



## 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 Keta Lagoon Complex Ramsar Site consists of a large expanse of open lagoon with brackish water, flood plain, marshland and extensive mangrove stands. The site falls within the coastal savannah ecological zone of Ghana and follows a catchment boundary and the Volta River to the west which is also adjacent to another Ramsar Site ; the Songor Ramsar Site and Biosphere Reserve. The Keta Lagoon is the largest lagoon in Ghana. It is the largest water body in the KLCRS and covers a significant portion of the eastern section of the site. It is estimated to hold 300 km<sup>2</sup> of water which varies seasonally and is fed from a catchment area of around 2900 km<sup>2</sup>.

Grasses dominate this vegetation type with patches of trees and shrubs. Fifteen families of fin fishes comprising 18 genera and 20 species have been recorded in the lagoon. The wetland is also home to several species of rodents, Nile monitor, African/royal python, 3 species of marine turtles, manatees and macro-invertebrates such as crabs, molluscs. The site also supports large numbers of water birds. The site has numerous settlements with fishing (both marine and lagoon), salt mining, vegetable farming, craft making and mangrove exploitation for fuelwood are the main sources of income for the local people.

The site also provides other ecosystem services including; Flood hazard regulation, Storm hazard regulation, Water purification and Salinity regulation among others.

## 2 - Data & location

### 2.1 - Formal data

#### 2.1.1 - Name and address of the compiler of this RIS

##### Responsible compiler

Institution/agency

Postal address

##### National Ramsar Administrative Authority

Institution/agency

Postal address

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

From year

To year

#### 2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)

#### 2.1.4 - Changes to the boundaries and area of the Site since its designation or earlier update

(Update) A. Changes to Site boundary Yes  No

(Update) B. Changes to Site area No change to area

(Update) For secretariat only: This update is an extension

#### 2.1.5 - Changes to the ecological character of the Site

(Update) 6b i. Has the ecological character of the Ramsar Site (including applicable Criteria) changed since the previous RIS? Not evaluated

## 2.2 - Site location

### 2.2.1 - Defining the Site boundaries

#### b) Digital map/image

<2 file(s) uploaded>

Former maps

#### Boundaries description

The Keta Lagoon Complex lies in the far south-east of the country, near the international frontier with Togo. The southern and eastern boundary follows the shoreline of the sea (Gulf of Guinea). The rest of the boundary line follows a catchment boundary and the Volta River which is also adjacent to another Ramsar Site ; the Songor Ramsar Site and Biosphere Reserve.

### 2.2.2 - General location

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

b) What is the nearest town or population centre?

### 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): 136000

Area, in hectares (ha) as calculated from GIS boundaries 135871.758

## 2.2.5 - Biogeography

### Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Udvardy's Biogeographical Provinces	Afrotropical

### 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 total area of water of the site in 2020 is estimated at 321.54 km<sup>2</sup>, a relatively stable surface area compared to a decade ago. The major hydrological systems comprise of the Volta River, Keta Lagoon, Avu Lagoon, Todzie River and the rivers of Aka and Belikpa. Generally, the stream flow is seasonal and corresponds with the dry and wet seasons. The Keta Lagoon is the largest in Ghana. It is the largest water body in the KLCRS and covers a significant portion of the eastern section of the site. It is estimated to hold 300 km<sup>2</sup> of water which varies seasonally and is fed from a catchment area of around 2900 km<sup>2</sup>. The average depth of the Keta Lagoon fluctuates between 0.48m-1.46m depending on the time of year. The KLCRS has high groundwater refill and storage potential due to deep, well-developed permeable soil, dense vegetation cover and gentle slope nature. The mangrove and wetland regions moderate and slow down water flow which allows groundwater recharge and provides flood relief to surrounding areas. This is hugely valuable to surrounding rural communities as they rely on groundwater for crop irrigation (Shallots, peppers, okra, tomato, chilli pepper, maize, cassava are mainly grown) and drinking water and often farm in and around the rich, fertile floodplains and water bodies. Mangrove ecosystems and general vegetation in the KLCRS also serve as protectors of soil in the case of coastal erosion. Also serves as a major source of protein; mangrove oysters, shrimps, fish etc. Also provides; Flood hazard regulation, Storm hazard regulation, Water purification and Salinity regulation among others.

