1989
Water Act, 1956

29. REFERENCES

The principal reference from which most of the above were taken, is:

Milstein, P le S. 1975. The Biology of of Barberspan, with special reference to the Avifauna. The Ostrich, Supplement no 10. : 1 -74.

A further list of references is attached for your information.

FURTHER REFERENCES:

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Note: It was impossible to obtain a comprehensive list of references. Some of the above references are also not complete. For this, an apology is extended.
See attached list.

30. REASONS FOR INCLUSION.

The pan is already a designated site and was listed during 1975.

The pan qualifies to be listed as a wetland of international importance according to the Ramsar Convention of 1971. In order to be listed as such, wetlands need to comply with certain specifications:

- It is an example of a specific type of wetland, i.e. a grass pan, which is rare or unusual in the biogeographical area.
- It maintains a large number of threatened plants and/or animals.
- It is of special value for the maintenance of the ecological diversity of the region.
- It is of special value as habitat to plants and animals in a critical part of their life cycles.
- It maintains large numbers of individuals of specific groups of water birds which indicate the value, productivity and diversity of the wetland.

Barberspan complies with all these requirements.

The reasons for listing corresponds to:

- 1 (c)
- 2 (a)
- 3 (b)

31. OUTLINE MAP OF SITE.

(To be appended)

APPENDIX 1. NON-AVIAN FAUNA OF BARBERSPAN.

Large Mammals:

Springbok - 12
Black Wildebeest - 12
Zebra - 12

APPENDIX 2. AVIAN FAUNA OF BARBERSPAN.

APPENDIX 3. FLORA OF BARBERSPAN.

Summary

BARBERSPAN

Location

26° 35' S 25° 35' E

The Barberspan nature reserve lies close to the western border of the Transvaal, 17 km north-east of Delareyville.

Area

The reserve is 3 118 ha in extent, of which about 2 000 ha is water. The pan itself is about 600 m wide and 1550 m long.

Degree of protection

The area was proclaimed as a Transvaal Provincial reserve in 1954 and is therefore State controlled. The surrounding area is an agricultural area controlled by the farming community.

Site Description

Barberspan is the largest of a series of pans in the fossil bed of the Hart's River. It is a natural, shallow, alkaline, perennial pan which is connected to the Hart's River via a channel. The pan is surrounded by gently undulating or very flat grassy plains.

The vegetation falls within the Dry Cymbopogon - Themeda veld (Acocks, 1953). Relatively few naturally occurring shrubs and trees are found in the reserve. The most common are *Acacia karroo*, *Rhus lancea*, *R. pyroides* and *Diospyros lycioides*. Common grasses are *Themeda triandra*, *Cymbopogon plurinodes*, *Eragrostis lehmanniana*, *E. superba*, *Heteropogon contortus* and *Lippia scaberima*. The littoral zone vegetation is predominantly sedges (*Juncus* and *Cyperus* spp). Aquatic vegetation is dominated by *Potamogeton pectinatus*.

Barberspan is very important as a stopover site for waterfowl. Species present include all indigenous waterfowl species, except the tropical dwarf goose, *Nottapus auritus*. Some of the waterfowl species breed in the wetland.

A total of 347 bird species have been recorded. Seven of these are classified as endangered. Two endangered mammal species, the South African hedgehog (*Erinaceus frontalis*) and striped weasel (*Poecilogale albinucha*), occur.

Eleven fish, nine amphibian and 28 reptile species were recorded.

International and National Importance

Barberspan is one of the few permanent waterbodies on the western highveld and provides food and shelter during the dry months for large numbers of waterfowl. Migrating aquatic species use the pan as an important stopover. Over 320 species have been recorded including Palearctic species, red knot *Calidris canutus* and black godwit *Limosa limosa*. It is the only locality in South Africa where pintail *Anas acuta* has been recorded. It is also an important breeding place for waterfowl species.

One of the most important bird ringing stations in South Africa is situated at Barberspan. Approximately 40 000 birds of 190 species are ringed annually for study of their distribution and migration.

Barberspan already qualified as a wetland of international importance according to the Ramsar Convention of 1971 and was listed during 1975. It is a wetland of international biogeographical importance as it is an example of a specific type of wetland, i.e. a grass pan, which is rare or unusual.