Designation date: 23/06/1999 Ramsar Site no. 997

Information Sheet on Ramsar Wetlands (RIS) – 2009-2012 version

Available for download from http://www.ramsar.org/ris/key_ris_index.htm.

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 14, 3rd edition). A 4th edition of the Handbook is in preparation and will be available in 2009.

3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

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DD MM YY

Designation date | Site Reference Number

2. Date this sheet was completed/updated:
2 May 2012

3. Country:
Cambodia

4. Name of the Ramsar site:
The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

Boeng Chhmar and Associated River System and Floodplain (Boeng Chhmar)

5. Designation of new Ramsar site or update of existing site:

This RIS is for (tick one box only)**:**
a) Designation of a new Ramsar site ❑; or
b) Updated information on an existing Ramsar site ☑

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area

The Ramsar site boundary and site area are unchanged: ☑

or
If the site boundary has changed:
i) the boundary has been delineated more accurately ; or
ii) the boundary has been extended ❑; or
iii) the boundary has been restricted** ❑

and/or

If the site area has changed:
i) the area has been measured more accurately ❑; or
ii) the area has been extended ❑; or
iii) the area has been reduced** ❑

** **Important note**: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

The boundary of the site has been re-demarcated as the old boundary was too complicated to demarcate and to erect boundary poles. The proposed re-demarcation was discussed and agreed at a consultation meeting in Siem Reap in April 2012. However to recognize the new boundary of the site, Prime Minister decree (sub decree) is required, and currently the Cambodian Ramsar Administration Authorities in collaborate with BirdLife International Cambodia Programme are in process develop and submit the reviewing Boeng Chhmar boundary proposal to cabinet of Prime Minister.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

Referring to Ministry of Environment assessment in 2006, the Cambodian population in this Ramsar Site increased 37% in only five years (1998 to 2003), Cambodia being a developing country the population growth rate in rural areas remains high. Increased population who strongly depend on local natural resources has led to a decline in fish populations and increased pressure on resources including wildlife collection and wood collection. More frequent dry season fires, generally deliberately lit for hunting or land clearing, caused a precipitous decline in the site's ecological character, revealed by gradual landscape modification from tall forest to grasslands and shrublands. However no detail survey about this impact has been done in this Ramsar Site so far.

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7. Map of site:
Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:
i**) a hard copy** (required for inclusion of site in the Ramsar List): ❑;

ii**) an electronic format** (e.g. a JPEG or ArcView image) ☑;

iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** ☑.

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The boundary remains unchanged with floodplain forest surrounding the Boeng Chhmar Lake at its east and north-eastern boundary and the Tonle Sap River bordering at the south and southwest

8. Geographical coordinates (latitude/longitude, in degrees and minutes):
Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.

The approximate centre of the site is at 12º48'20"N 104º16'55"E

9. General location:
Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.

The Boeng Chhmar Ramsar site is located just north-east of the constriction of the Tonle Sap Great Lake. This wetland lies under administrative supervision of Kampong Thom province and is approximately 70km far from the Provincial capital to the east. The area is most easily accessed from the south by crossing the Tonle Sap Great Lake. The nearest towns are Kampong Luang commune, south of the Tonle Sap, and Krakor district (district town) on National Road No. 5, approximately 20km and 45km respectively.

10. Elevation: (in metres: average and/or maximum & minimum)

10 m (max) ASL

11. Area: (in hectares)
28,000ha (about 23,000 ha located in Kampong Thom Province and around 5000 ha located in Siem Reap Province)

12. General overview of the site:
Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The Boeng Chhmar Ramsar Site is part of Tonle Sap flood plain and it represents a good example of a near natural wetland in the Mekong River Ecoregion which plays a substantial hydrological, biological and hydrological role in the natural functioning of two major rivers, Stung Stoung and Stung Chikreng and lake basin. The site consists of a small permanent water surrounded by a creek system and flooded forest in the northeast fringe of the Tonle Sap Lake. The creek systems are mostly shallow, especially in April with a maximum depth of roughly two meters, whereas the lake water remains between 0.5 to 1.0 meter. During inundation, the lake reaches a maximum depth of approximately 4m.