Other ecosystem services provided

Several other ecosystem services derived from the site classified across; provisioning, regulatory, cultural and supporting services. Some of these include; source for fuelwood, fodder for livestock, natural medicines, salt etc. Find assessment of ecosystem services on page 42 of site management plan in 'Additional materials' section.

Criterion 3 : Biological diversity

Justification

The mangrove ecosystems host a vast amount of biodiversity and are one of the most productive ecosystems in the world. They house a huge variety of birds (migratory and non-migratory), marine creatures (fish nurseries, turtles, manatees, crustaceans, etc.), and reptiles, in addition to associated flora. The enormous amount of fish and invertebrates that live in these coastal waters provides an abundance of food for monkeys, turtles, aquatic birds, and other marine life, as well as communities living alongside them. More than 1% of the global population of two species of waterbird live within the mangrove areas as they provide feeding, roosting and nesting sites, namely: the Whiskered tern (*Chlidonias hybridus*) and the Caspian tern (*Hydroprogne caspia*). It is the home of the world's only amphibious buck, the sitatunga, and provides habitats for many wetland dependent wildlife including three globally threatened turtle species. The lagoon waters provide important habitats and nurseries for migratory and juvenile fish populations which are critical in fish stock replenishment. Over fifteen families of fin fishes comprising 18 genera and 20 species have been recorded. The wetland is also home to African/Royal pythons, several species of rodents, the Nile monitor, manatees and macro-invertebrates such as crabs, molluscs and shrimps

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

Optional text box to provide further information

This site provides habitat support as nesting and breeding grounds for several birds. It provide feeding, roosting and nesting sites, namely: the Whiskered tern (*Chlidonias hybridus*) and the Caspian tern (*Hydroprogne caspia*), etc,

Criterion 5 : >20,000 waterbirds

Overall waterbird numbers

Start year

End year

Source of data:

Criterion 6 : >1% waterbird population

Optional text box to provide further information

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
<b>Plantae</b>								
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Allophylus africanus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC	<input type="checkbox"/>		
TRACHEOPHYTA/LILIOPSIDA	<i>Aloe tenuifolia</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		
TRACHEOPHYTA/LILIOPSIDA	<i>Andropogon gayanus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Avicennia africana</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		
TRACHEOPHYTA/LILIOPSIDA	<i>Brachiaria mutica</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC	<input type="checkbox"/>		
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Ceiba pentandra</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC	<input type="checkbox"/>		
TRACHEOPHYTA/LILIOPSIDA	<i>Cocos nucifera</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Ludwigia hyssopifolia</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC	<input type="checkbox"/>		
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Mangifera foetida</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC	<input type="checkbox"/>		
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Nymphaea lotus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC	<input type="checkbox"/>		
TRACHEOPHYTA/LILIOPSIDA	<i>Paspalum dissectum</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC	<input type="checkbox"/>		
TRACHEOPHYTA/LILIOPSIDA	<i>Paspalum scrobiculatum</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC	<input type="checkbox"/>		
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Rhizophora mangle</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Sesbania sesban</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC	<input type="checkbox"/>		
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Sesuvium portulacastrum</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC	<input type="checkbox"/>		
TRACHEOPHYTA/LILIOPSIDA	<i>Sporobolus virginicus</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	LC	<input type="checkbox"/>		

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 <sup>1)</sup>	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								

