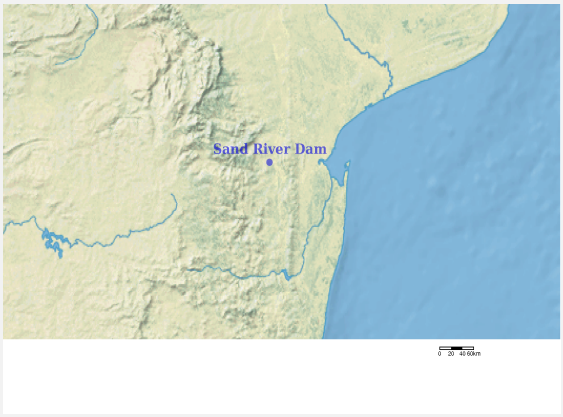
Ramsar Information Sheet

Published on 26 September 2016

Swaziland

Sand River Dam



Designation date	12 June 2013
Site number	2122
Coordinates	25°59'36"S 31°42'7"E
Area	764,00 ha

Color codes

Fields back-shaded in light blue relate to data and information required only for RIS updates.

Note that some fields concerning aspects of Part 3, the Ecological Character Description of the RIS (tinted in purple), are not expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a 'full' Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

1 - Summary

Summary

Sand River Dam was constructed in 1965 for irrigation of sugarcane fields in the Tshaneni-Mhlume area. This dam is situated within the IYSIS cattle ranch which is privately owned by Royal Swaziland Sugar Corporation (RSSC) and covers 20,016 ha. The dam is a major magnet for waterfowl and other waterbirds, particularly when water levels are low. Sand River Dam is a critical site for a number of threatened species. It supports the following threatened species, the Endangered Hooded Vulture (Necrosyrtes monachus) (IUCN, 2015) which has been seen a number of times within the Sand River Dam region. There are a number of other raptor species that are globally threatened or near-threatened that breed at Sand River Dam including: Bateleur (Terathopius ecaudatus), Crowned Eagle (Stephanoaetus coronatus) and African White-backed Vulture (Gyps africanus) (Monadjem & Garcelon, 2005; Monadjem & Rasmussen, 2008).
The lowveld of Swaziland is relatively arid with few naturally occurring wetlands other than riparian strips along rivers. The waterbird community of this region, therefore, relies heavily on a handful of artificially created wetlands. Sand River Dam is one such site, and plays an important role in maintaining waterbird abundance and diversity within the Swaziland lowveld region. This wetland regularly supports in excess of 20 waterbird species and regularly harbours more than 500 individual birds. This makes it the second most important wetland in the country in terms of waterbird abundance.
Tshaneni, Mhlume, Tabankulu, and Vuvulane irrigated areas fully rely on water derived from the IYSIS canal and Sand River Dam for both irrigation and domestic purposes. In addition, communities within the study area rely on hand pump systems (boreholes) that are semi-functional for domestic water. Such systems were installed either by the Rural Water Supply Branch or Japanese International Corporation Agency in cooperation with the local government (Sukati, 2004). Unfortunately in these communities, the water is very salty, such that its use for consumption purposes is almost impossible and its usage for irrigation would trigger salinization. The catchment of Sand River Dam is tiny and extends for no more than about 6 km to the west and south-west of the reservoir (and most of it lies within the IYSIS cattle ranch). The water within the reservoir is actually pumped from the nearby Komati River (and water from the catchment hardly affects water levels in the reservoir).

2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Compiler 1

Name: Ara Monadjem

Institution/agency: Department of Biological Sciences University of Swaziland, Kwaluseni Swaziland

Postal address: Ara Monadjem, Department of Biological Sciences
University of Swaziland, Kwaluseni
Swaziland

E-mail: ara@uniswa.sz

Phone: +26825184011

2.1.2 - Period of collection of data and information used to compile the RIS

From year: 2013

To year: 2014

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish): Sand River Dam

2.2 - Site location

2.2.1 - Defining the Site boundaries

b) Digital map/image
<1 file(s) uploaded>

2.2.2 - General location

a) In which large administrative region does the site lie? Lubombo district

b) What is the nearest town or population centre? Tshaneni

2.2.3 - For wetlands on national boundaries only

a) Does the wetland extend onto the territory of one or more other countries? Yes ○ No ◉

b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party? Yes ○ No ◉

2.2.4 - Area of the Site

Official area, in hectares (ha): 764

Area, in hectares (ha) as calculated from GIS boundaries: 764.26

2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
WWF Terrestrial Ecoregions	Granite Lowveld Savanna

3 - Why is the Site important?

