



Ramsar Information Sheet

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Myanmar Gulf of Mottama



Designation date	10 May 2017
Site number	2299
Coordinates	16°59'10"N 97°01'09"E
Area	161 030,00 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 Gulf of Mottama is a large and generally undisturbed funnel-shaped estuary with extensive tidal flats. Its tidal cycle is extremely pronounced in speed and amplitude, causing a powerful bore phenomenon which is highly unusual in the region and which makes this one of the most dynamic estuaries in the world, with constant sediment redistribution, channel-shifts, erosion and accretion on a large scale. The high productivity of the system supports a rich biota including abundant invertebrates, important nursery areas for marine fish and up to 150,000 migratory waterbirds in the non-breeding season. These include three globally threatened species and internationally important numbers of 19 species. The Gulf is one of the world's most important wintering areas for the critically endangered Spoon-billed Sandpiper, hosting probably more than half of the remaining global population. In addition, it supports the livelihoods of thousands of people through fisheries, important at local, national and regional level. Consultations with local government and communities have been held to support the designation of the Site. The Site is receiving support from various projects supporting the development of local governance mechanism from the Site, including local authorities and communities, as well as the development and future implementation of a management plan covering the Ramsar Site and a buffer zone or "management area".

2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Compiler 1

Name	Dr. Naing Zaw Htun
Institution/agency	Nature and Wildlife Conservation Division, Forest Department, Ministry of Natural Resources and Environmental Conservation
Postal address	Office No. 39, Forest Department, Ministry of Natural Resources and Environmental Conservation, Naypyitaw, The Republic of the Union of Myanmar
E-mail	nwcdmof@gmail.com
Phone	+95 673 405002
Fax	+95 673 405397

Compiler 2

Name	Hsu Sandar Aung
Institution/agency	Nature and Wildlife Conservation Division, Forest Department, Ministry of Natural Resources and Environmental Conservation
Postal address	Office No. 39, Forest Department, Ministry of Natural Resources and Environmental Conservation, Naypyitaw, The Republic of the Union of Myanmar
E-mail	nwcdmof@gmail.com

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

From year	2008
To year	2017

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Gulf of Mottama
Unofficial name (optional)	Burmese Name= Mottama Pin Lae Gwae

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 <input checked="" type="radio"/> No <input type="radio"/>
(Update) The boundary has been delineated more accurately	<input type="checkbox"/>
(Update) The boundary has been extended	<input checked="" type="checkbox"/>
(Update) The boundary has been restricted	<input type="checkbox"/>
(Update) B. Changes to Site area	the area has increased
(Update) The Site area has been calculated more accurately	<input type="checkbox"/>
(Update) The Site has been delineated more accurately	<input type="checkbox"/>
(Update) The Site area has increased because of a boundary extension	<input checked="" type="checkbox"/>
(Update) The Site area has decreased because of a boundary restriction	<input type="checkbox"/>

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?	No
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2.2 - Site location

2.2.1 - Defining the Site boundaries

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

Former maps	0
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Boundaries description

Coordinates are as follows:
 Centroid: 16 deg 46 mins N, 97 deg 14 mins
 Approximate bounding: 16 deg 26 min to 17 deg 8 min N; 97 deg 4.25 min to 97 deg 4.4 min
 The site is situated on the coast of the Gulf of Mottama, in central Myanmar, at the mouth of the Sittaung River and includes the entire coast of Kyaikto township and most of the coast of Bilin township, both in Mon state. The site was delineated based on geophysical features and administrative boundaries. The landward boundary of the Ramsar Site is based on mudflat extent, topography (elevation), hydrology and bird roosting sites. The seaward side was delineated to include mudflat areas, plus a margin of error to account for the highly dynamic nature of the Gulf of Mottama and changing sediment flows and mudflat locations. This seaward boundary follows straight-line coordinate geometry to allow for easier identification of the boundary from maps and navigational equipment. This boundary delineation process has been carefully negotiated with all local stakeholders and in consultation with all townships involved. The southern seaward boundary reflects a pragmatic compromise between the various stakeholders using the central Gulf area for different purposes. From an ecological perspective the entire Gulf would be included. In addition to the Ramsar Site boundary, a management area has been delineated based on an approximately 2 km landward buffer along coastal areas of Bago Region and Mon State. This area is not subject to designation but is indicative. This management area extends southward to cover Paung and Chaungzon townships in Mon State, and the Salween River estuary near the city of Mawlamyine. To the west, the management area extends from the boundary with the proposed Ramsar Site to the administrative boundary with Yangon Region. An additional area of interest continues to the southeast and covers parts of coastal Kayan, Thongwa, and Kyauktan townships (Yangon region). The area of interest follows mudflat and coastal roads on the landward side and includes 36,561 ha of mainly mudflat and near coastal open water. These are the potential extended boundary locations of the Ramsar Site. One main reason behind the increase in the site boundary is that the strong interest of Mon State and Bago Region Governments had been demonstrated and endorsed area expansion to Ramsar Administrative Authority.
 The boundary is not overlapping with any other existing protected areas.

