



Ramsar Information Sheet

Published on 6 March 2026

Nigeria

Ogoniland Wetland



Designation date	21 October 2025
Site number	2593
Coordinates	04°35'58"N 07°16'46"E
Area	31 701,00 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

The Ogoniland wetland site is located in Rivers State, Niger Delta, Southern Nigeria. The wetland comprises thousands of hectares of mangrove wetland along the Gulf of Guinea on the Atlantic coast of West Africa. The site's geomorphological barrier island, formed by sand ridges, comprises networks of intertidal channels, estuaries, and creeks intersected by extensive mangrove forests. Ogoniland has approximately 31,700 hectares of mangroves. Ogoniland wetland meets six of nine criteria for designation as a Ramsar site of international importance. It is notable for its diverse tidal flats and creeks and rich biodiversity, including endemics (e.g., the West African leucine, <i>Keletistes rhizoecus</i>) and endangered species (e.g., the grey parrot, <i>Psittacus Erithacus</i>). The site is also a valuable source of ecosystem goods and services that benefit both the environment and the socio-economic well-being of the people living around the mangrove areas. In addition to the ecological services of food production, water purification, aesthetics, cultural functions, and climate regulation, it supports critical life history stages of some flora and fauna, including serving as spawning, nesting, nursery, foraging, and roosting sites. These include juvenile fish, amphibians, reptiles, birds, and mammals at various life history stages. The Ogoni mangrove ecosystem provides safe habitats for numerous plants and animals due to its rich food web, low predation rates, and low interspecific competition. It serves as a natural nursery for several animals. The wetland is home to waterbirds of varying species and relative abundances (both migratory and resident).
--

2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Responsible compiler

Institution/agency	Hydrocarbon Pollution Remediation Project (Project)
Postal address	8 Ken Saro-Wiwa Street (Stadium Road), Port Harcourt, Rivers State, Nigeria

National Ramsar Administrative Authority

Institution/agency	Federal Ministry of Environment
Postal address	Federal Ministry of Environment, Department of Forestry, Plot 393/394 Augustus Aikhomu Way, Utako, Abuja, Nigeria.

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

From year	2023
To year	2025

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Ogoniland Wetland
---	-------------------

2.2 - Site location

2.2.1 - Defining the Site boundaries

b) Digital map/image

<1 file(s) uploaded>

Former maps	0
-------------	---

Boundaries description

North Upland alluvial plains and freshwater channels give way to low-lying marshes and the headwaters of creeks that drain the mangrove zone. Inland from the mangroves, the terrain rises slightly into agricultural and built-up villages tied to the Ogoni kingdoms (Gokana, Khana, Tai, Eleme); road and pipeline corridors cross this zone. East The eastern edge is defined by a network of tidal rivers and creeks (including branches of the Imo River system) and by swamp-forest transitions. Here, mangroves grade into freshwater swamp, and small-scale farmland; oil infrastructure (flowlines, well sites, pipelines) and settlements are common. West To the west, the mangroves merge into an extensive estuarine labyrinth of tidal creeks, channels, and fringing mangrove islands that connect to other Niger Delta mangrove tracts. This margin shows fragmentation from expanding built-up areas and increased access (roads, creeks used for transport). South The southern boundary fronts the inner Gulf of Guinea — a complex tidal estuary of mudflats, creeks (e.g., Bodo Creek and adjacent waterways), and dense mangrove belts directly exposed to tidal inundation. These seaward mangroves act as nursery habitat for fish and support local fisheries and shoreline protection.

2.2.2 - General location

a) In which large administrative region does the site lie?	Rivers State, South-South Geopolitical Zone, Nigeria
b) What is the nearest town or population centre?	Port Harcourt

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): 31701

Area, in hectares (ha) as calculated from GIS boundaries31701.345

2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Marine Ecoregions of the World (MEOW)	Afrotropical

Other biogeographic regionalisation scheme

Bailey's Ecoregions
WWF Terrestrial Ecoregions
Freshwater Ecoregions of the World (FEOW)
Congolian or The Atlantic Equatorial coastal forests

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	The site controls flooding; stabilizes shorelines against erosion and storm surges; purifies water by filtering pollutants and sediments; and recharges groundwater aquifers, thereby contributing to climate regulation. Mangroves are globally recognized as vital carbon sinks, as they sequester and store CO ₂ at rates up to five times higher than those of tropical rainforests.
Other ecosystem services provided	The site supports a wide range of plant and animal species, including invertebrates and vertebrates, and provides essential habitats for fish and other aquatic food species. It plays a critical role in nutrient availability and cycling, sustaining life-support systems and maintaining a rich and diverse genetic pool. The site supports robust food chains that form integral components of broader food webs, which are essential for ecosystem stability and directly support local livelihoods. In addition, it provides a variety of natural resources, including timber, freshwater for human consumption and agriculture, and materials used in fine and performing arts, such as wood for mask carving. The site also offers opportunities for recreation and tourism, serves as an important reference area for scientific research, and holds significant cultural and spiritual value for local communities.

☒ Criterion 2 : Rare species and threatened ecological communities

Optional text box to provide further information

Mangrove spp. (Red Mangrove) *Rhizophora racemosa*, *R. mangle* (Black Mangrove), *Avicennia germinans* (White Mangrove), *Languncularia racemosa* (Buttonwood), *Conocarpus erectus*

Vertebrates (Mammalia)

Cercocebus torquatus (Red-capped mangabey) – Endangered

Panthera pardus (Leopard) – Very rare/vulnerable.

Cercopithecus nictitans (Nigerian Putty-nosed Monkey) – Scarce/Endangered

Birds (Avian spp.)

Psittacus erithacus (Grey parrot) – Endangered.

Necrosyrtes monachus (Hooded vulture) –Critically endangered

Limosa limosa (Black-tailed Godwit) – Migrant/near-threatened

Invertebrates (Shell Fish spp.)

