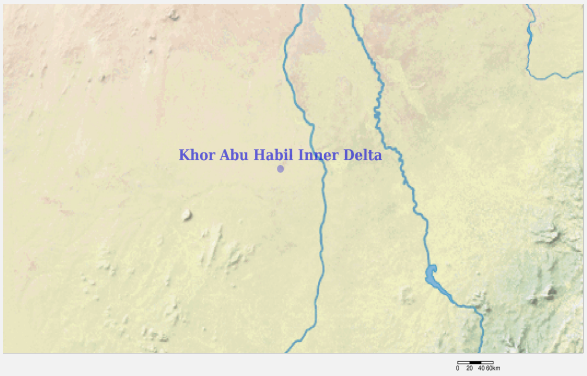
Ramsar Information Sheet

Published on 19 July 2022

Sudan

Khor Abu Habil Inner Delta



Designation date	10 April 2022
Site number	2485
Coordinates	13°03'29"N 32°06'44"E
Area	946 409,00 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

In central Sudan, the Khor Abu Habil inland delta is an exceptional site of about 9500km² located about 400km SW of the capital Khartoum. The Khor Abu Habil (KAH) is the last of the three alluvial fans of Sudan remaining in a quasi-natural state, the other two having largely been reclaimed by agriculture. This alluvial wetland complex forms a temporary (annual) inner delta which is thus the last one in Sudan to have a natural ecological functioning. We have estimated by remote sensing that the proposed site is constituted of hundreds of temporary ponds located in between sand dunes and acacia galleries. These ephemeral wetlands result from the seasonal Wadi streams and last for several months in the region of interest. The Site supports 7 species that are currently considered world-threatened on the IUCN Red List, and also regularly supports 20,000 or more waterbirds. Hundreds of villages depend directly on this complex of temporary pools (called Maya) which also hosts hundreds of thousands of Afrotropical and Palaearctic migratory birds between sand dunes and narrow gallery forests of acacia trees. Activities practised by local communities around these temporary pools include fishing, agriculture, hunting, and especially sedentary or nomadic livestock rearing. Given the apparent good state of conservation of these wetlands, these activities seem to be practised sustainably by local communities, although further studies are needed to confirm this.

2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Responsible compiler

Institution/agency: Tour du Valat

Postal address: Tour du Valat 13200 Arles - France

National Ramsar Administrative Authority

Institution/agency: Higher Council for Environment and Natural Resources

Postal address: Sudan-Khartoum
Muk Nimir Street
Po Pox. 10488

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

From year: 2010

To year: 2020

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish): Khor Abu Habil Inner Delta

2.2 - Site location

2.2.1 - Defining the Site boundaries

b) Digital map/image
<2 file(s) uploaded>

Former maps: 0

Boundaries description

The Khor Abu Habil is located in both North Kordofan State (between Al-Rahad and Wad Ashana towns between latitudes 12°15' and 12°30' North and 29°45' to 31°45' East) and in White Nile State (eastward to the White Nile).

The main river flows northward between 12°15' and 13°00' North and 30°30' and 31°15' East. Khor Abu Habil is flooded every year between July and October, crossing a distance of 150 km with a total discharge of 140 million cubic meters per year. It has a wide alluvial delta with heavy clay deposits. Khor Abu Habil covers an area of 26,792 km².

The Ramsar site boundaries have been delineated according to the location of the main river beds of the alluvial fan and thus around the main concentrations of natural temporary wetlands mapped using remote sensing methods and visited on the ground.

Following a large in situ consultation, they have been approved by the national and local authorities as well as the traditional representatives of the local communities.