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):

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

2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Marine Ecoregions of the World (MEOW)	Andaman Sea Coral Coast (MEOW region 110).

Other biogeographic regionalisation scheme

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 Gulf exhibits a tidal cycle which is extremely pronounced in speed and volume, gathering from a width of around 100km and concentrating in a funnel-shaped bay to produce a powerful bore phenomenon, which can reach heights of over 3m on spring tides in the upper estuary and is highly unusual in the region. The tide drops by over 6 m and can reach in places up to 7m, exposing areas of tidal flats whose extent, sediment composition and undisturbed character are increasingly rare and important in the region. The tides and currents constantly redistribute sediments on a large scale, producing shifting channels and a mix of erosion and accretion, and making this one of the most dynamic estuaries in the world. The biological productivity of this system supports a rich biota that exemplifies the importance of large estuaries on an international scale as source areas for fish and invertebrates and as non-breeding refuges for tens of thousands of migratory waterbirds. Marked seasonal variations in temperature, pH, salinity, and dissolved oxygen levels are also produced by monsoon rainfall. At the Sittaung River inflow at the northern end of the Gulf, the water is brackish. Direct hydrological services provided by the Ramsar Site have to be further explored but it is likely that it support ground water recharge through the permeability of the mudflats.

Other ecosystem services provided

The Gulf of Mottama (GoM) Ramsar Site is likely to provide a wide range of important ecosystem services for the biogeographic region. These are difficult to precisely quantify without site-specific scientific studies, but according to local information and known data on the value of mudflats and intertidal habitats in the region (BANCA, unpublished reports), potential services can be described as followed: Provisioning services: The GoM provides fish and marine products for local village fisheries and thereby support coastal livelihoods. Intertidal zones often play a key role as spawning grounds and nurseries for a wide range of fish species which can be then caught by capture fisheries outside this area. The GoM also potentially provides other edible non-timber products such as plants and seaweeds. Regulating services: The large mud flats of the GoM likely act as biological filters by helping to remove pollutants from water. Mud, gravel and their fauna of worms, molluscs and crustaceans are known to remove pollutants from water. Mud flats are also an important carbon sink and participate in climate change mitigation. They play a key role in coastal protection by breaking tidal action. Supporting services: The estuary is a highly productive system, supporting high densities of invertebrates which in turn support large and diverse populations of waterbirds including threatened and charismatic species like the spoon-billed sandpiper (*Calidris pygmaea*) as well as numerous fish species. The site, as well as the entire GoM, serves as a huge sink for nutrients deriving from the rivers discharge and providing the basis for the huge productive plankton and benthos communities. The main concentrations of these move around the upper estuary in the Ramsar Site, in response to shifts in substrate, water conditions and food supply with the dynamic pattern of erosion and accretion, as well as the monthly tidal cycle and the wet and dry seasons. Considering the important nutrients and primary production provided by the site it is likely that it provides supporting services for ecosystems way beyond its boundaries, at regional level, including the entire Bay of Bengal by nourishing plankton and fish populations.