Senilia senilis (Bloody Cockle) – disappearing

Callinectes amnicola (Bigfisted swimcrab)

Goniopsis pelli (Purple mangrove crab)

Cardisoma armatum (Lagoon land crab)

Uca tangeri (West African fiddler crab)

Farfantepenaeus notialis (Southern pink shrimp)

Penaeus kerathurus (Caramote prawn)

Phytoplankton

Gyrosigma sp (Hassall, 1845) – Green Algae

Cyclotella sp (Kutzing, 1838)- Green Algae

Ceratium tripos (Muller, 1817) – Red Algae

Batrachospermum sp

Spirotaenium condensate (Brebisson, 1848)

Pseudo-nitschia sp (Peragallo, 1900) – Green Algae

☒ Criterion 3 : Biological diversity

Justification

The site hosts a highly productive mangrove ecosystem characterized by complex biological interactions across multiple trophic levels. Primary producers include mangrove trees such as *Rhizophora racemosa*, *R. mangle*, *R. harisonii* (red mangroves), *Avicennia germinans* (black mangrove), *Laguncularia racemosa* (white mangrove), *Conocarpus erectus* (buttonwood), and associated species such as *Acrostichum aureum*, *Mangifera indica*, and *Cocos nucifera*. Shrubs, palms, and herbs including *Nypa fruticans* (an invasive mangrove palm), *Phoenix reclinata*, *Hibiscus tiliaceus*, and *Ananas comosus* contribute to habitat complexity and primary productivity. Phytoplankton species such as *Peridinium volzii*, *Cyclotella comta*, *Nitzschia palea*, and *Cymbella lacustris* form the base of the aquatic food web, supporting diverse zooplankton communities (*Diaptomus* spp., *Thermacyclops* spp., *Lecane unguiculata*, *Amoeba* spp.), which are critical food sources for higher trophic levels. Detritus derived from mangrove leaves, fruits, roots, and woody debris fuels nutrient regeneration and export to adjacent ecosystems. This organic matter is directly or indirectly consumed by invertebrates such as the purple mangrove crab (*Goniopsis pelii*), which play a key role in nutrient cycling and sediment turnover. These invertebrates, together with zooplankton, support abundant fish populations, notably *Mugilidae*, *Cichlidae*, and *Haemulidae*, which use the mangroves as nursery grounds. The complex aerial root systems of mangroves provide shelter and protection from predators, enhancing the survival of fish larvae and juveniles. Higher trophic levels include amphibians such as the African common toad (*Sclerophrys regularis*), birds such as the Eurasian whimbrel (*Numenius phaeopus*) and the black-tailed godwit (*Limosa limosa*), which feed on fish, crustaceans, and invertebrates. These interactions form interconnected food chains that underpin a resilient food web. Overall, the mangrove ecosystem of the site exhibits high primary productivity, efficient nutrient cycling, and strong ecological connectivity, supporting biodiversity, fisheries productivity, and adjacent coastal and marine ecosystems.

☒ Criterion 4 : Support during critical life cycle stage or in adverse conditions

Optional text box to provide further information

Mangrove roots host some epibionts, including macroalgae. The phytoplanktons spend their life history stages in this habitat. Serves as a spawning and nursery habitat for young fish and a foraging habitat for adult fish. Some of the inhabitants, like oysters and dogwhelks, which are essential food species, live on mangrove plant prop roots. Nursery habitat for prawns, shrimps, and crabs at their early developmental stages (larval & post-larval stages/juveniles). Nursery habitat for honey bees. Nursery grounds for some birds, resting ground for most migratory birds. Mangroves are crucial to fish production, as they serve as nurseries for a variety of fin fish, shellfish, and other animals. They also provide shelter for migratory birds and are crucial in sustaining life in the ocean. The mangroves of Ogoniland have been recognized for supporting a diverse array of invertebrates, fish, and other vertebrates that are ecologically important and commercially abundant, thereby supporting the livelihoods of people living within and around the area. The mangroves also serve as shelters for coastal animals and mitigate the effects of storms and other adverse weather conditions.

End year 2025

☒ Criterion 7 : Significant and representative fish

Justification

These species are endemic to the Niger Delta region. Occurs only in localized brackish habitats within the Niger Delta floodplains/creeks, likely shaped by the region's unique swamp forest and blackwater systems. Their habitat is influenced by delta hydrology and seasonal flooding—suggesting a specialized distribution shaped by local conditions such as water chemistry and flow. The wetland comprises a mosaic of freshwater rivers, blackwater creeks, estuaries, swamp forests, and seasonal floodplains. This landscape promotes habitat partitioning and evolutionary isolation, enabling local divergence among species. Mugilidae spp. Cichlidae spp. Haemulidae spp. Fundulopanchax sjostedti — Blue Gularis / Red Aphyosemion Denticipidae (e.g., Denticeps clupeoides), Pantodontidae (Pantodon buchholzi), Phractolaemidae (Phractolaemus ansorgii), Hepsetidae (Hepsetus odoe), Gymnarchidae (Gymnarchus niloticus) Invertebrate (Fin Fish) Chrysichthys nigrodigitatus (Silver catfish) - disappearing Ethmalosa fimbriata (Bonga) – Disappearing. Lutjanus gonensis (Red snapper) Lutjanus agennes (African red snapper) Epinephelus spp (Groupers) Pseudotolithus senegalensis (Croaker) P. Typus (Longneck croaker) P. Elongatus (Bobo croaker) Liza grandisquamis (Large scaled mullet) L. Falcipinis (Grey Mullet) Sarotherodon melanotheron (Blackchin tilapia) Tilapia guineensis (Guinean tilapia) Eleotris seneganaensis (Silver fish) Bostrychus africanus Sphyaena barracuda (Great barracuda) Periophthalmus papilio is an endemic species to the west African region, specifically designated as the type locality for this species by Bloch and Schneider in 1801. It is recognized as the only and endemic west African Periophthalmus sp

☒ Criterion 8 : Fish spawning grounds, etc.