3.1 - Ramsar Criteria and their justification

<no data available>

☑ Criterion 2 : Rare species and threatened ecological communities

☑ Criterion 3 : Biological diversity

Justification	The lowveld of Swaziland is relatively arid with few naturally occurring wetlands other than riparian strips along rivers. The waterbird community of this region, therefore, relies heavily on a handful of artificially created wetlands. Sand River Dam is one such site, and plays an important role in maintaining waterbird abundance and diversity within the Swaziland lowveld region. This wetland regularly supports in excess of 20 waterbird species and regularly harbours more than 500 individual birds. This makes it the second most important wetland in the country in terms of waterbird abundance.

3.2 - Plant species whose presence relates to the international importance of the site

Scientific name	Common name	Criterion 2	Criterion 3	Criterion 4	IUCN Red List	CITES Appendix I	Other status	Justification
Albuca fastigiata		☐	☑	☐		☐		
Aloe boylei		☐	☑	☐		☐		
Aristea torulosa		☐	☑	☐		☐		
Brunsvigia natalensis		☐	☑	☐		☐		
Cyrtanthus breviflorus		☐	☑	☐		☐		
Dierama medium		☐	☑	☐		☐		
Disperis tysonii		☐	☑	☐		☐		
Eulophia parvilabris		☐	☑	☐		☐		
Gladiolus papilio		☐	☑	☐		☐		
Habenaria cornuta		☐	☑	☐		☐		
Hesperantha lactea		☐	☑	☐		☐		
Hypoxis acuminata		☐	☑	☐		☐		
Hypoxis filiformis		☐	☑	☐		☐		
Hypoxis gerrardii		☐	☑	☐		☐		
Kniphofia multiflora		☐	☑	☐		☐		
Moraea marionae		☐	☑	☐		☐		
Moraea pubiflora		☐	☑	☐		☐		
Neobolusia tysonii		☐	☑	☐		☐		
Satyrium trinerve		☐	☑	☐		☐		

3.3 - Animal species whose presence relates to the international importance of the site

Phylum	Scientific name	Common name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7	8								
CHORDATA/ MAMMALIA	*Aonyx capensis*	African Clawless Otter	☐	☐	☐	☐	☑	☐	☐	☐				NT	☐	☐		
CHORDATA/ AMPHIBIA	*Cacosternum boettgeri*		☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		
CHORDATA/ ACTINOPTERYGII	*Clarias gariepinus*		☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		
CHORDATA/ AVES	*Gyps africanus*	White-backed Vulture	☑	☐	☐	☐	☐	☐	☐	☐				CR	☐	☐		
CHORDATA/ MAMMALIA	*Hydrictis maculicollis*	Spotted-necked Otter	☐	☐	☐	☐	☑	☐	☐	☐				NT	☐	☐		
CHORDATA/ ACTINOPTERYGII	*Labeo rosae*		☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		
CHORDATA/ REPTILIA	*Lycodonomorphus rufulus*		☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		
CHORDATA/ AVES	*Necrosyrtes monachus*	Hooded Vulture	☑	☐	☐	☐	☐	☐	☐	☐				CR	☐	☐		
CHORDATA/ ACTINOPTERYGII	*Oreochromis mossambicus*		☐	☐	☐	☐	☑	☐	☐	☐				NT	☐	☐		
ARTHROPODA/ MALACOSTRACA	*Potamonautes sidneyi*		☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		
CHORDATA/ AMPHIBIA	*Pyxicephalus adspersus*		☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		
CHORDATA/ AVES	*Stephanoaetus coronatus*	Crowned Eagle	☐	☐	☐	☐	☑	☐	☐	☐				NT	☐	☐		
CHORDATA/ AVES	*Terathopius ecaudatus*	Bateleur	☐	☐	☐	☐	☑	☐	☐	☐				NT	☐	☐		
CHORDATA/ ACTINOPTERYGII	*Tilapia rendalli*		☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		