Over 72 villages are found in this Ramsar Site and host several temporary wetlands, locally called mayas. The main town (Kosi) close to the Site was avoided as well as the main road going south. Where possible the Nile river has been included as part of the Site. The Ar Rahad reservoir (permanently flooded) has been included at the extreme west end of the site boundaries.
At the extreme north-east end of the site, the Um Gar Island has been included. Both wetlands are extensive and of great heritage value, both for traditional agriculture and waterbirds

2.2.2 - General location

a) In which large administrative region does the site lie? White Nile State and North Kordofan State

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

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): 946409

Area, in hectares (ha) as calculated from GIS boundaries: 946403.324

2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
WWF Terrestrial Ecoregions	Sahalian Acacia savanna
Freshwater Ecoregions of the World (FEOW)	Upper Nile

3 - Why is the Site important?

3.1 - Ramsar Criteria and their justification

☑ Criterion 1: Representative, rare or unique natural or near-natural wetland types

Hydrological services provided	This wetland (temporarily flooded alluvial fan) is particularly rare. This site is crucial for flood control, groundwater replenishment, sediment and nutrient retention, climate change modification, and water purification and maintenance of water quality (Salama, 1987)
Other ecosystem services provided	These natural wetlands provide drinking water, fish, gamebirds, flood agriculture and water for sedentary and nomadic livestock. Most of the forest stands within site are widely used for wild fruit harvest (balanytes, baobab) and gum Arabic. Baobab trees have traditionally been valued as sources of food, water, health remedies or places of shelter and are a key food source for many animals. The roots and fruits are edible. The fruit has been suggested to have the potential to improve nutrition, boost food security, foster rural development and support sustainable land care. In Sudan – where the tree is called tebeldi تبلدي – people make tabaldi juice by soaking and dissolving the dry pulp of the fruit in water, locally known as gunguleiz. Water can also be extracted from some of the trunks. Sudan is the source of the world's highest quality gum arabic, known locally as hashab gum. The fruits of Balanites aegyptiaca are edible; the tree is also used for animal fodder. The tree is used to provide medicinal treatments, and for firewood to make good charcoal.
Other reasons	Last remaining alluvial inner Delta in Sudan

☑ Criterion 2 : Rare species and threatened ecological communities

☑ Criterion 5 : >20,000 waterbirds

Overall waterbird numbers	1085269 (extrapolated); 138663 (observed in 2020)
Start year	2010
Source of data:	Wildlife Conservation General Administration/Higher Council for Environment and Natural Resources /Wildlife Research Center/Sudanese Wildlife Society/Sennar Wildlife College/Tour du Valat/Office Français de la Biodiversité

☑ Criterion 6 : >1% waterbird population

Optional text box to provide further information	12 species qualifying. we report maximum observed numbers on a sample of ponds (mayas) but because there are hundreds of ponds, the extrapolated numbers are probably truer.