The area supports a range of complex wetland habitats including seasonally inundated forest, forest mosaic and wood and bush lands. These factors influence the nutrient dynamics of the site creating an area rich in ecological diversity, including threatened species such as the globally endangered Greater Adjutant *Leptoptilos dubius*, Fishing cat *Prionailurus viverrinus* and Hairy-nosed otter *Lutra sumatrana*. The site also provide important spawning grounds for molluscs and are important feeding grounds for a number large waterbirds and migratory bird species (Ministry of Environment 2006).

13. Ramsar Criteria:
Tick the box under each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11). All Criteria which apply should be ticked.

1	2	3	4	5	6	7	8	9
☑	☑	❑	❑	☑	❑	❑	☑	❑

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Criterion 1:

The Boeng Chhmar Ramsar Site is part of Tonle Sap flood plain and it represents a good example of near natural wetlands in the Mekong River Ecoregion which plays substantial hydrological, biological and hydrological role in the natural functioning of two major rivers, Stung Stoung and Stung Chikreng and lake basin. Tonle Sap is the largest lake in Southeast Asia.

Criterion 2:

The area supports large assemblage of plant species, fish, reptile, mammal, and waterbird species many of which are known as vulnerable or endangered.

English Name	Scientific Name	IUCN Status	CITES Status	CMS	National Status
Birds					
Lesser Adjutant	*Leptoptilos javanicus*	VU	-	-	Rare
Greater Adjutant	*Leptoptilos dubius*	EN	-	-	Endangered
Milky Stork	*Mycteria cinerea*	VU	I	-	Rare
Masked Finfoot	*Heliopais personatus*	EN	-	-	Rare
Mammal					
Capped Langur	*Trachypithecus pileatus*	VU	I		Common
Fishing cat	*Prionailurus viverrinus*	EN	II		Common
Hairy-nosed otter	*Lutra sumatrana*	EN	II		
Smooth-coated otter	*Lutrogale perspicillata*	VU	II		
Reptile					
King Cobra	*Ophiophagus hannah*	VU	II		Rare
Siamese Crocodile	*Crocodylus siamensis*	CR		I	Rare
Yellow-headed Temple Turtle	*Heosemys annandalii*	EN		II	
Malayan Snail-eating Turtle	*Malayemys subtrijuga*	VU		II	Rare
South Asian Box Turtle	*Cuora amboinensis*	VU		II	
Asiatic Soft-shell Turtle	*Amyda cartilaginea*	VU		II	Rare
Fishes					
Mekong Giant Catfish	*Pangasianodon gigas*	CR	I	I	Endangered
Giant Barb	*Catlocarpio siamensis*	CR			Endangered
Leaping Barb	*Laubuca caeruleostigmata*	EN			
Jullien's Golden Carp	*Probarbus jullieni*	EN		I	
Laotian Shad	*Tenualosa thibaudeaui*	VU			
Silver Shark	*Balantiocheilos melanopterus*	EN			
Asian Bonytongue /Asian Arowana	*Scleropages formosus*	EN		I	

Criterion 5:

Boeng Chhmar Ramsar site regularly supports more than 20,000 individuals of a number of large waterbird species on an annual basis. During breeding season the key bird species from Prek Toal bird colony such as Asian open billed, Oriental Darter, Spot billed Perlican, Indian Commorant, Lesser

Adjutant, and Greater Adjutant do foraging in Beoung Chhmar Ramsar site. Table below shows population of selected bird species counted in May 2012 by a group led by technical officers from BirdLife International Cambodia Programme and IUCN-Cambodia. BirdLife recognize this site as an Important Bird Area because it is known or thought to hold, on a regular basis at least 1% of a biogeographic population of congregatory waterbird species (i.e. Oriental darter, Indian Cormorant.). (Hout, Pech, Poole, Tordoff, Davidson, Delattre, 2003). A higher level of enforcement is needed to protect waterbirds at the site.