Justification

The Ogoniland mangrove wetland, located in the eastern Niger Delta, performs a critical ecological function as a fish spawning, nursery, and recruitment habitat for freshwater, estuarine, and marine fish species. The wetland is characterized by an extensive network of tidal creeks, shallow lagoons, intertidal mudflats, and swamp forests dominated by Rhizophora racemosa, R. harrisonii, and Avicennia germinans. These features create low-energy, sheltered aquatic environments that are essential for fish reproduction and early-life-stage survival. Seasonal tidal exchange and freshwater inflow generate salinity gradients that support spawning migrations of both resident and transient fish species. The submerged mangrove root systems provide physical structure for egg attachment, refuge from predators, and stable microhabitats for larvae and juveniles. High primary productivity and detrital input from mangrove leaf litter sustain rich planktonic and benthic food webs, enabling rapid juvenile growth and increased recruitment success. Fish species known to utilize Ogoniland mangrove creeks and adjacent wetlands for spawning and nursery functions include tilapias (Sarotherodon melanotheron, Coptodon zillii), African catfishes (Clarias gariepinus, Chrysichthys nigrodigitatus, Synodontis guttatus), Niger tetra (Arnoldichthys spilopterus), hingemouth (Phractolaemus ansorgii), African butterflyfish (Pantodon buchholzi), mullets (Mugil cephalus), and croakers (Pseudotolithus elongatus). Many of these species contribute directly to artisanal fisheries and regional food security. Hydrological connectivity between mangrove creeks, freshwater rivers, and coastal waters allows juveniles reared within the mangrove wetland to recruit into offshore and estuarine fisheries, linking Ogoniland to broader Niger Delta and Gulf of Guinea fish stocks. The wetland, therefore, supports fisheries productivity beyond its immediate boundaries. At the national scale, the Ogoniland mangrove wetland contributes significantly to Nigeria's inland and coastal fisheries, sustains the livelihoods of local fishing communities, and supports a high diversity of fish taxa, including regionally endemic and monotypic lineages characteristic of the Niger Delta biogeographic zone. At the international scale, the site supports fish populations that form part of shared West African marine and estuarine stocks, contributing to regional fisheries sustainability in the Gulf of Guinea. The ecological character of the Ogoniland mangrove wetland aligns with the objectives of the Ramsar Convention, the Convention on Biological Diversity, and Sustainable Development Goals 2, 14, and 15, highlighting its importance for biodiversity conservation, food security, and ecosystem resilience.

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

Phylum	Scientific name	Criterion 2	Criterion 3	Criterion 4	IUCN Red List	CITES Appendix I	Other status	Justification
Plantae								
TRACHEOPHYTA / MAGNOLIOPSIDA	<i>Avicennia germinans</i>	☐	☒	☐	LC	☐		Essential for aquatic life, such as fish nursery, sequestering carbon, and habitat for invertebrates
TRACHEOPHYTA / MAGNOLIOPSIDA	<i>Laguncularia racemosa</i>	☐	☒	☐	LC	☐		Essential for aquatic life, such as fish nursery, sequestering carbon, and habitat for invertebrates
TRACHEOPHYTA / MAGNOLIOPSIDA	<i>Rhizophora harrisonii</i>	☒	☒	☐	VU	☒		Essential for aquatic life, such as fish nursery, sequestering carbon, and habitat for invertebrates. Least is abundant in the Niger Delta.
TRACHEOPHYTA / MAGNOLIOPSIDA	<i>Rhizophora mangle</i>	☐	☒	☐	LC	☐		Essential for aquatic life, such as fish nursery, sequestering carbon, and habitat for invertebrates
TRACHEOPHYTA / MAGNOLIOPSIDA	<i>Rhizophora racemosa</i>	☐	☒	☐	LC	☐		Essential for aquatic life, such as fish nursery, sequestering carbon, and habitat for invertebrates

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								
Others																	
CHORDATA / MAMMALIA	<i>Aonyx capensis</i>	☐	☐	☐	☐	☒	☐	☐	☐				NT	☐	☐		A top wetland predator reliant on intact mangrove and riparian systems. Its presence indicates high ecosystem integrity and supports international biodiversity value
CHORDATA / MAMMALIA	<i>Cercocebus torquatus</i>	☒	☐	☐	☐	☐	☐	☐	☐				EN	☐	☐		
CHORDATA / MAMMALIA	<i>Cercopithecus nictitans martini</i>	☒	☐	☐	☐	☐	☐	☐	☐				EN	☐	☐		
CHORDATA / ACTINOPTERYGII	<i>Chrysichthys nigrodigitatus</i>	☐	☐	☐	☐	☒	☐	☒	☒				LC	☐	☐		A major artisanal fishery species whose life cycle depends on estuarine mangrove systems.
CHORDATA / ACTINOPTERYGII	<i>Denticeps clupeoides</i>	☒	☐	☐	☐	☐	☐	☒	☐				VU	☐	☐		Small freshwater fish endemic to werstern Africa (found in the rivers of Benin, Nigeria, and western Cameroon) notable for its unique denticle-like scales and large anal fin.
CHORDATA / ACTINOPTERYGII	<i>Ethmalosa fimbriata</i>	☐	☐	☐	☐	☒	☐	☐	☒				LC	☐	☐		A key West African coastal fish species that uses estuarine and mangrove waters for spawning and nursery functions, supporting regional fisheries
CHORDATA / ACTINOPTERYGII	<i>Hepsetus odoe</i>	☐	☐	☐	☐	☐	☐	☒	☐				LC	☐	☐		Hepsetus odoe, commonly known as the African pike characin, is a predatory freshwater fish native to the tropical rivers and streams of western and central Africa.
CHORDATA / REPTILIA	<i>Lepidochelys olivacea</i>	☒	☒	☐	☐	☒	☐	☐	☐				VU	☒	☒		Juveniles use mangrove-fringed estuaries as feeding and shelter areas, linking the site to international marine conservation priorities