- Criterion 2 : Rare species and threatened ecological communities
- Criterion 4 : Support during critical life cycle stage or in adverse conditions
- Criterion 5 : >20,000 waterbirds

Overall waterbird numbers

Start year

Source of data: Zöckler et al 2014a, Aung et al. 2018, Pyae Phyo Aung, Sayam Chowdhury, Chris Kelly and Christoph Zöckler per. Comm 2019).

Criterion 6 : >1% waterbird population

Criterion 8 : Fish spawning grounds, etc.

Justification

The Site is of high importance as a food source, breeding area and nursery area for fish and crustacean populations in the wider Gulf of Mottama and the transboundary Bay of Bengal beyond. A survey in 2014 found a total of 39 fish species, which is based on sample sites and is not representing a complete list of fish species in the Gulf. The most abundant species include; Burmese mullet (*Sicamugil hamiltonii*), giant sea perch (*Lates calcarifer*), Indian threadfin (*Leptomelanosoma indicum*), pama crocker (*Otholitoides pama*), four finger threadfin (*Eleutheronema tetradactylum*), engraved catfish (*Nemapteryx caelata*) and silver whiting *Sillago* spp. as well as these, commercially important species include hilsa shad (*Tenualosa ilisha*) and toli shad (*Tenualosa toli*) which migrate through the site to breed in the rivers upstream (Tint, W. et al 2014), and the giant freshwater prawn (*Macrobrachium rosenbergii*) for which the inner Gulf is an important nursery and breeding area.

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

<no data available>

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

Phylum	Scientific name	Common name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7	8								
Birds																		
CHORDATA/AVES	<i>Calidris ferruginea</i>	Curlew Sandpiper	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12000	2008-2019	8.6	NT	<input type="checkbox"/>	<input type="checkbox"/>	E, SE Asia & Australia (non-breeding)
CHORDATA/AVES	<i>Calidris minuta</i>	Little Stint	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6000	2019	2.5	LC	<input type="checkbox"/>	<input type="checkbox"/>	S Asia (Non-breeding)
CHORDATA/AVES	<i>Calidris ruficollis</i>	Red-necked Stint	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6000	2019	1.9	NT	<input type="checkbox"/>	<input type="checkbox"/>	NE Siberia (Non-breeding)
CHORDATA/AVES	<i>Calidris tenuirostris</i>	Great Knot	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	32	2010-2017	1.06	EN	<input type="checkbox"/>	<input checked="" type="checkbox"/>	S & SE Asia (non-breed)
CHORDATA/AVES	<i>Charadrius alexandrinus</i>	Kentish Plover; Snowy Plover	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10997	2019	15.5	LC	<input type="checkbox"/>	<input type="checkbox"/>	alexandrinus, S Asia (non-breeding)
CHORDATA/AVES	<i>Charadrius leschenaultii</i>	Greater Sand-Plover; Greater Sand Plover	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1800	2008-2018	2.3	LC	<input type="checkbox"/>	<input type="checkbox"/>	non-breeding
CHORDATA/AVES	<i>Charadrius mongolus</i>	Lesser Sand Plover; Lesser Sand-Plover	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	32000	2008-2016	16.8	LC	<input type="checkbox"/>	<input type="checkbox"/>	mongolus, atrifrons and stegmanii populations non-breeding
CHORDATA/AVES	<i>Chlidonias hybrida</i>	Whiskered Tern	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12000		12	LC	<input type="checkbox"/>	<input type="checkbox"/>	javanicus
CHORDATA/AVES	<i>Chlidonias leucopterus</i>	White-winged Tern	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12000	2008-2016	1.2	LC	<input type="checkbox"/>	<input type="checkbox"/>	Asia, Australasia Non-breeding
CHORDATA/AVES	<i>Emberiza aureola</i>	Yellow-breasted Bunting	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12	2010-2017		CR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	S & SE Asia (non-breed)