Scientific name	English name	Population number
		May 2012
Leptoptilos dubius	Greater Adjutant	4
Pelecanus philippensis	Spot-billed Pelican	16
Leptoptilos javanicus	Lesser Adjutant	20
P. niger	Little Cormorant	700
Anhinga melanogaster	Oriental Darter	1,200
Mycteria leucocephala	Painted Stork	15,000
Anastomus oscitans	Asian Openbill	25,000
	Total	**41,940**

Sources: The unpublished monitoring data of Boeng Chhmar Ramsar site, BirdLife International Cambodia Programme

Criterion 8:
There are 296 fish species in Tonle Sap great lake, 43% is grey fish, 40% white fish, and 17 % black fish (Fishery Administration 2011) and around 17 are threatened species (Ministry of Environment 2006). Boeng Chhmar, along with the surrounding Tonle Sap Great Lake becomes completely inundated during the wet season. Habitats include lakes, streams, ponds, seasonally inundated forest, shrub and woodlands (Ministry of Environment 2006). This wetland feature provides a rich habitat for fish living, breeding and feeding. In dry season fish and aquatic animal can be survive in the ponds and the lake and in the wet season fish use the inundated forest within the area for spawning and feeding. The white fish are mainly associated with the natural streams, they move to site as flood rises in the early wet season (from May) and remaining there to feed and reproduce, until the waters begin to recede (from November). Black fish are chiefly residents in this site, inhabiting relatively clear-water swamps and plains year round and make limited lateral migration (Hortle *et al.* 2004). Some comment white fish species recorded in Boeng Chhmar Ramsar site including: *Cirrhinus microlepis*, *Cyclocheilichthys enoplos, Morulius chrysophekadion* and the grey fish species including *Ompok bimaculatu, Notopterus notopterus, Mystus mysticetus, and Barbonymus gonionotus* and the black fish species including *Clarias macrocephalus, Clarias batrachus, Channa striata, Channa micropeltes, Anabas testudineus, and Monopterus albus.*

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):
Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:
Mekong River Region

b) biogeographic regionalisation scheme (include reference citation):
WWF Ecoregions

16. Physical features of the site:
Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Boeng Chhmar contains a permanent lake in the floodplain of Boeng Tonle Sap Great Lake. During the dry season between March and April, the area becomes shallower (0.5 meters) and water is only available in the lake and creeks. During the rainy season, the entire Great Lake floodplain becomes inundated, with

the lake swelling four to five times it's dry season size and its average depth increasing seven to nine times, to approximately 4 meters, (Evans et. al. 2004) making it the biggest lake in Southeast Asia.

Boeng Chhmar is part of the Tonle Sap and Mekong River Basin. The river system processes create distinct levees approximately 0.5-1.0 meter above the surrounding marsh (back swamp). It is connected to the lower Mekong River at Phnom Penh via the Tonle Sap River. The width of the floodplain of Tonle Sap at its lowest level varies between 40km in the Northwest to 5km in part of the South. Boeng Chhmar receives water from main two sources: (i) inflows from the North and Northeast, particularly Stung Stoung and Stung Chikreng which have built up an elongated delta at the Northern end of the lake and (ii) the reverse flow of the Tonle Sap River which during the period July to October, would be expected to completely inundate the lake and the surrounding area. Boeng Chhmar and numerous creeks and rivers are mostly shallow, with a maximum depth of roughly two meters in the dry season. During inundation the water level rises at least 4-5 meters.

Average maximum temperatures of 35 degrees occur in April and average minimum temperatures of 21 degrees occur in January. Average rainfall is approximately 1400mm per year.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

The whole character of the Tonle Sap Lake is influenced by the Mekong River and the surrounding catchment areas including the Cardamom Mountain to the southwest and the northern river tributaries. The Tonle Sap River reverses its flow twice each year, draining the lake into the Mekong River during the dry season when the water level is low, and filling the lake from the Mekong River during the wet season when the water level is high. At its minimum extent in the dry season, the lake covers an area of about 2,500 km² and its depth is fairly uniform at about 1 meter; however, in the wet season the lake expands to cover up to 16,000 km² with a maximum depth of about 10 meters. More than 60 percent of the flood water in the lake comes from the Mekong River and less than 40 percent comes from its own catchment area, and delta formation from the deposition of Mekong River sediments at the entrance to the lake impedes dry season navigation. (GEF project # 1183)

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

The presence of flooded forest and creek system plays an important role in trapping the surface flow from the two rivers Stung Stoung and Stung Chekreng, containing a large quantity of sediment. The reverse flow from the Mekong through Tonle Sap River in the wet season is ideally buffered by the existing flooded forest before it reaches the shore. Numerous depressions and creek systems retain water all year round thus contribute significantly to feeding ground water supply to the neighbouring wetland areas.