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/ REPTILIA	<i>Osteolaemus tetraspis</i>	☒	☐	☐	☐	☒	☐	☐	☐				VU	☒	☐		A forest-mangrove specialist with declining populations across its range. The Niger Delta mangroves provide critical refuge
CHORDATA/ MAMMALIA	<i>Panthera pardus</i>	☒	☐	☐	☐	☐	☐	☐	☐				VU	☒	☐		
CHORDATA/ ACTINOPTERYGII	<i>Pantodon buchholzi</i>	☐	☐	☐	☐	☐	☐	☒	☐				LC	☐	☐		Species of osteoglossiform fish native to freshwater habitats in the Niger and Congo basins of Western and Central Africa.
CHORDATA/ ACTINOPTERYGII	<i>Periophthalmus argentilineatus</i>	☐	☐	☐	☐	☒	☐	☐	☐				LC	☐	☐		A major artisanal fishery species whose life cycle depends on estuarine mangrove systems.
CHORDATA/ ACTINOPTERYGII	<i>Periophthalmus barbarus</i>	☐	☐	☐	☐	☐	☐	☐	☐				LC	☐	☐		Periophthalmus papilio is an endemic species to the west African region, specifically designated as the type locality for this species by Bloch and Schneider in 1801. It is recognized as the only and endemic west African Periophthalmus sp
CHORDATA/	<i>Phractolaemus ansorgii</i>	☐	☐	☐	☐	☐	☐	☒	☐				LC	☐	☐		Endemic to western and central Africa
CHORDATA/ MAMMALIA	<i>Ptilocolobus epieni</i>	☒	☐	☐	☐	☐	☐	☐	☐				CR	☐	☐		
CHORDATA/	<i>Pseudotolithus elongatus</i>	☐	☐	☐	☐	☒	☐	☐	☐				LC	☐	☐		Depend on mangrove nurseries before recruiting to offshore stocks across the Gulf of Guinea, linking the Niger Delta to shared international fish stocks
CHORDATA/	<i>Synodontis guttatus</i>	☒	☐	☐	☐	☐	☐	☒	☐				CR	☐	☐		Restricted geographic range within the Niger basin's lower reaches—habitat influenced by delta hydrology and seasonal flooding—suggests a specialized distribution shaped by local conditions such as water chemistry and flow.
Birds																	
CHORDATA/ AVES	<i>Actitis hypoleucos</i>	☐	☒	☐	☐	☒	☐	☐	☐				LC	☐	☐		Migrates annually between Eurasia and Africa. Mangrove mudflats and creeks provide essential stopover and non-breeding habitat.
CHORDATA/ AVES	<i>Ardea cinerea</i>	☐	☒	☐	☐	☒	☐	☐	☐				LC	☐	☐		A Palearctic migrant using Niger Delta mangroves as wintering grounds. Its presence links the site to international migratory flyways, demonstrating transboundary ecological connectivity.
CHORDATA/ AVES	<i>Egretta gularis gularis</i>	☒	☒	☐	☐	☐	☐	☐	☐				VU	☒	☐		A mangrove-dependent coastal bird widespread along the West African coast. The Niger Delta provides critical feeding and roosting habitat, supporting regional populations and fulfilling
CHORDATA/ AVES	<i>Limosa limosa</i>	☐	☒	☐	☐	☒	☐	☐	☐				NT	☐	☐		Migrates annually between Eurasia and Africa. Mangrove mudflats and creeks provide essential stopover and non-breeding habitat.
CHORDATA/ AVES	<i>Necrosyrtes monachus</i>	☒	☐	☐	☐	☐	☐	☐	☐				CR	☐	☒		
CHORDATA/ AVES	<i>Psittacus erithacus</i>	☒	☐	☐	☐	☐	☐	☐	☐				EN	☒	☐		
CHORDATA/ AVES	<i>Rynchops flavirostris</i>	☐	☐	☐	☐	☒	☐	☐	☐				LC	☐	☐		Uses large river mouths and estuarine systems for feeding. Its conservation status elevates the international significance of Niger Delta wetlands under

1) Percentage of the total biogeographic population at the site

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

Name of ecological community	Community qualifies under Criterion 2?	Description	Justification
landward mangrove zone	☒	Majorly consists of shrubs with few trees	A critical biodiversity connectivity between the land and sea.
coastal inland zone	☒	Consists of mangrove species , mainly Rhizophora, with tall plants between 3 – 5 m high, and soft mud	The mangrove forest in the Niger Delta including the coastal inland mangrove forest Ogoniland wetland specifically, is being threatened by anthropogenic activities such as crude oil spills, harvesting, and Nipa palm invasion
Mangrove swamp forest	☒	Consists of trees and shrubs, and consists of all six species commonly found in the region	The mangrove forest in the Niger Delta Ogoniland wetland specifically, is being threatened by anthropogenic activities such as crude oil spills, urbanization, harvesting waste disposal, and Nipa palm invasion

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

4.1 - Ecological character

Ecosystem Components

The Ogoniland mangrove forest forms part of the Niger Delta coastal wetland system and is characterized by extensive intertidal mangrove forests, tidal creeks, mudflats, and estuarine waters. The vegetation is dominated by true mangrove species, principally *Rhizophora racemosa*, *R. harrisonii*, and *R. mangle*, with *Avicennia germinans* occurring in higher-elevation, less frequently inundated zones. These mangroves transition landward into freshwater swamp forests and lowland alluvial plains.