Phylum	Scientific name	Common name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7	8								
CHORDATA/AVES	<i>Eurynorhynchus pygmeus</i>	Spoon-billed Sandpiper	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	220	2008-2019	73.3	CR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Eurynorhynchus pygmeus is a synonym often used in the place of Calidris pygmaea (Linnaeus, 1758). The global population estimates of the Critically Endangered Spoon-billed Sandpiper Calidris pygmaeus have been revised downwards several times, owing to the rapid decline of the species. It is now (2014) believed to be 450-500 birds remaining in the wild, including a breeding cohort of 120 pairs (Zöckler et al. 2016). The importance of the Ramsar site as a wintering area has been appreciated recently and even over this period its proportional importance and critical nature for this bird has been reassessed as even greater than originally thought.
CHORDATA/AVES	<i>Limicola falcinellus</i>	Broad-billed Sandpiper	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5000	2008-2016	20		<input type="checkbox"/>	<input type="checkbox"/>	
CHORDATA/AVES	<i>Limosa limosa</i>	Black-tailed Godwit	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8500	2008-2016	6	NT	<input type="checkbox"/>	<input type="checkbox"/>	Melanuroides Non-breeding
CHORDATA/AVES	<i>Mycteria leucocephala</i>	Painted Stork	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	140	2009-2016	1.4	NT	<input type="checkbox"/>	<input type="checkbox"/>	SE Asia Local migrant, breeding in region
CHORDATA/AVES	<i>Pluvialis fulva</i>	Pacific Golden Plover; Pacific Golden-Plover	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9000	2008-2016	9	LC	<input type="checkbox"/>	<input type="checkbox"/>	E, SE Asia Australia & Oceania (non-breeding)
CHORDATA/AVES	<i>Rynchops albigollis</i>	Indian Skimmer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3	2010-2017	0.05	VU	<input type="checkbox"/>	<input type="checkbox"/>	S & SE Asia
CHORDATA/AVES	<i>Threskiornis melanocephalus</i>	Black-headed Ibis	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	300	2008-2012	3	NT	<input type="checkbox"/>	<input type="checkbox"/>	SE Asia, Non-breeding
CHORDATA/AVES	<i>Tringa guttifer</i>	Nordmann's Greenshank	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12	2010-2017	2.4	EN	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Gulf of Mottama supports its habitat. S & SE Asia (non-breed)
CHORDATA/AVES	<i>Tringa totanus</i>	Common Redshank	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9000	2008-2019	9	LC	<input type="checkbox"/>	<input type="checkbox"/>	S & SE Asia (non-breeding)
Fish, Mollusc and Crustacea																		
CHORDATA/ACTINOPTERYGII	<i>Lates calcarifer</i>	Barramundi(=Giant seaperch)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		2010-2020		LC	<input type="checkbox"/>	<input type="checkbox"/>	Widely distributed in the indo west Pacific region from South Asia
ARTHROPODA/MALACOSTRACA	<i>Macrobrachium rosenbergii</i>	giant river prawn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		2010-2026		LC	<input type="checkbox"/>	<input type="checkbox"/>	M. rosenbergii is a large freshwater prawn native to the Indo West Pacific from north-west India to Vietnam, Philippines, New Guinea and northern Australia. It has been introduced into many countries.
CHORDATA/ACTINOPTERYGII	<i>Sicamugil hamiltonii</i>	Burmese mullet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		2010-2019		VU	<input type="checkbox"/>	<input type="checkbox"/>	Sittaung and Ayeyarwaddy
CHORDATA/ACTINOPTERYGII	<i>Tenualosa ilisha</i>	Hilsa shad	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		2010-2017		LC	<input type="checkbox"/>	<input type="checkbox"/>	S & SE Asia (non-bre), very popular and sought-after food fish in the Indian Subcontinent.
CHORDATA/ACTINOPTERYGII	<i>Tenualosa toli</i>	Toili shad	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		2010-2018		VU	<input type="checkbox"/>	<input type="checkbox"/>	Non-breeding but support its habitat.
Others																		
CHORDATA/MAMMALIA	<i>Orcaella brevirostris</i>	Irrawady Dolphin; Irrawaddy Dolphin	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	2010-2017		EN	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Often seen in estuaries