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								
<b>Birds</b>																	
CHORDATA/AVES	<i>Anastomus lamelligerus</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1127	2020-2023		LC	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/AVES	<i>Ardea alba</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1027	2020-2023		LC	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/AVES	<i>Ardea cinerea</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	617	2020-2023		LC	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/AVES	<i>Calidris alba</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	512	2020-2023		LC	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/AVES	<i>Calidris ferruginea</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5040	2020-2023	1.26	NT	<input type="checkbox"/>	<input type="checkbox"/>		Supports at least 1% of the Western Siberia/West Africa biogeographical population
CHORDATA/AVES	<i>Calidris minuta</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1930	2020-2023		LC	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/AVES	<i>Charadrius hiaticula</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5460	2020-2023	2.3	LC	<input type="checkbox"/>	<input type="checkbox"/>		Supports at least 1% of the psammodromus, Canada, Greenland & Iceland/W & S Africa biogeographical population
CHORDATA/AVES	<i>Charadrius marginatus</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	18	2020-2023		LC	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/AVES	<i>Charadrius pecuarius</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	308	2020-2023		LC	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/AVES	<i>Chlidonias hybrida</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				LC	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/AVES	<i>Chlidonias niger</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	67	2020-2023		LC	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/AVES	<i>Dendrocygna viduata</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8925	2020-2023	1.37	LC	<input type="checkbox"/>	<input type="checkbox"/>		Supports at least 1% of the West Africa (Senegal to Chad) biogeographical population
CHORDATA/AVES	<i>Egretta garzetta</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3027	2020-2023		LC	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/AVES	<i>Glareola pratincola</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	292	2020-2023	1.46	LC	<input type="checkbox"/>	<input type="checkbox"/>		Supports at least 1% of the pratincola, Western Europe & NW Africa/West Africa biogeographical population
CHORDATA/AVES	<i>Himantopus himantopus</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2149	2020-2023	1.79	LC	<input type="checkbox"/>	<input type="checkbox"/>		Supports at least 1% of the himantopus, Sub-Saharan Africa (excluding south) biogeographical population
CHORDATA/AVES	<i>Hydroprogne caspia</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	198	2020-2023		LC	<input type="checkbox"/>	<input type="checkbox"/>		Serves as nesting and breeding ground for species.
CHORDATA/AVES	<i>Microcarbo africanus</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8608	2020-2023	8.6	LC	<input type="checkbox"/>	<input type="checkbox"/>		Supports at least 1% of the africanus, W Africa biogeographical population
CHORDATA/AVES	<i>Pluvialis squatarola</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	107	2020-2023		LC	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/AVES	<i>Sterna hirundo</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1219	2020-2023		LC	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/AVES	<i>Sternula albifrons</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	535	2020-2023	2.4	LC	<input type="checkbox"/>	<input type="checkbox"/>		Supports at least 1% of the albifrons, Europe north of Mediterranean (bre)biogeographical population
CHORDATA/AVES	<i>Thalasseus maximus</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	523	2020-2023		LC	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/AVES	<i>Tringa erythropus</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	256	2020-2023		LC	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/AVES	<i>Tringa nebularia</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2691	2020-2023		LC	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/AVES	<i>Tringa stagnatilis</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	51	2020-2023		LC	<input type="checkbox"/>	<input type="checkbox"/>		

1) Percentage of the total biogeographic population at the site

The site supports regularly  $\geq 1\%$  of the biogeographic population of the tern species namely the Whiskered tern (*Chlidonias hybridus*) and the Caspian tern (*Hydroprogne caspia*). Other congregation of waterbirds species such as White-faced tree duck (*Dendrocygna viduata*), Great white egret (*Ardea alba*), Wood sandpiper (*Tringa glareola*), Ringed Plover (*Charadrius hiaticula*), Curlew Sandpiper (*Calidris ferruginea*), Little Stint (*Calidris minuta*) are also supported by the resources of the site.

Migrant birds begin to arrive on the site in late August, and their numbers peak in September-November. The birds start to leave the area at the onset of the dry season, when large sections of the lagoon dry up; by January, the bird population is drastically less than the autumn peak (Piersma & Ntiamao-Baidu, 1995). These population estimates of waterbirds are however from IWC bird counts done in January 2020,2021,2022 and 2023.

### 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
Species	<input type="checkbox"/>	Marine turtles, Manatees, Nile monitors, Migratory and resident birds species are found in their numbers in the area	
Habitats	<input type="checkbox"/>	Reed, mangrove swamps, coastline	



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

### 4.1 - Ecological character

The lagoon is an extensive, brackish water body situated to the east of the Volta River estuary comprising the open water of the lagoon and the surrounding flood-plains marshlands and mangrove swamps. The site falls within the coastal savannah ecological zone of Ghana. Grasses dominate this vegetation type with patches of trees and shrubs. The total area of water of the site in 2020 is estimated at 321.54 km<sup>2</sup>, a relatively stable surface area compared to a decade ago. The major hydrological systems comprise of the Volta River, Keta Lagoon, Avu Lagoon, Todzie River and the rivers of Aka and Belikpa . Generally, the stream flow is seasonal and corresponds with the dry and wet seasons. The Keta Lagoon is the largest in Ghana fluctuating between 0.48m-1.46m depending on the time of year. It is the largest water body in the KLCRS and covers a significant portion of the eastern section of the site.