Faunal components include a high diversity of estuarine and marine fish, crustaceans (e.g., crabs and shrimps), mollusks (periwinkles and oysters), reptiles, and waterbirds, many of which depend on mangrove habitats for breeding, nursery, and feeding functions. Substrates consist mainly of fine-grained, organic-rich, waterlogged sediments, typically anaerobic and sulphide-rich, which are fundamental to mangrove productivity and nutrient dynamics.

Ecosystem Processes

The ecological character of the site is maintained by tidal exchange and hydrological connectivity between rivers, creeks, and estuarine waters. Regular tidal inundation governs salinity gradients, sediment deposition, and nutrient cycling, enabling high primary productivity. Mangrove litter production and decomposition drive detritus-based food webs, supporting benthic fauna and higher trophic levels.

Mangrove root systems play a key role in sediment trapping, shoreline stabilization, and vertical accretion, contributing to delta formation and coastal resilience. Seasonal freshwater inflows regulate estuarine conditions and support fish migration and spawning cycles.

Ecosystem Services

The Ogoniland mangroves provide essential ecosystem services consistent with Ramsar wetland values:

- Provisioning services: fish, shellfish, fuelwood, poles, and non-timber forest products supporting local livelihoods.
- Regulating services: shoreline protection, erosion control, flood attenuation, water purification, and long-term carbon storage in biomass and sediments.
- Supporting services: critical nursery and spawning habitats for fisheries and maintenance of regional biodiversity.
- Cultural services: traditional resource use, cultural identity, and spiritual values associated with creeks and mangrove landscapes.

These services underpin food security, climate regulation, and socio-ecological resilience in Ogoniland and adjacent coastal areas.

Natural Variability in Ecological Character

Natural variability is driven by seasonal rainfall patterns, tidal regimes, and river discharge, resulting in periodic changes in salinity, water depth, and sedimentation rates. Vegetation structure and species composition vary along micro-topographic and salinity gradients, while fish and invertebrate populations exhibit seasonal and interannual fluctuations linked to breeding and migration cycles. Occasional extreme rainfall and coastal processes may alter creek morphology and mudflat distribution without fundamentally changing wetland type.

Past and Current Changes Affecting Ecological Character

The principal adverse changes to ecological character have resulted from chronic hydrocarbon pollution, including oil spills from pipelines, wellheads, and illegal refining activities. These impacts have caused widespread mangrove dieback, soil toxicity, impaired regeneration, and long-term sediment and groundwater contamination. Additional pressures include deforestation for fuelwood, land reclamation, infrastructure development, and population growth.

Remediation and restoration efforts, including environmental clean-up and mangrove replanting, are underway and represent steps toward recovery. However, complete restoration of ecological character is constrained by residual contamination, altered hydrology, and continuing anthropogenic pressures.

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

Marine or coastal wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
G: Intertidal mud, sand or salt flats	Gala	1	30000	Representative

4.3 - Biological components

4.3.1 - Plant species

Other noteworthy plant species

Phylum	Scientific name	Position in range / endemism / other
TRACHEOPHYTA/POLYPODIOPSIDA	<i>Asplenium aureum</i>	Endemism
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Conocarpus erectus</i>	Endemism
TRACHEOPHYTA/LILIOPSIDA	<i>Phoenix reclinata</i>	Endemism

Optional text box to provide further information

The wetland is a mangrove wetland with six species of true mangroves, excluding buttonwood. Other mangrove associate species are widely found in the mangrove, such as the date palm. Other trees include *Terminalia catappa*, *Mangifera indica*, *Cola pachycarpa*, *Paspalum vaginatum* and shrub: *Psidium guajava*, *Pandanus candelabrum*, *Hibiscus tiliaceus*, *Drepanocarpus lanatus*.

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/ACTINOPTERYGII	<i>Coptodon guineensis</i>				Endemism
MOLLUSCA/GASTROPODA	<i>Littoraria angulifera</i>				Endemism
CHORDATA/ACTINOPTERYGII	<i>Lutjanus agennes</i>				Endemism
MOLLUSCA/GASTROPODA	<i>Pachymelania aurita</i>				Endemism
MOLLUSCA/GASTROPODA	<i>Pachymelania fusca</i>				Endemism
MOLLUSCA/GASTROPODA	<i>Tympanotonos fuscatus</i>				Endemism

Optional text box to provide further information

This species contributes to the biological diversity of the wetland, and some are endemic to the region while serving as a source of food and nutrients for the local people, including as a source of income.

4.4 - Physical components

4.4.1 - Climate

Climatic region	Subregion
A: Tropical humid climate	Am: Tropical monsoonal (Short dry season; heavy monsoonal rains in other months)

Tropical monsoon (equatorial humid) climate, strongly influenced by the Atlantic Ocean and seasonal wind systems.

The area experiences high rainfall throughout the year, with an annual total ranging from 2,500 to over 4,000 mm, making it one of the wettest regions in West Africa. Rainfall is bimodal, with peaks typically between June–July and September, separated by a short August break. The wet season lasts 8–10 months, while the dry season is short and mild.

Temperatures are uniformly high year-round, averaging 26–28°C, with little seasonal variation. Daily temperature ranges are small due to persistent cloud cover and high humidity. Relative humidity is consistently high (often 80–95%), especially during the wet season.

The climate is driven by the south-westerly maritime winds from the Atlantic, which bring moist air and heavy rains. During the brief dry season (December–February).

4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres)

a) Maximum elevation above sea level (in metres)

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.

Niger Delta river 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 ☒

4.4.4 - Water regime

Source of water that maintains character of the site

Presence?	Predominant water source	
Marine water	☒	No change
Water inputs from precipitation	☐	No change
Water inputs from groundwater	☐	No change

(ECD) Connectivity of surface waters and of groundwater	There is connectivity between surface and groundwater at the site, which affects water quality (through mixing and potential nutrient or dissolved chemical transfers). Again, human activities (anthropogenic interference) at the site influence interaction
(ECD) Stratification and mixing regime	In terms of stratification; The upper (surface) layer is less saline (because of density variation), and has a higher temperature (primarily through direct solar radiation) The middle (intermediate) layer has a mix of fresh and salt water (brackish) and

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

☐

Please provide further information on sediment (optional):

Sediment is variable across the site and mainly composed of mud, chikoko roots, and sand. The site is rich in sediment and sediment strata. It is mainly made of fine-grained clay and silt particles. The sediment is rich in organic matter, derived from mangrove litter and other sources. Tidal currents influence the sediment accumulation. The condition here is primarily anaerobic, supporting a range of redox reactions and nutrient cycling through microbial activity in the sediments. The sediment regime significantly contributes to the food web's richness.

(ECD) Water turbidity and colour	Water at the site is usually turbid, and turbidity varies across the site. Turbidity is relatively high due to sediment
(ECD) Light - reaching wetland	Light reaching the wetland varies across the site. Light penetration to the wetland in general is relatively low to mode
(ECD) Water temperature	The water temperature at the site varies from the surface zone to the intermediate and bottom zones. It is highest at th

4.4.6 - Water pH

- Acid (pH<5.5)

☐
- Circumneutral (pH: 5.5-7.4)

☒
- Alkaline (pH>7.4)

☐
- Unknown

☐

Please provide further information on pH (optional):

Hydrogen ion concentration (pH) varies between 6.64 and 8.10. pH also varies across the site.

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

☐

Please provide further information on salinity (optional):

Salinity fluctuates from 5 psu (mesohaline) - 28 psu (polyhaline). The salinity of the site varies as salinity increases further afield (i.e., further away from the shoreline).

(ECD) Dissolved gases in water
The dissolved oxygen (DO) values ranged from 0 to 7.60 mg/L. The dissolved gases also varied at the site.

4.4.8 - Dissolved or suspended nutrients in water

- Eutrophic

☐
- Mesotrophic

☒
- Oligotrophic

☐

Dystrophic ☐

Unknown ☐

Please provide further information on dissolved or suspended nutrients (optional):

Nutrient levels at the site vary, but the site is generally mesotrophic. The mean nutrient levels were higher during flood tides, with the maximum mean nitrate ($0.97 \text{ mg/L} \pm 3.92$) recorded in the nipa swamp in April. In the native mangrove swamp, the maximum mean value ($0.20 \text{ mg/L} \pm 1.12$) was recorded in January during flooding, and the lowest value ($0.02 \text{ mg/L} \pm 1.17$) was recorded in March at low tide. Phosphate values were lower in the native mangrove than in the nipa swamp. However, phosphate concentrations in this study did not exceed 0.36 mg/l . The N:P was 7.2:1, implying the available nitrate concentration was approximately 50 % less of its natural ratio to phosphate. The average macroalgal nitrate content was 478.04 mg/kg during ebbing (low tide) and 538.06 mg/kg during high tide when the macroalgae-covered stilt roots were submerged (Zabbey et al., 2024)

(ECD) Dissolved organic carbon	The site's sediment is rich in organic carbon, but dissolved organic carbon concentrations also vary.
(ECD) Redox potential of water and sediments	The redox potential of water and the sediment at the site also varies.
(ECD) Water conductivity	Water conductivity at the site also varies across it. It fluctuates between 1400 and 53850 $\mu\text{S/Cm}$.

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 ☒

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

The surrounding areas are predominantly suburban, with other parts of the site utilized for both agricultural and residential purposes. Including the setting up of small fishing settlements.

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)	High
Wetland non-food products	Timber	High
Wetland non-food products	Fuel wood/fibre	High
Biochemical products	Extraction of material from biota	Medium
Genetic materials	Medicinal products	High
Genetic materials	Ornamental species (live and dead)	Medium

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Maintenance of hydrological regimes	Groundwater recharge and discharge	Medium
Erosion protection	Soil, sediment and nutrient retention	High
Pollution control and detoxification	Water purification/waste treatment or dilution	High
Climate regulation	Regulation of greenhouse gases, temperature, precipitation and other climatic processes	High
Climate regulation	Local climate regulation/buffering of change	High
Biological control of pests and disease	Support of predators of agricultural pests (e.g., birds feeding on locusts)	High
Hazard reduction	Flood control, flood storage	High
Hazard reduction	Coastal shoreline and river bank stabilization and storm protection	High

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Recreational hunting and fishing	Medium
Recreation and tourism	Water sports and activities	Low
Recreation and tourism	Picnics, outings, touring	Low
Recreation and tourism	Nature observation and nature-based tourism	Low
Spiritual and inspirational	Inspiration	Medium
Spiritual and inspirational	Spiritual and religious values	Medium
Scientific and educational	Educational activities and opportunities	Medium
Scientific and educational	Important knowledge systems, importance for research (scientific reference area or site)	Medium
Scientific and educational	Long-term monitoring site	High
Scientific and educational	Major scientific study site	High
Scientific and educational	Type location for a taxon	Medium

Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance
Biodiversity	Supports a variety of all life forms including plants, animals and microorganisms, the genes they contain, and the ecosystems of which they form a part	High
Soil formation	Accumulation of organic matter	High
Soil formation	Sediment retention	High
Nutrient cycling	Carbon storage/sequestration	High
Nutrient cycling	Storage, recycling, processing and acquisition of nutrients	High
Pollination	Support for pollinators	Medium

Optional text box to provide further information

Over 1 million people benefit from various goods and services offered outside the site

Other ecosystem service(s) not included above:

Provide a source of income to local people who run ferry activities and water transport along the waters

Within the site: 300,000

Outside the site: 1,000,000

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

Following HYPREP's restoration of degraded sections of the site, efforts have been made to establish alternative livelihood systems (an incentive mechanism) for people who heavily depend on the wetland for their sustenance (a bio-rights approach). In addition, awareness is periodically created among the people about the sustainable use of wetland resources and their conservation.

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

Description if applicable

Traditionally, the inhabitants of Ogoniland engaged primarily in fishing and subsistence farming. This opportunity offers good farming land and fishing waters, providing channels for transportation (Fetiman and Zabbey 2015)

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

Description if applicable

The local people depend on the mangrove wetland for food, fuelwood, and other cultural services. This perennial interaction between the Ogoni people and the region's mangroves shapes the area's ecological character.

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 ☒

Description if applicable

Medicinal uses of creek water. Several respondents noted the creek's importance for its healing powers in treating specific ailments and infections. The water was mainly used to treat eye infections (locally known as apolo), which were prevalent during the dry season. Several interviewees mentioned that salt water was suitable for cleaning out 'infections,' such as conjunctivitis. The water was regarded as a healing agent, and children with infections were plunged into it, with their eyes bathed in the salt. It was believed that the water would 'heal' the disease. Other interviews revealed that the water was also used to treat children with chickenpox. A male elder illustrated a description of a ritual undertaken for a high fever. 'There is a special sickness that attacks you with a high temperature – your body is burning – and you are taken to the creek, and you have to dive into the water. You are forced to go under a boat in the creek. You are then given cassava leaves, scrubbed with them, and then palm oil is applied. After this, it is believed that the sickness will leave you and you will be healed (Fetiman and Zabbey, 2015)

4.6 - Ecological processes

(ECD) Primary production	It has high primary productivity, with above-ground NPP (Net Primary Production) exceeding 6 tons per hectare per year, primarily from wood and litterfall. It also has a rich below-ground production. This accounts for a rich total net primary production i
(ECD) Nutrient cycling	The site has a good history of nutrient cycling. Characteristically, it supports nitrogen, phosphorus, and sulphur cycling and maintains the site's biogeochemical functions and food web, keeping them active and rich. The mineralization processes are engin
(ECD) Carbon cycling	The site is active in absorbing carbon dioxide from the atmosphere (a process that sequesters carbon as a carbon sink), fixing it in biomass and soil for biogeochemical functions, and later releasing carbon and exchanging it with the atmosphere, if distur
(ECD) Animal reproductive productivity	The site supports a range of animal reproductive production. Fishes, crabs, prawns, and a host of other animals depend on the mangrove for their spawning, nesting, and protection from predators at their early stages of development. Some bird species use t
(ECD) Vegetational productivity, pollination, regeneration processes, succession, role of fire, etc.	The site is significant in supporting vegetation productivity, regeneration, and succession processes through its rich environment, which provides opportunities for enhanced pollination, a massive food web, nutrient cycling, and gene pools, among others.
(ECD) Notable species interactions, including grazing, predation, competition, diseases and pathogens	The site is notable in species interactions in a complex food web among the faunal and floral communities. It has a range of biotic component from planktons (zooplanktons and phytoplankton) to micro and macro-invertebrates, vertebrates, non-vascular and v
(ECD) Notable aspects concerning animal and plant dispersal	On the site, dispersal rates of animals and plants are high. These are primarily facilitated by tidal water, the intertidal environment, and mangrove roots. The mangroves exhibit vivipary – their buoyant propagules float and are dispersed by water current
(ECD) Notable aspects concerning migration	The migration of mangroves (primarily due to factors such as sea level rise and salt intrusion) is low at the site.
(ECD) Pressures and trends concerning any of the above, and/or concerning ecosystem integrity	The ecosystem of the site is unique with rich biodiversity (marine and terrestrial plant and animal species – including algae, herbs, trees (including mangrove spp. and other economic trees), shrubs, periwinkles, insects, crabs, prawns, fishes, birds, rep

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.	☒	☒
Other public ownership	☒	☒

Private ownership

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

Other

Category	Within the Ramsar Site	In the surrounding area
Commoners/customary rights	☒	☒

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

While it is a constitutional right that all lands belong to the government, most mangrove ecosystems are communally owned in Ogoniland and managed by the community

5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site:

1. Federal Ministry of Environment
2. Hydrocarbon Pollution Remediation Project (HYPREP)
3. Civil society and community-based organizations
4. Community Chiefs and community development committees

Provide the name and/or title of the person or people with responsibility for the wetland:

The Kings and Council of Chiefs in various communities within the Ogoniland wetland are responsible for the wetland

Postal address:

Postal address: 8 Ken-Saro Wiwa Road, Port Harcourt, Rivers State, Nigeria
E-mail address: nenibarini.zabbey@hyprep.gov.ng

E-mail address:

nenibarini.zabbey@hyprep.gov.ng

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	High impact	High impact	☐	☒
Commercial and industrial areas	High impact	High impact	☒	☒

Water regulation

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Dredging	Medium 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	High impact	High impact	☒	☒
Marine and freshwater aquaculture	Medium impact	Medium impact	☒	☒

Energy production and mining

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Oil and gas drilling	High impact	High impact	☒	☒
Mining and quarrying	Medium impact	Medium impact	☒	☒

Transportation and service corridors

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Roads and railroads	Medium impact	Medium impact	☒	☒
Utility and service lines (e.g., pipelines)	Medium impact	Medium impact	☒	☒

Biological resource use

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Hunting and collecting terrestrial animals	High impact	High impact	☒	☒
Gathering terrestrial plants	Medium impact	High impact	☒	☒
Logging and wood harvesting	High impact	High impact	☒	☒
Fishing and harvesting aquatic resources	High impact	High impact	☒	☒

Human intrusions and disturbance

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Recreational and tourism activities	Low impact	Low impact	☒	☒

Natural system modifications

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Vegetation clearance/ land conversion	Medium 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	High 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	☒	☒
Industrial and military effluents	Medium impact	Medium impact	☒	☒
Garbage and solid waste	Medium impact	High impact	☒	☒

Climate change and severe weather

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Habitat shifting and alteration	Medium impact	Medium 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	Proposed

Habitat

Measures	Status
Re-vegetation	Implemented

Species

Measures	Status
Control of invasive alien plants	Partially implemented

Human Activities

Measures	Status
Research	Partially implemented

Other:

The potential for an oil spill is a significant threat, as the pipeline network runs through the site.

5.2.5 - Management planning

Is there a site-specific management plan for the site? In preparation

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 ☒

URL of site-related webpage (if relevant): hyprep.gov.ng

5.2.6 - Planning for restoration

Is there a site-specific restoration plan? Yes, there is a plan

Further information

The ecological character of the Ogoniland mangrove forest has been severely degraded by chronic hydrocarbon pollution arising from oil spills, leaking pipelines, wellheads, illegal bunkering, and artisanal refining. Persistent oil contamination has caused widespread mangrove dieback, soil toxicity, inhibited natural regeneration, and long-term pollution of sediments and groundwater.

Deforestation and overharvesting of mangrove wood for fuel, construction, and fish smoking have reduced forest cover and fragmented habitats. Land reclamation, infrastructure development, and settlement expansion have altered natural hydrology, restricted tidal exchange, and increased erosion and flooding risks.

Additional pressures include solid waste dumping, sewage discharge, and agricultural runoff, which degrade water quality and contribute to eutrophication. Climate-related threats, such as sea-level rise, increased flooding, and shoreline erosion, further exacerbate mangrove stress, particularly where natural resilience has already been weakened by pollution and habitat loss.

5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Soil quality	Implemented
Water quality	Implemented
Plant community	Implemented
Birds	Proposed

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

Erich R. Gundlach, Izuchukwu Uche, Ogonnaya Iroakasi, Nicholas I. Story, Chapter 10 – Remediation of oiled mangroves: Lessons from the Niger Delta, Editor(s): Merv Fingas, Oil Spill Science and Technology (Third Edition), Elsevier, 2025, Pages 573-628, <https://doi.org/10.1016/B978-0-443-21703-6.00005-9>

Badom, A.K, Chima, U.D, Fredrick, C, Alex, A & Ubaekwe, R.E (November, 2024) Assessment of heavy Metal Content in the Soil and Vegetation of Mangrove Forest after Oil Spill in Bodo Community, Rivers State, Nigeria. Journal of Applied Science, Environment and Management. Vol. 28 (11) 3703-3709. ISSN 1119-8362. Electronic ISSN 2659-1499.

Gundlach, E.R., 2018. Oil-related mangrove loss East of Bonny River, Nigeria. In: Makowski, C., Finki, C.W. (Eds.), Threats to Mangrove Forests: Hazard Vulnerability and Management Solutions Springer. Coastal Research Library, Cham, pp. 267–321. https://link.springer.com/chapter/10.1007/978-3-319-73016-5_13

Gundlach, E.R., Giadom, F.D., Akpokodje, G.E., Bonte, M., Tse, A.C., Ekeocha, N.E., Acra, E.J., 2021a. Core sediments and oil chemistry from contaminated mangrove in eastern Niger Delta Ogoniland Nigeria. Mar. Pollut. Bull. 171, 112714 <https://doi.org/10.1016/j.marpolbul.2021.112714>.

Gundlach, E.R., McArthur, A., Iroakasi, O., Bonte, M., Giadom, F.D., Shekwolo, P., Visigah, K., 2021b. Cleanup and restoration of 1000 ha of Oiled Mangroves, Bodo, Eastern Niger Delta, Nigeria. IOSC Proc. 2021 (1), 688932 <https://doi.org/10.7901/2169-3358-2021.1.688932>.

Gundlach, E.R., Bonte, M., Story, N., Iroakasi, O., 2022. Using high-resolution imagery from 2013 and 2020 to establish baseline vegetation in oil-damaged mangrove habitat prior to large-scale post-remediation planting in Bodo. East. Niger. Delta, Niger. Remote Sens. Appl.: Soc. Environ. 28, 100831 <https://doi.org/10.1016/j.rsase.2022.100831>.

Izuchukwu Uche, Erich Gundlach, Godwin Mbamalu, Survivability and growth performance of using Rhizophora mangrove life stages in the revegetation of mangrove forest, Regional Studies in Marine Science, Volume 67, 2023, 103228, <https://doi.org/10.1016/j.rsma.2023.103228>.

Nwobi, C., Williams, M. and Mitchard, E. T.A. (2020). Rapid mangrove forest loss and nipa palm (*Nypa fruticans*) expansion in the Niger Delta, 2007-2017. Remote Sensing 12(14):2344. <https://doi.org/10.3390/rs12142344>

Onwugbata-Enyi, J., Zabbey, N. and Erundu, E.S. (2008). Water quality of Bodo Creek in the lower Niger Delta basin. Advan. Environ. Biol. 2(3): 132 - 136.

Rapid Biodiversity Assessment of Bomu Creek. Technical Report prepared for the Hydrocarbon Pollution Remediation Project (HYPER). December 2023.

Saunders, D., Juan, C.C., Gundlach, E., Iroakasi, O., Kabari, V., Nenibarini, Z., Matthijs, B., 2022. Analysis of polycyclic aromatic hydrocarbons (PAHs) in surface sediments and edible aquatic species in an oil-contaminated mangrove ecosystem in Bodo, Niger Delta, Nigeria: bioaccumulation and human health risk assessment. Sci. Total Environ., 1548

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)

<1 file(s) uploaded>

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>

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



Revegetated mangroves showing water channels (HYPER, 21-11-2025)



Open channel showing fisherfolk in a boat and mangrove vegetation (HYPER, 11-03-2025)



Mangrove forest and locals swimming during low tide (HYPER, 24-12-2024)

6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation 2025-10-21