1) Percentage of the total biogeographic population at the site

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

<no data available>

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

4.1 - Ecological character

The Gulf of Mottoma is an estuary with extensive tidal flats, which tidal cycle is extremely pronounced in speed and amplitude, causing a powerful bore phenomenon which is highly unusual in the region and which makes this one of the most dynamic estuaries and last remaining wild coastal zones in the world, with constant sediment redistribution, channel-shifts, erosion and accretion on a large scale. The high productivity of the system supports a rich biota including abundant invertebrates, important nursery areas for marine fish and up to 150,000 migratory waterbirds in the non-breeding season. These include three globally threatened species and internationally important numbers of 19 species, and the Gulf is one of the world's most important wintering areas for the critically endangered spoon-billed sandpiper, hosting probably more than half of the remaining global population. Due to its high productivity the Gulf of Mottama provides hundreds of local communities with fish and other marine food sources and among many services acts as an important hydrological and sedimentological regulator, offering water purification, waste water treatment and nutrient as well as carbon storage in rich organic soils.

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	Gulf of Mottama	1	118530	Representative

4.3 - Biological components

4.3.1 - Plant species

<no data available>

4.3.2 - Animal species

Other noteworthy animal species

Phylum	Scientific name	Common name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/AVES	<i>Anastomus oscitans</i>	Asian Openbill	300	2008-2016	0.1	
CHORDATA/AVES	<i>Ardea alba</i>	Great Egret		2008-2016		
CHORDATA/AVES	<i>Ardea cinerea</i>	Gray Heron; Grey Heron	500	2008-2016	0.1	
CHORDATA/AVES	<i>Ardeola grayii</i>	Indian Pond Heron		2008-2016		
CHORDATA/AVES	<i>Calidris alba</i>	Sanderling		2008-2016		
CHORDATA/AVES	<i>Calidris canutus</i>	Red Knot		2008-2016		
CHORDATA/AVES	<i>Calidris subminuta</i>	Long-toed Stint	25000	2008-2016	0.4	
CHORDATA/AVES	<i>Calidris temminckii</i>	Temminck's Stint		2008-2016		
CHORDATA/AVES	<i>Charadrius dubius</i>	Little Ringed Plover		2008-2016		
CHORDATA/AVES	<i>Chroicocephalus brunnicephalus</i>	Brown-headed Gull	1400	2008-2016	0.9	
CHORDATA/AVES	<i>Egretta garzetta</i>	Little Egret	500	2008-2016	0.1	
CHORDATA/AVES	<i>Egretta intermedia</i>	Intermediate Egret; Plumed Egret	500	2008-2016	0.1	
CHORDATA/AVES	<i>Gallinago gallinago</i>	Common Snipe		2008-2016		
CHORDATA/AVES	<i>Gelochelidon nilotica</i>	Gull-billed Tern		2008-2016		
CHORDATA/AVES	<i>Glaucola lactea</i>	Small Pratincole		2008-2016		
CHORDATA/AVES	<i>Hydroprogne caspia</i>	Caspian Tern		2008-2016		
CHORDATA/AVES	<i>Ichthyaeus ichthyaeus</i>	Pallas's Gull		2008-2016		
CHORDATA/AVES	<i>Limosa lapponica</i>	Bar-tailed Godwit		2008-2016		
CHORDATA/AVES	<i>Numenius arquata</i>	Eurasian Curlew	900	2008-2016	0.9	
CHORDATA/AVES	<i>Numenius phaeopus</i>	Whimbrel	500	2008-2016	0.9	
CHORDATA/AVES	<i>Nycticorax nycticorax</i>	Black-crowned Night Heron; Black-crowned Night-Heron		2008-2016		
CHORDATA/AVES	<i>Pluvialis squatarola</i>	Grey Plover		2008-2016		
CHORDATA/AVES	<i>Recurvirostra avosetta</i>	Pied Avocet		2008-2016		
CHORDATA/AVES	<i>Sternula albifrons</i>	Little Tern		2008-2016		
CHORDATA/AVES	<i>Tadorna ferruginea</i>	Ruddy Shelduck		2008-2016		
CHORDATA/AVES	<i>Tringa erythropus</i>	Spotted Redshank	120	2008-2016	0.5	
CHORDATA/AVES	<i>Tringa glareola</i>	Wood Sandpiper		2008-2016		
CHORDATA/AVES	<i>Tringa nebularia</i>	Common Greenshank		2008-2016		
CHORDATA/AVES	<i>Tringa ochropus</i>	Green Sandpiper				
CHORDATA/AVES	<i>Tringa stagnatilis</i>	Marsh Sandpiper		2008-2016		

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)

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.