19. Wetland Types

a) presence:

Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

Marine/coastal: A • B • C • D • E • F • G • H • I • J • K • Zk(a)

Inland: L • M • N • O • P • Q • R • Sp • Ss • Tp Ts • U • Va •
Vt • W • Xf • Xp • Y • Zg • Zk(b)

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

The dominant wetland type is Type TP, Ts, followed by O and M.

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The major habitats are the lake's open water and the vast inundated floodplain. Most of the plain can be classified as "seasonal freshwater swamp savannah" (revised IUCN classification developed in April 1993 with Mekong Secretariat). Trees such as *Barringtonia acutangula* and *Xanthophyllum glaucum* are very common along the levees of waterways within the floodplain and as scattered groves on the floodplain.

In the Boeng Chhmar region of the flood plain there are numerous creeks, and over the floodplain area there are scattered pools, some of which in the dry season appear to contain blackwater due to the release of humic acid from decaying vegetation.

There are three main types of vegetation within the area:

1. The Lake and River Systems

Common species include:
Non-rooted floating plants: the water hyacinth *Eichhornia crassipes* is the dominant non-rooted floating plant. *Pistia stratiodes* and *Salvinia* sp. are present in similar quantities. (Both *Eichhornia* and *Salvinia* are introduced species)
Non-rooted, submerged plants: *Utricularia* sp. is present in small amounts.
Rooted, submerged macrophytes are generally abcent due to the turbidity of the water.
Rooted, floating leaved: *Trapa natans, Nymphaea* sp.
Creeping: *Ipomea reptans* and *Ludwigia adscendens.*

2. The River and Creek Levees

These are normally the highest parts of the floodplain and trees such as *Barringtonia acutangula* and *Xanthophyllum glaucum* are very common. Saplings of *B. actangulata* are common, which must survive at least 4 months of complete inundation.

3. The Floodplain and Backwater Swamp

The backswamp areas are lower than the levees. In the dry season the water table may still be at the surface of the soil (+/-10cm). The dominant plant forms are extensive thickets of the shrub *Sebania javanica* and "meadows" of the low-growing *Polygonum barbatum. Ipomea reptans* is common creeping over the ground and there are extensive areas of water hyacinth still growing in the moist soil.

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

The important forest communities in the area are *Barringtonia acutangula*, a medium sized evergreen tree with traditional medicinal uses and a values timber species, and *Xanthophyllum glaucum*.

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

The most noticeable of the invertebrate fauna is the diversity and abundance of dragonflies and damselflies. This is typically a reliable indication of good water quality and an abundance of other

invertebrates. Within the backswamp areas, there is a very high abundance of terrestrial insects, particularly grasshoppers and crickets.

The area attracts a great diversity and abundance of waterbirds, perhaps the highest in the entire floodplain, and is encompassed with the Boeng Chhmar/Moat Khla Important Bird Area (IBA) (MoE 2007). The habitat area supports a breeding colony of Darters and significant breeding concentrations of Grey-headed Fish Eagles (*Ichthyophaga ichthyaetus*) as well as providing habitat for Spot-billed Pelicans (*Pelecanus philippensis*), Lesser Adjutants and a variety of other water birds (MoE 2007).

Exact numbers of fish species in the Boeng Chhmar Lake is unknown, however; 500 fish species have been described within the Mekong River system, and Tonle Sap comprise more than four hundred species (MoE 2007 and GEF project # 1183). Sixteen of these (see list in appendix 1) are known to be of international conservation concern (MoE 2007).

There are 23 reptile species identified in the Boeng Tonle Chhmar (Ministry of Environment 2006), in which three are the key conservation species including Blood Phyton (*Python curtus),* Rock Phyton (*Python melurus bivittatus) and* Reticulated Phyton (*Python reticulatus).*

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23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

Fish products and other aquatic resources are an integral part of Cambodian livelihood. Fish are used as a food source and for trade, commonly with rice to support their diet.