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

<no data available>

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

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
Birds																	
CHORDATA / AVES	*Anas acuta*	☐	☐	☑	☐	☐	☑	☐	☐	34161	2012-2021	12.2	LC	☐	☐		Western Siberia/SW Asia & Eastern Africa, more than 15 000 are regurlarly observed
CHORDATA / AVES	*Anas penelope*	☐	☐	☑	☐	☐	☑	☐	☐	4803	2013-2021	2.53	LC	☐	☐		Population: Western Siberia/SW Asia & NE Africa, More than 2 000 are regularly observed
CHORDATA / AVES	*Anas querquedula*	☐	☐	☑	☐	☐	☑	☐	☐	53524	2012-2021	38.23		☐	☐		Population: Western Siberia/SW Asia, NE & Eastern Africa More than 16 000 are regularly observed
CHORDATA / AVES	*Anthropoides virgo*	☐	☐	☑	☐	☐	☑	☐	☐	595	2013-2020	3.71	LC	☐	☐		Population: Kalmikya/North-east Africa More than 10% are regularly observed (1% according CSR8 is 160)
CHORDATA / AVES	*Aquila clanga*	☑	☐	☐	☐	☐	☐	☐	☐	1	2019		VU	☐	☑	CITES Annex II	
CHORDATA / AVES	*Aquila nipalensis*	☑	☐	☐	☐	☐	☐	☐	☐	18	2019-2020		EN	☐	☑		
CHORDATA / AVES	*Aythya ferina*	☑	☐	☐	☐	☐	☑	☐	☐	17	2019-2021		VU	☐	☐	AEWA	
CHORDATA / AVES	*Charadrius alexandrinus*	☐	☐	☑	☐	☐	☑	☐	☐	1930	2012-2020	1.93	LC	☐	☐		alexandrinus, SW & Central Asia/SW Asia & NE Africa 1% is regularly observed.
CHORDATA / AVES	*Charadrius asiaticus*	☐	☐	☑	☐	☐	☑	☐	☐	2090	2012-2021	4.45	LC	☐	☐		SE Europe & West Asia/E & Central Southern Africa 4.45% is a maximum observed, near 2% are regularly observed
CHORDATA / AVES	*Egretta garzetta*	☐	☐	☑	☐	☐	☑	☐	☐	1213	2012-2021	1.21	LC	☐	☐		garzetta, Western Asia/SW Asia, NE & Eastern Africa
CHORDATA / AVES	*Glareola pratincola*	☐	☐	☑	☐	☐	☑	☐	☐	20477	2012-2021	28.84	LC	☐	☐		pratincola, SW Asia/SW Asia & NE Africa more than 1% is regularly observed and 1 record figure with more than 20 000 ind.
CHORDATA / AVES	*Gyps rueppellii*	☑	☐	☐	☐	☐	☐	☐	☐	2	2020		CR	☑	☐		
CHORDATA / AVES	*Himantopus himantopus*	☐	☐	☑	☐	☐	☑	☐	☐	5700	2012-2021	4.07	LC	☐	☐		himantopus, Sub-Saharan Africa (excluding south) between 2 and 4% are regularly observed.
CHORDATA / AVES	*Limosa limosa*	☐	☐	☑	☐	☐	☑	☐	☐	9377	2012-2021	9.77	NT	☐	☐		limosa, Eastern Europe/Central & Eastern Africa between 1 and 10% are regularly observed
CHORDATA / AVES	*Philomachus pugnax*	☐	☐	☑	☐	☐	☑	☐	☐	22670	2012-2021	1.13		☐	☐		Northern Siberia/SW Asia, E & S Africa 2 times the total number was very close to 1%.
CHORDATA / AVES	*Platalea leucorodia*	☐	☐	☑	☐	☐	☑	☐	☐	1267	2014-2021	7.45	LC	☐	☐		leucorodia, SE Europe/Mediterranean, SW Asia & East Africa between 2 and 7% are regularly observed.
CHORDATA / AVES	*Streptopelia turtur*	☑	☐	☐	☐	☐	☐	☐	☐	158	2019-2021		VU	☐	☐	UE - Annex A/ CITES Annex III	

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
CHORDATA / AVES	*Vanellus gregarius*	☑	☐	☐	☐	☐	☑	☐	☐	2	2013		CR	☐	☑		

1) Percentage of the total biogeographic population at the site

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 site is part of the hydrological Nile system. It is the alluvial endoreic fan of a temporary River (Khor) coming down from the Nuba mountains during rainy season. The river dries up yearly but ends in sand and clay lentilles and dunes between Al Rahad town and the Nile. Most of the years, it does not reach the Nile but, as an affluent to the Nile, it sometimes reaches it on rainiest years. The site is composed of a large number of ponds (mayas) in-between sand dunes and few acacia forests. Almost all ponds (mayas) dry up in dry season and the few remaining ones are important for local communities to reach the next rainy season.
Local communities rely largely on these mayas to sustain. These natural wetlands provide drinking water, fish, gamebirds, flood agriculture and water for sedentary and nomadic livestock.