The Ramsar site is situated at the mouth of the Sittaung river and in the Gulf of Mottama which is an arm of the Andaman sea

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 permanent water present	No change

Source of water that maintains character of the site

Presence?	Predominant water source	Changes at RIS update
Marine water	<input checked="" 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

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

The site exhibits a tidal cycle which is extremely pronounced in speed and volume, gathering from a width of around 100 km and concentrating in a funnel-shaped bay to produce a powerful bore phenomenon, which can reach heights of over 1 m on spring tides in the upper estuary and is highly unusual in the region. The tide drops by over 6 m and can reach in places up to 7 m, exposing areas of tidal flats whose extent, sediment composition and undisturbed character are increasingly rare and important in the region.

The water flow from the Sittaung river fluctuates according to the season resulting in changes in salinity in the site.

4.4.5 - Sediment regime

Significant erosion of sediments occurs on the site

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

Significant accretion or deposition of sediments occurs on the site

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

Significant transportation of sediments occurs on or through the site

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

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

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

Sediment regime unknown

Please provide further information on sediment (optional):

The tides and currents constantly redistribute sediments on a large scale, producing shifting channels and a mix of erosion and accretion, and making this one of the most dynamic estuaries in the world. The Ramsar site is also one of the least impacted large intertidal estuarine systems in the world.

4.4.6 - Water pH

Unknown

4.4.7 - Water salinity

Mxohaline (brackish)/Mxosaline (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

Please provide further information on salinity (optional):

The water flow from the Sittaung river fluctuates according to the season resulting in changes in salinity in the site.

4.4.8 - Dissolved or suspended nutrients in water

Eutrophic

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

Unknown

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

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

Surrounding area has greater urbanisation or development

Surrounding area has higher human population density

Surrounding area has more intensive agricultural use

Surrounding area has significantly different land cover or habitat types

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Food for humans	Sustenance for humans (e.g., fish, molluscs, grains)	High

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Pollution control and detoxification	Water purification/waste treatment or dilution	High

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Nature observation and nature-based tourism	Low
Spiritual and inspirational	Spiritual and religious values	Low

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
Nutrient cycling	Storage, recycling, processing and acquisition of nutrients	High
Nutrient cycling	Carbon storage/sequestration	Medium

Optional text box to provide further information

The Gulf of Mottama is one of the world's largest areas of permanently muddy water. Sediment delivery from four major rivers - the Ayeyarwady, Yangon, Sittaung, and Thanlwin - and a 7-metre tidal range that drives currents of up to 3 meters/second, produce constantly changing patterns of sediment deposition and erosion. There is nowhere quite as muddy or as dynamic anywhere in the world. The Gulf of Mottama is one of the most dynamic estuaries in the world and is home to one of the largest mudflat areas in the world, making it of outstanding global conservation value. The highly-productive gulf, fed by sediment and nutrients from three major rivers, supports abundant vertebrates that provide food up to 150,000 migratory water birds in the non-breeding season. The gulf is one of the world's most important wintering areas for the Critically Endangered Spoon-billed sandpiper, hosting probably more than half of the remaining global population in the world during wintering season. The site also supports the livelihoods of tens of thousands of people who make their living through fishing. The mud flats also serve as spawning grounds for many commercially important fish species, and the muddy waters deliver nutrients that support fisheries far into the Bay of Bengal.