The entire area of the Tonle Sap Great Lake and Beong Chhmar Lake are important for regional economy as the area supplies fish products to millions of people in Cambodia. The income generation may become an important driver for ecotourism development in the future.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?
If Yes, tick the box ☑ and describe this importance under one or more of the following categories:

i) sites which provide 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:

There are many traditional gears used by local fishermen that do not lead to overfishing, however most fishermen now also use modern gears that are far more destructive.

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where 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:

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24. Land tenure/ownership:
a) within the Ramsar site:

The land in the area is state-owned and part of this Ramsar site is co-managed by the Fisheries Administration (Former Department of Fisheries) which presides over regional fishing laws. In 2012, the fishing lot was cancelled and in replacement the government has recently established fish sanctuaries. A few floating villages are located inside the area. Referring to protected area law; these villages are part of a residential area that is subject to be a community use zone and registered as privately owned in the future.

b) in the surrounding area:
The surrounding flooded forest are the property and under jurisdiction of the Fisheries Administration. Rice fields in the north of the site are privately owned.

25. Current land (including water) use:
a) within the Ramsar site:
Since most of the area is inundated almost all year round the major land/water use is fishing. As the area is assigned as fishing lot, fishing is managed by individuals holding fishing licences. Small scale family fishing is allowed in the closed season between July and September. Some floating villages are permitted to fish for their livelihood raise fish and grow rice in small open areas nearby their villages.

b) in the surroundings/catchment:
The surrounding area is also subject to flooding with fishing as the major livelihood/economic activity. Rice fields are present at the extreme north of the site, close to the National Road No. 6 which runs along the northern periphery of the Tonle Sap Lake. No major development exists within the area south of the National Road 6.

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:
a) within the Ramsar site:
Population increase around the site is resulting in increased pressures on fish and animal stocks, particularly in the dry season when migrants from upstream access the area to hunt or fish, often using illegal methods such as electro fishing and fish poisons (MoE 2007).
Additionally, the conversion of flooded forest on the far northeast border can be considered as critical change of land use near the boundary of the site.

b) in the surrounding area:
Migrant increases have also lead to more frequent and extensive dry season fires. The result is a gradual modification of the landscape from a tree dominated habitat to grassland and shrublands, particularly at the sites peripheries.

27. Conservation measures taken:
a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:
In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

In recognition of its unique environmental, economic and cultural significance UNESCO inscribed the Tonle Sap Lake into the world network of Biosphere Reserves in October 1997 (Goes, 2005).

The Government of Cambodia has designated the whole Tonle Sap Lake as the Tonle Sap Biosphere Reserve in 2001 by Royal Decree. Within the Tonle Sap Biosphere Reserve, there were three core zones (Neou Bonheur, 2006) in which Boeng Chhmar is one of those three. Refer to this royal decree, all activities leading to degradation of the biodiversity of the site are not permitted within the core zone, however the sustainable fishing activities are allowed. In 2012, the Fisheries Administration has delineated a fish sanctuary that covers part of this Ramsar site. No fishing activities are allowed in the sanctuaries in order to preserve fish stocks.

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ❑; Ib ☑; II ❑; III ☑; IV ❑; V ❑; VI ☑

c) Does an officially approved management plan exist; and is it being implemented?:
There is a short term management plan through the coordination efforts among the involved agencies, and donors-funded projects/programs. Boeng Tonle Chhmar Core Area Management Plan 2008-2012 were prepared by the Tonle Sap Conservation Project in association with the Royal Government of Cambodia Ministry of Environment and Ministry of Agriculture, Forestry and Fisheries. Parts of this management are being implemented.

d) Describe any other current management practices:
Protected Areas Laws were passed in December 2007 and the sub-decree establishing new fish sanctuaries is in draft. Additionally, several environmental rangers monitor the area year round to prevent illegal activities. However, with limited resources, their impact is variable. A few donor-funded projects/programs are in the process of implementation with collaborative involvement from government agencies.

28. Conservation measures proposed but not yet implemented:
e.g. management plan in preparation; official proposal as a legally protected area, etc.