Sand River Dam is a critical site for a number of threatened species. The following globally near-threatened fish species is known to occur within the dam: Mozambique Tilapia (Oreochromis mossambicus). Furthermore, the Endangered Hooded Vulture (Necrosyrtes monachus) (IUCN, 2015) has been seen a number of times within the Sand River Dam region, although its breeding quarters have not yet been located and it is not known if it breeds within the area. There are a number of other raptor species that are globally threatened or near-threatened that breed at Sand River Dam including: Bateleur (Terathopius ecaudatus), Crowned Eagle (Stephanoaetus coronatus) and African White-backed Vulture (Gyps africanus) (Monadjem & Garcelon, 2005; Monadjem & Rasmussen, 2008).

Common fish species that have been harvested commercially from the dam include various species of tilapias (including Oreochromis mossambicus and Tilapia rendalli), yellowfish (Labeo rosae) and catfish (Clarias gariepinus) (Bills et al. 2004). These species and others are also targeted for sport fishing (angling).

3.4 - Ecological communities whose presence relates to the international importance of the site

<no data available>

4 - What is the Site like? (Ecological character description)

4.1 - Ecological character

The main (dominant in terms of size) feature of this site is the area covered by the reservoir which covers 590 ha when the dam is full. The shoreline extends over an area of over 10 km, and is relatively wide due to the shallow nature of the reservoir and the fact that water levels fluctuate widely. When water levels are low, the shoreline is mostly mud, with grasses and herbs covering the higher parts. When water levels are high, the water inundates the exposed mud and much of the grass- covered shoreline, leaving a narrow strip to where the natural savanna vegetation commences. The four seasonal streams flow from the west to the east (or from south-west to north-east in case of the southern-most one), entering the reservoir on its western and southern boundaries. There is a well- developed riparian strip along some of these streams, but water only flows for a short time after exceptionally heavy rains. Irrigation canals extend from the dam wall away into the sugarcane fields.

4.2 - What wetland type(s) are in the site?

Inland wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
Fresh water > Flowing water >> N: Seasonal/ intermittent/ irregular rivers/ streams/ creeks		3		
Fresh water > Lakes and pools >> Tp: Permanent freshwater marshes/ pools		2		

Human-made wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
6: Water storage areas/Reservoirs		1		
9: Canals and drainage channels or ditches		4		

4.3 - Biological components

4.3.1 - Plant species

<no data available>

4.3.2 - Animal species

Other noteworthy animal species

Phylum	Scientific name	Common name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/REPTILIA	Crocodylus niloticus					

4.4 - Physical components

4.4.1 - Climate

Climatic region	Subregion
D: Moist Mid-Latitude climate with cold winters	Dwa: Humid continental (Humid with severe, dry winter, hot summer)

The climate is typical for the “Lowveld” of Swaziland with hot wet summers, and warm dry winters. Mean annual rainfall is 500-600 mm, average monthly temperature in summer is 26° and in winter 18°.

4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres): -27

a) Maximum elevation above sea level (in metres): 290

Middle part of river basin ☑

4.4.3 - Soil

Mineral ☑

Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification)? Yes ○ No ◉

Please provide further information on the soil (optional)

The underlying geological formation of the site is granite. The soil is typically sandy.