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	Khor	2		Representative
Fresh water > Lakes and pools >> P: Seasonal/ intermittent freshwater lakes	Maya	1		Representative
Fresh water > Marshes on inorganic soils >> Xf: Freshwater, tree-dominated wetlands	Maya	3		

Human-made wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type
6: Water storage areas/Reservoirs	Hafir	4	

Other non-wetland habitat

Other non-wetland habitats within the site	Area (ha) if known
Savanna dominated by Acacia sp.	
Sand dunes	

4.3 - Biological components

4.3.1 - Plant species

Other noteworthy plant species

Phylum	Scientific name	Position in range / endemism / other
TRACHEOPHYTA/MAGNOLIOPSIDA	*Adansonia digitata*	rare/uncommon
TRACHEOPHYTA/MAGNOLIOPSIDA	*Balanites aegyptiaca*	One of the most important and widespread component of sahelian savannah ecosystem -used for the great green wall
TRACHEOPHYTA/MAGNOLIOPSIDA	*Senegalia senegal*	One of the most important and widespread component of sahelian savannah ecosystem.
TRACHEOPHYTA/MAGNOLIOPSIDA	*Vachellia nilotica*	One of the most important and widespread component of sahelian savannah ecosystem.

Invasive alien plant species

Phylum	Scientific name	Impacts
TRACHEOPHYTA/MAGNOLIOPSIDA	*Prosopis juliflora*	Actual (major impacts)

4.3.2 - Animal species

Other noteworthy animal species

Phylum	Scientific name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/MAMMALIA	*Crocuta crocuta*				Data for this species are scare north of the proposed site so the site may be near to the population range border south of the Sahara. The species is considered to be in decline.
CHORDATA/MAMMALIA	*Eudorcas rufifrons*				Possibly extinct in the whole region, this species may potentially be the last remaining “large” mammal of this formerly mammal-rich savanna ecosystem. This species would thus deserve a specific survey to confirm extinction. If found again, locality could
CHORDATA/MAMMALIA	*Mellivora capensis*				Honey Badgers are considered rare or to exist at low densities across most of their range. Data for this species are scare north of the proposed site so it may be close to the population range border south of the Sahara. The species is considered declinin

Optional text box to provide further information

Ictonyx sp.
Lepus Sp.
Genetta sp.

Other large mammals mostly disappeared following the major droughts in the 70s and 80s but are remaining south to the site.
Tragelaphus strepsiceros is present south to the site, at less than 20 km from the South West boundary of the site, in the Jebel Al Daïr Biosphere Reserve.

4.4 - Physical components

4.4.1 - Climate

Climatic region	Subregion
A: Tropical humid climate	Aw: Tropical savanna (Winter dry season)

No major change but large fluctuations in precipitations

4.4.2 - Geomorphic setting

Entire river basin ☐
Upper part of river basin ☐
Middle part of river basin ☐
Lower part of river basin ☑
More than one river basin ☐
Not in river basin ☐
Coastal ☐

Please name the river basin or basins. If the site lies in a sub-basin, please also name the larger river basin. For a coastal/marine site, please name the sea or ocean.

Khor Abu Habil within Nile Basin

4.4.3 - Soil

Mineral ☐
Organic ☑
No available information ☐

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)

Alternance of clay lentilles and sand dunes

4.4.4 - Water regime

Water permanence

Presence?	
Usually seasonal, ephemeral or intermittent water present	No change

Source of water that maintains character of the site

Presence?	Predominant water source	
Water inputs from surface water	☐	No change
Water inputs from precipitation	☑	No change

Water destination

Presence?	
Feeds groundwater	No change
To downstream catchment	No change

Stability of water regime

Presence?	
Water levels fluctuating (including tidal)	No change

Please add any comments on the water regime and its determinants (if relevant). Use this box to explain sites with complex hydrology:

The site water comes from the River (Khor) Abu Habil, which is created by precipitations over the Nuba Moutaines, 200km upstream of the site.