Within the site: 10000s

Outside the site: 100000s

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

Description if applicable

The site is functioning not only to support habitat for critically endangered speices and biodiversity but also to support marine fishery products for local community. Most of the local community depend on the availability of fishery recoures and they applied traditional fish harvesting method, especially for small scale fishermen.

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

4.6 - Ecological processes

<no data available>

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

5.1 - Land tenure and responsibilities (Managers)

5.1.1 - Land tenure/ownership

Public ownership

Category	Within the Ramsar Site	In the surrounding area
National/Federal government	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Provincial/region/state government	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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

The Government of Myanmar owns all land and also owns all the marine area.

Little information has been documented regarding demographics and socio-economic characteristics of coastal communities in the Gulf of Mottama. According to previous studies, population numbers in coastal villages often fluctuate, and are heavily influenced by sedimentation and coastal erosion. People tend to out-migrate from eroded areas - move landward or to other villages, and in-migrate to areas where accretion takes place. The majority of land in each township is occupied by farming - only a small proportion of those situated from between 2-5 km from the coast is defined by township officers as "coastal villages" (SDC mission survey, 2014).

5.1.2 - Management authority

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

Local governance and integrated coastal zone management (ICZM) mechanisms will be developed after designation and will involve the Mon state relevant Ministries. The RIS will be updated once the local focal point for management has been nominated.

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

Dr. Min Kyi Win, Minister of Ministry for Natural Resources and Environmental Conservation, Mon State (and) Dr. Saw Nyo Win, Minister for Ministry of Natural Resources and Environmental Conservation, Bago Region

Postal address:

Mon State Government Office, Mawlamyine

E-mail address:

minkyiwin2013@gmail.com

5.2 - Ecological character threats and responses (Management)

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

Agriculture and aquaculture

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Annual and perennial non-timber crops	Medium impact	Medium impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Transportation and service corridors

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Shipping lanes	Low impact	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	High impact	Low impact	<input checked="" type="checkbox"/>	No change	<input type="checkbox"/>	No change
Fishing and harvesting aquatic resources	High impact	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
Dams and water management/use	Low impact	High impact	<input type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Pollution

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Household sewage, urban waste water	Low impact	Medium impact	<input checked="" type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change
Agricultural and forestry effluents	Low impact	Medium impact	<input type="checkbox"/>	No change	<input checked="" type="checkbox"/>	No change

Climate change and severe weather

Factors adversely affecting site	Actual threat	Potential threat	Within the site	Changes	In the surrounding area	Changes
Storms and flooding	Low impact	Low 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	Gulf of Mottama	http://www.birdlife.org/datazone/sitefactsheet.php?id=31525 http://www.eaaflyway.net/wordpress/new/theflyway/flywaysitenetwork/EAFF-SIS117_Gulf%20of%20Mottama.pdf	
Other non-statutory designation	Gulf of Mottama (EAAFP flyway site)	http://www.eaaflyway.net/wordpress/new/theflyway/flywaysitenetwork/EAFF-SIS117_Gulf%20of%20Mottama.pdf	partly

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

Species

Measures	Status
Threatened/rare species management programmes	Partially implemented

Human Activities

Measures	Status
Fisheries management/regulation	Partially implemented
Harvest controls/poaching enforcement	Implemented
Communication, education, and participation and awareness activities	Partially implemented

Other:

The NGO BANCA (see above) has undertaken community awareness activities in villages around the shore of the Gulf, concerning the importance of the area for spoon-billed sandpipers and the legal position concerning the hunting of this species. It has also conducted several research activities for shore bird wintering population and fishery sector.

Awareness activities on Ramsar Site will be developed as part of the Community-Led Coastal Management in the Gulf of Mottama project, including support to the World Wetland day, translation of key Ramsar documents and awareness events for local stakeholders.

Gulf of Mottama project (GoMP) is a 9 year (2015-2024) initiative supported by the Swiss Development Cooperation (SDC) and aims at ensuring that the unique biodiversity of the GoM is conserved and sustainably developed in order to benefit human communities that depend on it. It implemented by a Consortium led by HELVETAS Swiss Inter-cooperation, with core partners Network Activities Group (NAG), a local Myanmar NGO and the International Union for Conservation of Nature (IUCN), BANCA and the Malwamyine and Bago Universities.