Monitoring protocols are being develop by Ministry of Environment and BirdLife International Cambodia project " Strengthening and Establishing the Ramsar Site Network in Cambodia (SERNC)" with funding support from the Ramsar Convention's Small Grant Fund. This protocol will be finalized and used as a field based monitoring guideline in the future.

There is no boundary demarcation in Boeng Tonle Chhmar Ramsar site, the above mention project in collaborate with IUCN are in process support Ministry of Environment to review the boundary of this Ramsar site and request endorsement from local communities in order to process on the ground demarcation in the future. With clear boundary demarcation, the land encroachment conflict and other form of illegal activities will be minimized.

29. Current scientific research and facilities:
e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

The Tonle Sap Conservation Project with funding support from GEF and in partnership with Wildlife Conservation Society, have conducted a number of studies relating to the Tonle Sap basin and Great Lake and wetland inventory and baseline surveys have been produced to support the establishment of core zones within the Tonle Sap Lake Biosphere Reserves. Specific studies relating to the Boeng Chhmar area are limited however. See the list of some study have been done as following:

- An assessment of exotic species in Tonle Sap Biosphere reserve (van Zalinge 2006)
- Case study of Biodiversity conservation in Boeng Chhmar, Tonle Sap Biosphere reserve (Ministry of Environment 2006)
- Biodiversity review report of Tonle Sap Biosphere reserve (Davidson 2006)
- The status and distribution of large waterbirds in the Tonle Sap Biosphere reserve (van Zalinge *et al* 2008 - 2011)

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:
e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

General environmental education programs covering many environmental aspects including the awareness on the wetlands are being implemented through local schools community outreach programs and local media (MoE 2007). There is a training centre inside at the site, located a few kilometres to the

west of the Beong Chhmar Lake. Visitors can use the centre as a sightseeing base over the inundated forest. Currently no visitor inventory exists.

In addition, with support from GEF-Tonle Sap Conservation Project, the local communities in the Boeng Tonle Chhmar were assisted to establish the self help groups in objective to enhance the participation in conserving natural resources particularly fisheries and livelihood improvement. Moreover, the above project also undertook an environmental education and awareness raising program that involved curriculum development, teaching materials, training of teachers, initiation of eco-clubs in schools and various events to promote wetland wise use concept and environmental awareness.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

The site has yet to be developed for recreational purpose. There is no tourism facility in place and the complex ecosystem and large waterbirds colonies provide potential for tourism and are a part of the management objectives in the Boeng Tonle Chmmar Core Area Management Plan.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

Territorial Jurisdiction: Major part of Boeng Chmmar Ramsar site lies under the administrative supervision of Kampong Thom provincial authority and the remaining part is under Siem Reap provincial authority.

Functional Jurisdiction: The Ministry of Environment under the Royal Degree dated Nov, 01, 1993 has the jurisdiction in supervising resource management activities in the area. However, the Fisheries Administration takes the responsibility over the management fish sanctuary located inside this Ramsar site.

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

The Environmental Department of Kampong Thom Province.
Mr. Heng Hourt
19 Eo, Stung Sen Road
Sangkat Kampong Thom, Stung Treng City
Kampong Thom province
Cambodia
Tel: (855) 12 917 544
Fax: (855) 62 962 385
Email: heng_hourt@yahoo.com

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

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Appendix 1.

Table 1: Fish Species of Conservation Concern Occurring in the TSBR[1]