4.4.5 - Sediment regime

Significant erosion of sediments occurs on the site ☐

Significant accretion or deposition of sediments occurs on the site ☐

Significant transportation of sediments occurs on or through the site ☑

Sediment regime is highly variable, either seasonally or inter-annually ☑

Sediment regime unknown ☐

4.4.6 - Water pH

Acid (pH<5.5) ☐

Circumneutral (pH: 5.5-7.4) ☐

Alkaline (pH>7.4) ☐

Unknown ☑

4.4.7 - Water salinity

Fresh (<0.5 g/l) ☐

Mixohaline (brackish)/Mixosaline (0.5-30 g/l) ☐

Euhaline/Eusaline (30-40 g/l) ☐

Hyperhaline/Hypersaline (>40 g/l) ☐

Unknown ☑

4.4.8 - Dissolved or suspended nutrients in water

Eutrophic ☐

Mesotrophic ☐

Oligotrophic ☐

Dystrophic ☐

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 greater urbanisation or development ☐

Surrounding area has higher human population density ☐

Surrounding area has more intensive agricultural use ☑

Surrounding area has significantly different land cover or habitat types ☐

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Food for humans	Sustenance for humans (e.g., fish, molluscs, grains)	Medium
Fresh water	Drinking water for humans and/or livestock	Low
Fresh water	Water for irrigated agriculture	High
Wetland non-food products	Livestock fodder	High
Wetland non-food products	Other	Medium

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Maintenance of hydrological regimes	Groundwater recharge and discharge	High
Erosion protection	Soil, sediment and nutrient retention	Medium
Climate regulation	Local climate regulation/buffering of change	Medium
Hazard reduction	Flood control, flood storage	High

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Recreational hunting and fishing	Medium
Recreation and tourism	Nature observation and nature-based tourism	Low
Scientific and educational	Major scientific study site	Medium

Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance
Biodiversity	Supports a variety of all life forms including plants, animals and microorganizms, the genes they contain, and the ecosystems of which they form a part	Low
Soil formation	Sediment retention	High
Soil formation	Accumulation of organic matter	High
Nutrient cycling	Storage, recycling, processing and acquisition of nutrients	High

Optional text box to provide further information

More research/studies needed in the perspective of a management plan

Other ecosystem service(s) not included above:

the other ecosystem services provided by the site are Medicinal products and gum arabic.

Within the site: 820000

Outside the site: 630 000

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

Where economic studies or assessments of economic valuation have been undertaken at the site, it would be helpful to provide information on where the results of such studies may be located (e.g. website links, citation of published literature):

Allajabu, H.A. & Ibrahim, M.A. 2021 Socio-economic importance of Khor Abu Habil alluvian fan for Agriculture, livestock, hunting and fishing. Internal WRC/SUST/FAO/OFB/TdV report

https://drive.google.com/file/d/1JK-AFvtA4zK2VmBhbVA7h6z66OCmsclF/view

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

Flood agriculture, hunting and fishing, cattle breeding including nomadic cattle, use of Acacia nilotica and Hibiscus for medicinal use, gum arabic harvest are all traditional exploitations of the wetlands.

ii) the site has exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland ☐

iii) the ecological character of the wetland depends on its interaction with local communities or indigenous peoples ☐

iv) relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland ☐

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
National/Federal government	☑	☑
Provincial/region/state government	☑	☑
Local authority, municipality, (sub)district, etc.	☑	☑

Private ownership

Category	Within the Ramsar Site	In the surrounding area
Other types of private/individual owner(s)	☑	☑

5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site: Ministry of Irrigation & Wildlife Conservation General Administration

Provide the name and/or title of the person or people with responsibility for the wetland: The minister of irrigation & General Director of WCGA

Postal address:
Wildlife conservation and General Administration
P.O. Box 336
Khartoum
SUDAN

E-mail address: wildlife_sudan33@yahoo.com

5.2 - Ecological character threats and responses (Management)

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

Human settlements (non agricultural)

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Housing and urban areas	unknown impact	unknown impact	☑	☑