The project is framed around three interdependent outcomes, focusing on improving the fishery sector, promoting alternative livelihood resources, and supporting more sustainable natural resources and biodiversity management in the coastal areas of the Gulf of Mottama (GoM). The implementation strategy relies on community led, co-management, multi-stakeholder approaches.

The main outcomes of the project, in addition to the support to the Ramsar site designation is to develop local governance mechanisms for the Ramsar site and support a management plan which will cover the entire Ramsar site as well as an extended buffer zone including the coast of Bago Region and of Southern Mon state.

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:

Under the Gulf of Mottama Project, the implementation of partners and stakeholders are together developing the site management plan. The site level formed several management committee (Village development committee, agricultural committee, fishery management committee and conservation committee) which committees have monthly meeting during the project implementation period and quarterly meeting at the township and district level in coordination with relevant department officials (Fishery, Forest, Agriculture, etc.). State Coastal Resource Management Committee and Wetland Committee role will be responsible to monitor the implementation of the management plan and coordinate union level (National Wetland Committee and National Coastal Natural Resources Management Committee).

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
Water regime monitoring	
Water quality	
Birds	Implemented
Animal community	

BANCA will conduct monitoring for this site.

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

Lunn, Z, Minoru, K, Tomida, H, Suzuki, T, Han Shein, S, Chan, N, Maung, A, Monn, S, Lin, S M N N (2011). Preliminary study on intertidal macro-zoobenthos distribution in the spoon-billed sandpiper core wintering area of the Gulf of Mottama (Martaban), Myanmar. Unpublished report, BANCA, Yangon.

Spalding, M D et al. (2007) Marine Ecoregions of the World: A Bioregionalization of Coastal and Shelf Areas. *BioScience* 57(7): 573-583.

Tint, W. Win, K.K., Moe, M.M., Zaw L.H., Thaw, P.S., Tint T. (2014). A Rapid Assessment of Fish and Fisheries Information in a part of East coast of Gulf of Mottama (Mon State). Yangon 26p.

Spoon-billed Sandpiper Task Force (various). News bulletins - accessible at <http://www.eaaflyway.net/spoon-billed-sandpiper.php>

Wetland Conservation in Myanmar. Presentations given to Symposium for World Wetlands Day, Nay Pyi Taw, Myanmar, 2 February 2012.

Zöckler, C, Htin Hla, T, Clark, N, Syroechkovskiy, E, Yakushev, N, Daengphayon, S and Robinson, R (2010). Hunting in Myanmar is probably the main cause of the decline of the Spoon-billed Sandpiper *Calidris pygmaeus*. *Wader Study Group Bulletin* 117(1): 1–8

Zöckler, C., T. Zaw Naing, S. Moses, R. Nou Soe & T. Htin Hla (2014): The importance of the Myanmar Coast for Water Birds. *Stilt* 66: 37-51.

Zöckler, C, et al (2016). The Wintering Distribution of the Spoon-billed Sandpiper . The winter distribution of the Spoon-billed Sandpiper *Calidris pygmaeus*. *Bird Conservation International*, Available on CJO 2016 doi:10.1017/S0959270915000295

6.1.2 - Additional reports and documents

- i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)
<1 file(s) uploaded>
- ii. a detailed Ecological Character Description (ECD) (in a national format)
<no file available>
- iii. a description of the site in a national or regional wetland inventory
<no file available>
- iv. relevant Article 3.2 reports
<no file available>
- v. site management plan
<1 file(s) uploaded>
- vi. other published literature
<4 file(s) uploaded>

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:



Flock of white-winged terns following the rushing tidal bore (Mr. Christoph Zöckler, 15-01-2017)



Survey team and boats at dusk (Mr. Christoph Zöckler, 15-01-2017)



Coastal wilderness in the Gulf of Mottama (Mr. Christoph Zöckler, 15-01-2017)



Tidal marshes (Mr. Christoph Zöckler, 15-01-2017)

6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation 2017-05-10