The lagoon is bordered by numerous settlements and the surrounding floodplain consists of marsh, scrub, farmland and substantial mangrove stands, which are heavily exploited for fuelwood. The wetland is also home to several key water bird species and many species of rodents, Nile monitor, African/royal python, 3 species of marine turtles, manatees and macro-invertebrates such as crabs, and molluscs. It is the home of the world's only amphibious buck, the sitatunga, and provides habitats for many wetland-dependent wildlife including three globally threatened turtle species. The lagoon waters provide important habitats and nurseries for migratory and juvenile fish populations which are critical in fish stock replenishment. Over fifteen families of fin fishes comprising 18 genera and 20 species have been recorded. The site also supports large numbers of. The site has numerous settlements with fishing (both marine and lagoon), salt mining, vegetable farming (Shallots, peppers, okra, tomato, chilli pepper, maize, cassava are mainly grown), craft making and mangrove exploitation for fuelwood are the main sources of income for the local people.

### 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
F: Estuarine waters				
G: Intertidal mud, sand or salt flats		0		Unique
H: Intertidal marshes		0		
I: Intertidal forested wetlands		0		Unique
J: Coastal brackish / saline lagoons		1		Representative
K: Coastal freshwater lagoons		0		Representative

#### 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		0		
Saline, brackish or alkaline water > Lakes >> Q: Permanent saline/brackish/alkaline lakes		0		
Saline, brackish or alkaline water > Lakes >> R: Seasonal/intermittent saline/brackish/alkaline lakes and flats		0		
Saline, brackish or alkaline water > Marshes & pools >> Sp: Permanent saline/brackish/alkaline marshes/pools		0		

#### Human-made wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type
2: Ponds		0	
3: Irrigated land		0	
4: Seasonally flooded agricultural land		0	
5: Salt exploitation sites			
9: Canals and drainage channels or ditches		0	

### 4.3 - Biological components

#### 4.3.1 - Plant species

##### Other noteworthy plant species

Phylum	Scientific name	Position in range / endemism / other
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Adansonia digitata</i>	
TRACHEOPHYTA/MAGNOLIOPSIDA	<i>Azadirachta indica</i>	
TRACHEOPHYTA/LILIOPSIDA	<i>Phoenix reclinata</i>	
TRACHEOPHYTA/LILIOPSIDA	<i>Typha domingensis</i>	

### 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/REPTILIA	<i>Chelonia mydas</i>				
CHORDATA/REPTILIA	<i>Dermochelys coriacea</i>				
CHORDATA/MAMMALIA	<i>Tragelaphus spekii</i>				
CHORDATA/MAMMALIA	<i>Trichechus senegalensis</i>				

## 4.4 - Physical components

### 4.4.1 - Climate

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

### 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

### 4.4.3 - Soil

Mineral

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Organic

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

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

Water permanence

Presence?	Changes at RIS update
Usually seasonal, ephemeral or intermittent water present	
Usually permanent water present	No change

Source of water that maintains character of the site

Presence?	Predominant water source	Changes at RIS update
Water inputs from precipitation	<input type="checkbox"/>	No change
Marine water	<input type="checkbox"/>	No change
Water inputs from surface water	<input type="checkbox"/>	No change

Water destination

Presence?	Changes at RIS update
Marine	No change

Stability of water regime

Presence?	Changes at RIS update
Water levels fluctuating (including tidal)	No change

#### 4.4.5 - Sediment regime

Sediment regime unknown

#### 4.4.6 - Water pH

Alkaline (pH>7.4)

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Unknown

#### 4.4.7 - Water salinity

Fresh (<0.5 g/l)

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

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

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Euhaline/Eusaline (30-40 g/l)

(Update) Changes at RIS update No change  Increase  Decrease  Unknown

Unknown

#### 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 i) broadly similar  ii) significantly different  site itself:

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)	High
Fresh water	Drinking water for humans and/or livestock	High
Fresh water	Water for irrigated agriculture	High
Wetland non-food products	Fuel wood/fibre	

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Erosion protection	Soil, sediment and nutrient retention	Medium
Pollution control and detoxification	Water purification/waste treatment or dilution	
Climate regulation	Local climate regulation/buffering of change	Medium

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Recreational hunting and fishing	
Spiritual and inspirational	Spiritual and religious values	
Scientific and educational	Important knowledge systems, importance for research (scientific reference area or site)	
Scientific and educational	Educational activities and opportunities	

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	Medium

Within the site:

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
- 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
Local authority, municipality, (sub)district, etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

##### Private ownership

Category	Within the Ramsar Site	In the surrounding area
Other types of private/individual owner(s)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