Water regulation

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Water abstraction	unknown impact	High impact	☑	☑
Canalisation and river regulation	unknown impact	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	Low impact	unknown impact	☑	☑
Livestock farming and ranching	unknown impact	unknown impact	☑	☑

Energy production and mining

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Mining and quarrying	Low impact	unknown impact	☑	☐

Transportation and service corridors

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Roads and railroads	unknown impact	unknown impact	☑	☑

Biological resource use

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Hunting and collecting terrestrial animals	unknown impact	unknown impact	☑	☑
Fishing and harvesting aquatic resources	unknown impact	unknown impact	☑	☑
Logging and wood harvesting	unknown impact	unknown impact	☑	☑

Natural system modifications

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

Invasive and other problematic species and genes

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Invasive non-native/ alien species	unknown impact	High impact	☑	☑

Pollution

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Household sewage, urban waste water	High impact	High impact	☑	☑
Agricultural and forestry effluents	High impact	High impact	☑	☑
Garbage and solid waste	High impact	High impact	☑	☑
Unspecified	High impact	High impact	☑	☑

Climate change and severe weather

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Droughts	High impact	High impact	☐	☑
Storms and flooding	High impact	High impact	☑	☑

Please describe any other threats (optional):

aerial spray against pests has a high impact

5.2.2 - Legal conservation status

<no data available>

5.2.3 - IUCN protected areas categories (2008)

Ia Strict Nature Reserve ☐

Ib Wilderness Area: protected area managed mainly for wilderness protection ☐

II National Park: protected area managed mainly for ecosystem protection and recreation ☐

III Natural Monument: protected area managed mainly for conservation of specific natural features ☐

IV Habitat/Species Management Area: protected area managed mainly for conservation through management intervention ☐

V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation ☐

VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems ☐

<no data available>

5.2.4 - Key conservation measures

Legal protection

Measures	Status
Legal protection	Partially implemented

Other:

Legal protection is provided by the Wildlife Conservation General Administration patrolling the site.

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 ◉

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
Water regime monitoring	Proposed
Water quality	Proposed
Soil quality	Proposed
Plant community	Proposed
Plant species	Proposed
Animal community	Proposed
Animal species (please specify)	Proposed
Birds	Implemented

The following animals monitoring should be done: fish, mammals, dragonflies
the Land use cover and the pond dynamic should be studied.
and also the study of the cattle grazing in the site should be implemented.

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

Elfaig A.H.I , Abdalla A.M., Hamid A.B., Elnour.,Eisa A.M. (2016): Spatial Biodiversity's Change sin Khor Abuhabil Area- Sudan. Elixir Environ. & Forestry, Vol 5.

MARIE SUET, JUAN GUILLERMO LOZANO-ARANGO,1 PIERRE DEFOS DU RAU,2
CL ´EMENCE DESCHAMPS,1 MOHAMMED ADAM ABDALGADER MOHAMMED,3 ELFIRDOUS ELBASHARY ADAM,3 ELTAYEB MOHAMMED ELDEGAIR,4 MOHAMED ELMEKKI ALI ELBADAWI,4 IBRAHIM MOHAMMED HASHIM,5 NOMAN KIRREM KPOORE,3 MOHAMMED ADAM MOHAMMED,4 MANAL MOHAMMED IBRAHIM BIHERY,3 MUTASSIM ESSA ABDALLAH ADAM,5 OLIVIER PINEAU1 & JEAN-YVES MONDAIN-MONVAL2 (2021). Improving waterbird monitoring and conservation in the Sahel using remote sensing: a case study with the International Waterbird Census in Sudan. Ibis, 163(2), 607-622.

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6.1.2 - Additional reports and documents

i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)
<1 file(s) uploaded>

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
<4 file(s) uploaded>

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:

Shirkela Maya (*Alizée Chiappini & Camille Barbé, 09-12-2020*)

As Selea Maya (*Alizée Chiappini & Camille Barbé, 08-12-2020*)

6.1.4 - Designation letter and related data

Designation letter
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Date of Designation: 2022-04-10