Species	International Status	Significance
Mekong Giant Catfish *Pangasianodon gigas*	IUCN Critically Endangered; CITES Appendix I	Fishing Lot No. 2 may be an important nursery area
Leaping Barb *Chela caeruleostigmata*	IUCN Critically Endangered	not recorded from Tonle Sap Lake, but possibly occurs
Jullien's Golden Carp *Probarbus jullieni*	IUCN Endangered; CITES Appendix 2	recorded from Tonle Sap Lake
Laotian Shad *Tenualosa thibaudeaui*	IUCN Endangered	populations have recently drastically declined due to factors outside of the Tonle Sap
Tricolor Sharkminnow *Balantiocheilos melanopterus*	IUCN Endangered	depicted on FiA's Endangered Fishes of Cambodia
Asian Bonytongue/Asian Arowana *Scleropages formosus*	IUCN Endangered; CITES Appendix I	occurrence in TSBR not confirmed
Thicklip Barb *Probarbus labeamajor*	IUCN Data Deficient	recorded in Tonle Sap, but little known
Giant Pangasius *Pangasius sanitwongsei*	IUCN Data Deficient	becoming increasingly rare throughout its range
Giant Barb *Catlocarpio siamensis*	not listed, but requires urgent evaluation and immediate conservation attention	numbers have declined drastically
Puntioplites bulu	not listed	formerly common, but has recently become very rare. Depicted on FiA's Endangered Fishes of Cambodia. Occurrence in TSBR requires confirmation.
Sabretoothed Thryssa *Lycothrissa crocodilus*	not listed	depicted on FiA's Endangered Fishes of Cambodia
Four-barred Tigerfish *Datnioides quadrifasciatus*	not listed	occurrence in TSBR not confirmed. Depicted on FiA's Endangered Fishes of Cambodia
Wallago leeri	not listed	occurrence in TSBR not confirmed. Depicted on FiA's Endangered Fishes of Cambodia
Albulichthys albuloides	not listed	depicted on FiA's Endangered Fishes of Cambodia
Elephant-ear Gourami *Oxonedus exodon*	not listed	occurrence in TSBR not confirmed. Depicted on FiA's Endangered Fishes of Cambodia
Botia genus	not listed	several species recorded in first half of 20th Century, but no recent records

[1]adapted from Davidson 2006 and IUCN 2006

Table 2. Waterbird Species of Conservation Concern Occurring in Boeng Chhmar Ramsar site [1]

Species	IUCN Status	Significance
Greater Adjutant *Leptoptilos dubius*	Endangered	second largest colony in the world (>10% of global population)
Spot-billed Pelican *Pelecanus philippensis*	Vulnerable	largest colony in the world (20% of global population)
Lesser Adjutant *Leptoptilos javanicus*	Vulnerable	largest colony in Southeast Asia (4% of global population)
Milky Stork *Mycteria leucura*	Vulnerable	largest colony in mainland Southeast Asia
Masked Finfoot *Heliopais personata*	Vulnerable	likely of global significance
Oriental Darter *Anhinga melanogaster*	Near-threatened	largest colony in Southeast Asia (>10% of global population)
Black-headed Ibis *Threskiornis melanocephalus*	Near-threatened	largest colony in Southeast Asia (4-8% of global population)
Painted Stork *Mycteria leucocephala*	Near-threatened	largest colony in Southeast Asia (20% of global population)
Black-necked Stork *Ephippiorhynchus asiaticus*	Near-threatened	breeds in Prek Toal
Grey-headed Fish-Eagle *Ichthyophaga ichthyaetus*	Near-threatened	likely of global significance
Little Cormorant *Phalacrocorax niger*	Least Concern (but Prek Toal population is internationally significant)	>1% of Asian biogeographic population
Indian Cormorant *Phalacrocorax fuscicollis*	Least Concern (but Prek Toal population is internationally significant)	>1% of Asian biogeographic population
Great Egret *Casmerodius albus*	Least Concern (but Prek Toal population is internationally significant)	>1% of Asian biogeographic population
Asian Openbill *Anastomus oscitans*	Least Concern (but Prek Toal population is internationally significant)	>1% of Asian biogeographic population
Wooly-necked Stork *Ciconia episcopus*	Least Concern (but Prek Toal population is regionally significant)	threatened as a breeding species in adjacent countries
Glossy Ibis *Plegadis falcinellus*	Least Concern (but Prek Toal population is regionally significant)	threatened as a breeding species in adjacent countries
Purple Heron *Ardea purpurea*	Least Concern (but Prek Toal population is regionally significant)	threatened as a breeding species in adjacent countries
Great Cormorant *Phalacrocorax carbo*	Least Concern (but Prek Toal population is regionally significant)	threatened as a breeding species in adjacent countries

[1]adapted from Goes 2005, Davidson 2006 and IUCN 2006 and ranger reports