4.4.4 - Water regime

Water permanence

Presence?
Usually permanent water present

Source of water that maintains character of the site

Presence?	Predominant water source
Water inputs from surface water	☑

Water destination

Presence?
To downstream catchment

Stability of water regime

Presence?
Water levels largely stable

4.4.5 - Sediment regime

Sediment regime unknown ☑

4.4.6 - Water pH

Unknown ☑

4.4.7 - Water salinity

Hyperhaline/Hypersaline (>40 g/l) ☑

Please provide further information on salinity (optional):

Unfortunately in these communities, the water is very salty, such that its use for consumption purposes is almost impossible and its usage for irrigation would trigger salinization.

4.4.8 - Dissolved or suspended nutrients in water

Unknown ☑

4.4.9 - Features of the surrounding area which may affect the Site

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the site itself: i) broadly similar ○ ii) significantly different ◉

Surrounding area has more intensive agricultural use ☑

Please describe other ways in which the surrounding area is different:

The hillsides of the high veld are heavily overgrazed by goats and domestic cattle and are fired every winter.

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Fresh water	Water for irrigated agriculture	Medium

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Recreational hunting and fishing	Medium
Recreation and tourism	Water sports and activities	Medium
Recreation and tourism	Nature observation and nature-based tourism	Medium

Other ecosystem service(s) not included above:

• Irrigation of sugarcane fields
• Fishing (sport) Water sports Birding

b) in the surroundings/catchment:
• Cattle ranching
• Wildlife viewing
• Hunting
• Birding

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site? Yes ○ No ○ Unknown ◉

4.5.2 - Social and cultural values

i) the site provides a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland ☑

Description if applicable

Sand River Dam has been in existence for only 5 decades and therefore has not been around long enough for the development of cultural or religious ties to it. As mentioned earlier, the reservoir was constructed to hold water for sugarcane irrigation. The site is also used for sport fishing, sailing and other outdoor water sports. The Mananga Yacht Club is situated on the eastern shore of the dam and is a popular spot attracting people for recreational activities especially over weekends and holidays.

4.6 - Ecological processes

<no data available>

5 - How is the Site managed? (Conservation and management)

5.1 - Land tenure and responsibilities (Managers)

5.1.1 - Land tenure/ownership

Public ownership

Category	Within the Ramsar Site	In the surrounding area
Other public ownership	☑	☐

Private ownership

Category	Within the Ramsar Site	In the surrounding area
Commercial (company)	☐	☑

Provide further information on the land tenure / ownership regime (optional):

a) within the Ramsar site:
The dam and water within the reservoir are owned by The Royal Swaziland Sugar Corporation Limited (RSSC), but the land has been leased from the Crown.

b) in the surrounding area:
The surrounding area is the privately-owned IYSIS cattle ranch which is also owned by RSSC.

5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site: Swaziland National Trust Commission (SNTC) manages the site, however the Swaziland Water Services Corporation controls the dam and the water in the reservoir.

Provide the name and title of the person or people with responsibility for the wetland: Mr. Sandile Tfululwemphi Gumedze, Senior Ecologist Swaziland National Trust Commission, National focal point

Postal address:
Senior Ecologist
Swaziland National Trust Commission
Parliamnet Drive Swaziland, National Museum Building
P.O.Box
8087 Mbabane
Swaziland

E-mail address: ecology@sntc.org.sz

5.2 - Ecological character threats and responses (Management)

5.2.1 - Factors (actual or likely) adversely affecting the Site's ecological character

Water regulation

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Canalisation and river regulation	High impact		☐	☑

Agriculture and aquaculture

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Annual and perennial non-timber crops		unknown impact	☐	☑

Natural system modifications

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Fire and fire suppression	High impact		☑	☐
Dams and water management/use	High impact		☐	☑

Please describe any other threats (optional):

a) within the Ramsar site:
The Sand River Dam site is relatively safe since its existence depends on continued commercial sugarcane farming in the area, and there is no reason to believe that this activity will cease any time soon.

b) in the surrounding area:
The boundaries of the IYSIS cattle ranch may change due to the demand for planting more sugarcane. This is particularly true for the eastern and south-eastern sections of the ranch. However, the area around the reservoir does not appear to have suitable soils for commercial sugarcane cultivation and therefore is unlikely to be transformed for agricultural purposes.

5.2.2 - Legal conservation status

<no data available>

5.2.3 - IUCN protected areas categories (2008)

<no data available>

5.2.4 - Key conservation measures

Human Activities

Measures	Status
Livestock management/exclusion (excluding fisheries)	Implemented

5.2.5 - Management planning

Is there a site-specific management plan for the site? No

Has a management effectiveness assessment been undertaken for the site? Yes ○ No ◉

If the site is a formal transboundary site as indicated in section Data and location > Site location, are there shared management planning processes with another Contracting Party? Yes ○ No ◉

Please indicate if a Ramsar centre, other educational or visitor facility, or an educational or visitor programme is associated with the site:

There are various recreational activities that take place at this site, mostly focused around the Mananga Yacht Club, such as launching of boats for sailing, fishing and game-viewing or bird watching. This yacht club is situated on the eastern shores of Sand River Dam. There is also a popular tourist-based boat cruise that launches from the northern shores of the reservoir. Camping is restricted to the vicinity of the yacht club, and a private lodge is situated on the northern shores.

5.2.6 - Planning for restoration

Is there a site-specific restoration plan? Please select a value

5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Birds	Implemented

Biannual waterbird surveys were conducted continuously at this site from 1991 to 1999, and again in 2001, and 2003 to 2005.

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

-Bills, R., Boycott, R.C., Fakudze, M., Khumalo, N., Msibi, J., Scott, L., Terry, S. & Tweddle, D. 2004. Fish and fisheries survey of Swaziland (2002-2003). South African Institute for Aquatic Biodiversity. Investigative Report 70. Grahamstown, South Africa.
-Dodman, T. & Taylor, V. 1996. African Waterfowl Census 1996. Wetlands International, Wageningen, The Netherlands.
-Dodman, T., de Vaan, C., Hubert, E. & Nivet, C. 1997. African Waterfowl Census 1997. Wetlands International, Wageningen, The Netherlands.
-Hughes, R H & Hughes, J.S. 1992. A Directory of African Wetlands IUCN, Gland, Switzerland and Cambridge, UK /UNEP, Nairobi, Kenya / WCMC, Cambridge, UK, xxxiv +820 pp., 48 maps.
-IUCN. 2015. The IUCN Red List of Threatened Species. Version 2015-3. www.iucnredlist.org. Downloaded 14 September 2015.
-Mabaso, S.D., Singwane, S.S. & Peter, G. 2010. Mechanisms for redistributing possible water savings from water demand management in Swaziland: the case of lYSISS canal. Journal of Sustainable Development in Africa 12: 196-208.
-Monadjem, A. & Garcelon, D. 2005. Nesting distribution of vultures in relation to land use in Swaziland. Biodiversity & Conservation 14: 2079-2093.
-Monadjem, A. & Rasmussen, M. 2008. Nest distribution and conservation status of eagles, selected hawks and owls in Swaziland. Gabar 19: 1-22.
-Monadjem, A., Boycott, R.C., Parker, V. & Culverwell, J. 2003. Threatened vertebrates of Swaziland. Swaziland Red Data Book: fishes, amphibians, reptiles, birds and mammals. Ministry of Tourism, Environment and Communications, Mbabane.
-Mucina, L. & Rutherford, M.C. (eds). 2006. The vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19. South African National Biodiversity Institute, Pretoria.
-Sukati, M. (2004). The end of year summary report. Mbabane, Swaziland: Rural Water Supply Branch.

6.1.2 - Additional reports and documents

i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)
<no file available>

ii. a detailed Ecological Character Description (ECD) (in a national format)
<no file available>

iii. a description of the site in a national or regional wetland inventory
<no file available>

iv. relevant Article 3.2 reports
<no file available>

v. site management plan
<no file available>

vi. other published literature
<no file available>

<no data available>

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:

Sandriver (*Gumedze S., 18-01-2008*)

Sandriver (*Gumedze S., 18-01-2008*)

6.1.4 - Designation letter and related data

Designation letter
<1 file(s) uploaded>

Date of Designation: 2013-06-12