##### Other

Category	Within the Ramsar Site	In the surrounding area
Unspecified mixed ownership	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Commoners/customary rights	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

#### 5.1.2 - Management authority

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

Wildlife Division/(Forestry Commission)  
Keta Lagoon Complex Ramsar Site  
P.O. Box KW 115, Keta, Ghana

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

Lawrence Tetteh (Site Manager)

Postal address:

Wildlife Division/(Forestry Commission)  
Keta Lagoon Complex Ramsar Site  
P.O. Box KW 115, Keta, Ghana

E-mail address:

kissocloo@yahoo.co.uk

## 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	Changes	In the surrounding area	Changes
Housing and urban areas	Medium impact	Medium impact	<input type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change
Commercial and industrial areas	Medium impact		<input type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change
Unspecified development			<input type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

#### Agriculture and aquaculture

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Marine and freshwater aquaculture	Medium impact		<input checked="" type="checkbox"/>	No change	<input type="checkbox"/>	No change

#### Biological resource use

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Hunting and collecting terrestrial animals		Medium impact	<input checked="" type="checkbox"/>	No change	<input type="checkbox"/>	No change
Gathering terrestrial plants		Medium impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change
Fishing and harvesting aquatic resources			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

#### Human intrusions and disturbance

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Recreational and tourism activities		Low impact	<input checked="" type="checkbox"/>	No change	<input type="checkbox"/>	No change

#### Natural system modifications

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Vegetation clearance/land conversion	Medium impact		<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change
Unspecified/others			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

Invasive and other problematic species and genes

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Problematic native species		Medium impact	<input checked="" type="checkbox"/>	No change	<input type="checkbox"/>	No change

Pollution

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Garbage and solid waste	Medium impact		<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

### 5.2.2 - Legal conservation status

Non-statutory designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Important Bird Area	Keta Lagoon Complex		whole

### 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

### 5.2.4 - Key conservation measures

Legal protection

Measures	Status
Legal protection	Implemented

Human Activities

Measures	Status
Communication, education, and participation and awareness activities	Partially implemented
Research	Implemented

### 5.2.5 - Management planning

Is there a site-specific management plan for the site? Yes

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:

No

### 5.2.6 - Planning for restoration

Is there a site-specific restoration plan? No need identified

5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Birds	Implemented

## 6 - Additional material

### 6.1 - Additional reports and documents

#### 6.1.1 - Bibliographical references

Ameyaw-Ekumfi, C., Attuquayefio, D.K., Amakye, J.S., Dankwa, H.R. and Nyame, S.K. 1998. Ghana National Wetlands Strategy: Wetlands Faunal Diversity Information Study. Coastal Wetland Management Project Report. 66pp.

Finlayson, C.M., Gordon, C., Ntiamoah-Badu, Y., Tumbulto, J. And Stors, M. 1998. Hydrobiology of the Songor and Keta Lagoons: Implications for Wetland Management in Ghana. Ghana Coastal Wetland Management Project. 135pp.

Hall, J.B. and Swaine, M.D.(1981). Distribution and Ecology of Vascular plants: In Gordon C. (Ed). Hydrology of the Lower Volta Mangrove Project. Technical Report No. 7. DFID/GWD/EPA. 56pp.

Ntiamoah-Badu, Y. And Gordon, C. 1991. Coastal Wetland Management Plans of Ghana Report to World Bank. Dept of Zoology, University of Ghana, Accra

Ryan, J. And Ntiamoah-Badu, Y. (1997). Studies on the Terrestrial Fauna of Coastal Ramsar Sites. Ghana Coastal Wetland Management Project.

Tuffour,K 1999. Keta Lagoon Complex Ramsar Site Management plan. Ghana Coastal Wetland Management Project. 65pp.

World Bank (1997) Towards an Integrated Coastal Management Strategy for Ghana. World Bank, Washington & Environmental Protection Agency, Accra. 137pp.

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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)

<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

<3 file(s) uploaded>

vi. other published literature

<no file available>

#### 6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



picture of the site ( Wildlife Division (Forestry Commission), 16-01-2015 )



picture of the site ( Wildlife Division (Forestry Commission), 16-01-2015 )



picture of the site ( Wildlife Division (Forestry Commission), 16-01-2015 )



picture of the site ( Wildlife Division (Forestry Commission), 16-01-2015 )

#### 6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation