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:

FOR OFFICE USE ONLY.

DD MM YY

Designation date | Site Reference Number

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2. Date this sheet was completed/updated:
15/9/2011

3. Country:
Lebanon

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.

Tyre Coast Nature Reserve (TCNR)

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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 ☒

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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.

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:

Since the last RIS, the major ecological changes in TCNR is the abundant presence of a new plant species: *Heterotheca subaxillaris*. The plant is 90 cm in height with yellow flowers resembling the Inula plant, and it was found next to the northern entrance of the reserve. Historically, *Heterotheca subaxillaris* was imported to Haifa in Palestine in 1975 and in 1992, it invaded the whole coastal area. According to Miller and Miller (1999) the plant species was found available at TCNR in 2008 mainly due to the fact that terrestrial birds feed on its seeds.

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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 TCNR is divided into two sections :

- Section E1 is a 1.8-km sand lined beach, 500 meters wide, extending from Tyre Rest House in the north to the Palestinian Rachidieh Refugee Camp in the south, and is bordered with low shrubs and vegetation to the East. It also includes the Mediterranean territorial waters to the west and bordered with the national road leading to Naquoura.
- Section AG is a 2 km of agriculture lands, extending from the Palestinian Rachidieh Refugee Camp in the north to the village of Chaetiyeh in the south, and is bounded by the prehistoric Ras el Ain springs in the east (1.5 km from the sea) and the Mediterranean territorial waters in the west.

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.

- Section E1: Lat. 35°12'30" - Long. 33°15'30"
- Section AG: Lat.35°12'55" – Long. 33°13'45"

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 TCNR is a nature reserve which lies south of the coastal city of Tyre, 80 km from the capital Beirut.

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

0 m

11. Area: (in hectares)

The TCNR covers an area of 380 ha

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

According to Corinne classification, the dune formation of Tyre Coast Nature Reserve lies under "Sand Dunes of Mediterranean Coast" type and belongs to "White Sand Dunes of the Mediterranean dominated by *Ammophilia arenaria*" habitat (code 16.2122) with *Echinophora spinosa*, *Eryngium maritimum*, *Euphorbia paralias*, *Cutandia maritime*, *Medicago marina*, and *Anthemis maritima*.

A national survey on biodiversity does not yet exist, however the importance of the site was evident as TCNR has been recognized as a location worthy of conservation as well as a unique site due to the following criteria:

1. It is the last bio-geographic ecosystem in Lebanon;
2. It is considered an important area for birds since it is located on major migratory routes, where internationally important bird species have been identified (currently the site is being studied for its potential nomination as an Important Bird Area (IBA);
3. It is important nesting site for two globally endangered species of sea turtles (*Caretta caretta* and *Chelonia mydas*);

4. It is the last remaining coastal agricultural land encompassing small family farms growing vegetables.

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).

Criteria 1 : the reserve has abundant fresh water resources. The uniqueness of the site is derived from the presence of ancient water springs, streams and marshes located only a few meters from the sea.

Criteria 2 : the reserve is an important nesting site for two globally endangered species of sea turtles: *Caretta caretta* and *Chelonia mydas*

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:

The bioclimatic zone in TCNR is sub humid, characterized by six months of drought from May to October. The average maximum temperature reaches its highest at 30.8°C in August. Meanwhile the average minimum temperature reaches its lowest at 10°C in January. On average, the yearly temperature is 20.8°C and the mean annual precipitation reaches 645 mm.

The land in Ras el Ain is made up of a layer of calcareous rock lying beneath a layer of soil slightly mixed with sand. Sand predominates on the stretch of the beach nearest to Tyre. The beach and sand dune area is made up of a mixture of quartz and carbonate sands, which are locally lithified to give beach rock. As for the main rock units, they are a sequence of porous and fissured lower and 'middle' Cretaceous limestone.

TCNR is located on the coast, however fresh surface water is present in the different zones thus creating unique habitats. The Ras el Ain area contains three constantly flowing artesian wells, used for drinking and agricultural purposes. Studies have shown that the water is unpolluted indicating a near pristine and healthy ecosystem devoid of significant pollution from agriculture and industry.

TCNR includes 275 species distributed over 50 families. In addition, the reserve is home to seven regionally and nationally threatened species, 4 endemic and 10 rare species, whilst 59 species are restricted to the Eastern Mediterranean area. It is also worthy to indicate that, several bio-indicator species as well as 25 medicinal species were recognized.

TCNR encloses flora species belonging to the various habitats: the sandy shore, rocky shore, littoral and freshwater ecosystems. A wide number of Gramineae, Fabaceae, Asteraceae and Umbellifereae families dominate the floristic resources. These families include widespread species in the world and especially around the Mediterranean coast.

However, there are signs of a changing vegetation cover such as *Cyperus laevigatus*, *Arthrocnemum Macrostachyum* and *Heterotheca subaxillaris*). Five plants present in the reserve are endangered either locally or regionally, namely:
(*Ficus sycomorus*, *Orchis papilionacea*, *Orchis collina*, *Lemna gibba* and *Lemna paucicostata*)

b) biogeographic regionalisation scheme (include reference citation):

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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.

Climate:

TCNR which has a sub humid Mediterranean climate, is characterized by six months of drought from May to October. On average, it has 300 days of sun a year with mean annual precipitation reaching up to 645 mm and yearly temperature of 20.8°C. The average maximum temperature reaches its highest at 30.8°C in August, and the average minimum temperature reaches its lowest at 10°C in January.

Geology and geomorphology :

The geologic formation of TCNR dates back to the quaternary age. Shallow horizons include sandstone, as for the limestone gravel content it increases as we progress eastward, away from the shoreline. Some of the sand dunes became sandstone, as for most of the remaining dunes they are free and mobile, as the sparse, scattered vegetation is unable to fix them.
A layer of calcareous rock characterizes the land in Ras el Ain over a depth of ten meters, which lies beneath a layer of soil slightly mixed with sand, which is extremely water absorbent.
Sand predominates on the stretch of beach nearest to Tyre. Towards Ras el Ain, it is interspersed with pebbly areas and rocky shelves with pools. The beach and sand dune area is made up of a mixture of quartz and carbonate sands, which are locally lithified to give beach rock. The underlying geology is very significant as it controls the existence of artesian springs. As for the main rock units, they are a sequence of porous and fissured lower and 'middle' Cretaceous limestone which is overlain by a sequence of Late Cretaceous chalks and marls. These in turn are overlain by a sequence of Lower Tertiary limestone. The entire sequence is gently dipping and broken by local faulting, some of which seems to be recent.

Hydrology :

The lower and middle Cretaceous limestone forms the aquifer that provides the majority of the region's water. The capping of the largely impermeable late Cretaceous has allowed the development of artesian wells where the water rises above ground level under natural pressure. The Ras el Ain area contains three constantly flowing artesian wells. The water at the wells rises up to 5 m above the ground level. The groundwater supplies fill into three major pools.

During the winter and early spring season, the fresh water table is very high leading to the formation of non-permanent pond areas in the conservation zones.

The site is located on the coast, however fresh surface water is present in the different zones thus creating unique habitats. The surface water located on site can be characterized as the following:

- The natural discharge of the Ras el Ain wells flows through a network of aqueducts. The water is partly used for irrigation of surrounding orchards, and partly diverted to the city of Tyre for potable usage.

- An outflow of the remaining water fraction (still the largest portion of total flow rates) to sea creates a unique freshwater-marine interface.
- Four fresh water ponds that are in close proximity to the sea, harbour important fresh water species.

Water quality :

Bottom sediments sampling (indication of chronic pollution of the wetland) and water sampling (indication of actual event based pollution) were taken for the following parameters:

- Nutrients: Nitrogen and phosphorus
- Heavy metals: Cadmium, chromium, nickel and lead
- Pesticides: mainly Organochlorines - DDT and its metabolites, Lindane group, and Cyclodienes
- (e.g. Aldrin, Heptachlor, Dieldrin, Endrin, Endosulfan)
- Others: pH and electrical conductivity (EC)

The overall results indicated that both water and sediments are unpolluted indicating a near pristine and healthy ecosystem devoid of significant pollution from agriculture and industry.

Tidal variations:

The tides are very small at Tyre, no more than 60 cm between February and October. The current movement of the Lebanese coastline is from south to north. Current velocities have not been precisely measured in the region, although reports from the port authorities of Tyre stated that it ranges from 0.2 to 1.4 m/sec (0.2 m was typical). The temperature of the water reaches a minimum of 17^0C in February and a maximum of 32^0C in August . At a depth of 70 m it is at a constant value of 17-18^0C.

Average salinity of the waters is 39.7, with a slight increase in the hot months due to evaporation. As the Aswan' Dam was raised, the supply of freshwater diminished, negatively affecting the marine productivity off the Lebanese coastline. At Ras el Ain, the flow of freshwater to the sea produces a small brackish zone .

17. Physical features of the catchment area:

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

18. Hydrological values:

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

The artesian wells of Ras El Ain serve the irrigation needs of the surrounding farmland, provide the drinking water needs of the region and also drain into the sea by a small channel that goes through the beach.

The groundwater is used for drinking and agricultural purposes.

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.

E – A – Y – 2 – Tp

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.

VEGETATION/HABITATS :

Formation of coastal rock *: Arthrocnemum macrostachyum, Crithmum maritimum, Limonium graecum, Limonium sinuatum.*

Formation of coastal sand and pebble *: Atriplex halimus, Agropyrum farctum, Eryngium maritimum, Lolium rigidum, Sporobolous pungens, Polygonum maritimum, Silene colorata, Convolvulus secundus, Crithmum maritimum, Echium angustifolium, Euphorbia paralias, Euphorbia peplis, Glaucium flavum, Ipomoea stolonifera, Limonium graecum, Limonium sinuatum, Otanthus maritimus and Pseudorlaya pumila.*

Formation of sand dunes *: Cakile aegyptiaca, Cyperus kalli, Matthiola tricuspidata, Agropyrum junceum, Muscari maritimum, Othanthus maritimus, Sporobolus pugens, Urginea maritime, Verbascum sinuatum, Pancratium maritimum, Salsola kali, Silene colorata decumbens; and secondarily with Astragalus berytheus, Cakile aegyptiaca, Cyperus kalli, Daucus aureus, Daucus littoralis,Echium angustifolium, Emex spinosa, Eryngium maritimum, Hippocrepis multisiliquosa, Lagonychium farctum, Lagurus ovatus, Matthiola tricuspidata, Muscari maritimum, Pancratium maritimum, Plantago albicans, Plantago squarrosa, Polygonum maritimum, Salsola kali, Silene colorata decumbens, Trifolium scabrum, Trigonella cylindracea, Vulpia membranacea, Inula graveolens, Nigella arvensis mutica.*

Formation of cultivated land *: Adonis annua, Convolvulus pentapetaloides, Medicago scutellata, Nigella arvensis mutica, Ononis hirta, Physalis peruviana, Salvia hierosolymitana, Salvia verbenaca serotina, Trigonella spinosa, Vicia hybrid, Cyperus rotundus.*

Formation of Ras el Ain wetland *: Carex divisa, Carex extensa, Cyperus alopecuroides, Cyperus laevigatus, Ipomoea palmata, Lemna gibba, Vigna luteola., Arundo donax,Typha angustifolia.*

Formation of near-water *: Alopecurus venrticosus, Bracharia eruciformis, Cynodon dactylon, Digitaria sanguinalis, Helosciadium nodiflorum, Trifolium resupinatum, Verbena officinalis, Arum hygrophilum, Dipsacus laciniatus, Drabopsis verna brachycarpus, Epilobium hirsutum, Hordeum hystrix, Lycopus europaeus, Lythrum salicaria, Mentha longifolia, Mentha pulegium, Myosotis caespitosa, Polygonum lapathifolium nodosum, Potentilla reptans, Pulicaria dysenterica, Salix alba, Scirpus tuberosus, and Veronica anagallis-aquatica.*

TCNR includes 275 species distributed over 50 families. In addition, the reserve is home to seven regionally and nationally threatened species, 4 endemic and 10 rare species, whilst 59 species are restricted to the Eastern Mediterranean area. It is also worthy to indicate that, several bio-indicator species as well as 25 medicinal species were recognized.

The animal communities are :

- Birds : TCNR is designated as an IBA site (204 species)
- Mammals : 13 mammal species distributed over 8 families
- Amphibians and reptiles : three different amphibian species and fifteen varied reptile species
- Fish : No surveys or research have been conducted in this area of study

- Invertebrates : the micro fauna include 6 species distributed over 6 genera. Four of them are gastropods and two insects

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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.*

TCNR encloses flora species belonging to the various habitats: the sandy shore, rocky shore, littoral and freshwater ecosystems.

A wide number of Gramineae, Fabaceae, Asteraceae and Umbellifereae families dominate the floristic resources. These families include widespread species in the world and especially around the Mediterranean coast. Some have important economic values, used as fodder (*Hyparrhenia hirta, Hordeum bulbosum*) and as medicinal plants (*Arundo donax*).

However, there are signs of a changing vegetation cover (by *Cyperus laevigatus* and *Arthrocnemum macrostachyum*) due to increased soil salinity or the decline of some plant species by human activities (soil extraction, grazing, drainage, etc…). In fact, as many as five plants present in the reserve are believed to be endangered either locally or regionally, namely:

- *Ficus sycomorus* (Egyptian fig tree) - was once a widespread species on the Lebanese littoral zones
- *Orchis papilionacea* (Butterfly orchid)
- *Orchis collina* (Fan-lipped orchid)
- *Lemna gibba* (Thick duckweed)
- *Lemna paucicostata* (Few-ribbed duckweed)

An example of the most sensitive plant species that may be affected by grazing goats and sheep is the two spiked beard grass *Andropogon distachyus*.

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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.*

Birds :

Four globally threatened species present in TCNR that are *Phalacrocorax pygmeus*, *Pelecanus crispus*, *Falco naummani* and *Crex crex*. Twelve regionally threatened species: *Botaurus stellaris*, *Ciconia ciconia*, *Aythya nyroca*, *Elanus coeruleus*, *Pernis apivorus*, *Neophron percnopterus*, *Gyps fulvus*, *Accipiter brevipes*, *Aquila pomarina*, *Falco cherrug*, *Falco biarmicus* and *Gallinago media* and eight wholly or partially restricted species to the Middle East: *Larus hemprichii*, *Glareola nordmanni*, *Pycnonotus xanthopygos*, *Irania gutturalis*, *Hippolais languida*, *Sylvia mystacea* and *Serinus syriacus.*

Mammals :

TCNR contains 13 mammal species distributed over 8 families. Two of these species are flying mammals that are generally considered threatened at both the global and regional level. The *Meles meles canescens* as well as the *Acomys dimidiatu* were recorded in TCNR and are considered to be globally threatened and nationally susceptible in Lebanon, respectively. In addition, two pest species were identified in TCNR, the domestic rat (*Rattus rattus*) and mouse (*Mus musculus*) which are usually indicators of organic waste accumulation.

Amphibians and reptiles :

There are three different amphibian species and fifteen varied reptile species, from which three are known to be globally threatened. In fact, the Loggerhead Turtle *Caretta caretta* and the Green Turtle *Chelonia mydas* constitute one of the most important examples of the Tyre coast richness in biodiversity. These animals are classified as a priority rank for conservation. The two Mediterranean species are listed in IUCN's Red Data Book (2000) as endangered species as for the *Chelonia mydas* it is categorized as critically endangered because global figures are so small.

Three species of marine turtles, Loggerhead turtles (*Caretta caretta*), Green turtles (*Chelonia mydas*) and Leatherback turtles (*Dermochelys coriacea*) are encountered in the Mediterranean. *Caretta caretta* and *Chelonia mydas* nest within the basin, as for the *Dermochelys coriacea*, it has occasionally been recorded in the sea.

It has been noticed in Tyre that there has been a strong decrease in the numbers of the caspian terrapin *Mauremys caspica*, which was once a very common species. Two more species of amphibians, the green toad *Bufo viridis* and the tree frog *Hyla savignyi*, have also shown severe decline in the agricultural area of the reserve. In addition, two desert species, shreiber's lizard *Acanthodactylus schreiberi* and ocellated skink *Chalcides ocellatus* were recorded in very located sites on the beach of Tyre inhabiting the sand of warm areas.

Invertebrates :

The micro fauna is impoverished and include 6 species distributed over 6 genera.

Four of them are gastropods; among them are the *Physella acuta*, which is pollution-resistant and is found in the lower part of the stream with 5 individuals and the *Succinea elegans*, which is found in the small marsh situated near the stream. The other two gastropods are the *Melanopsis praemorsa buccinoida* (10 individuals) and *Theodoxus jordani* (30 individuals) and were found at the outlet of the source. A community of *Hirudinea dina lineata* concolor with 4 individuals was found to proliferate in this site.

One insect *Platycnemis dealbata* of the group Odonata was captured at an adult stage (2 males and 2 females) whereas the larvae of *Zygopterous odonata* were collected from aquatic vegetation.

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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:

Agriculture:

The practiced agricultural activities in TCNR are of different types but mainly fodder culture and vegetable or legume culture. Moreover, efforts have been made to switch to organic farming to reduce the use of pesticides and fertilizers.

Tourism & leisure activities:

The tourism zone in section E1 of the reserve is a strong tourist attraction in the summer especially for swimmers.

As for eco-tourism, it is presently limited to some bird and turtle watching activities, a few educational visits by locals, and the recreational activities that are taking place each summer.

Fishing:

Fishing activities are taking place, however there is insufficient data needed for assessment.

Archaeological sites:

Ras el Ain is known for its ancient built aqueducts, watermill and pools. In addition, divers can visit underwater ruins as well as an old sunken ship.

Tyre is known to be a historical city with many archaeological sites and because of this it attracts tourists. Tourism and all the other activities (agriculture and fishing) are a source of revenue to the locals and to the reserve.

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:

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:

TCNR is a public land owned by the Lebanese government

b) in the surrounding area:

The area surrounding TCNR include :

- the Palestinian Rachidieh refugee camp, an army camp, the Mediterranean territorial waters and the national road leading to Naqoura: public property
- the Tyr Rest House : private resort
- the village of Cheatiyeh : public and private property

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25. Current land (including water) use:

a) within the Ramsar site:

Beach : tourism
Sea : fishing

Agriculture land : organic farming

b) in the surroundings/catchment:

Palestinian Rachidieh refugee camp : residence for Palestinians
Tyr Rest House : tourism
Army camp : security measures

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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:

- In the past and till now, a large number of people visit the beach during summer for recreation activities (3000 persons/weekend)
- According to the law, only 40 wooden booths are allowed to be in place, however there are 49
- Limited grazing and hunting activities
- The presence of a parking space near the beach
- The transfer of sand from the beach area to other parts of the site
- The occurrence of two fires in 2010

b) in the surrounding area:

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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.

- Law No. 444 (Code of Environment) specifies, under Chapter VIII, the protection, conservation and management of nature and biodiversity

- Law No. 708/98 declares the site as a nature reserve on November 5, 1998

- Law No. 508/04 is the latest decision for controlling hunting in terms of season, amount and type along with a permit system based on regular testing

- Decision No. 151/1 states the protection of marine turtles, monk seals and dolphins

- TCNR was designated as a Ramsar site (number 980)

- Wetland of International Importance by Ramsar (1999)

- The Convention on Biological Diversity (CBD) that was signed in 1992 and ratified in 1994 (Law No.360/94)

- The African Eurasian Water Bird Agreement (AEWA) that was ratified in June 2002 (Law No. 412)

- The Mediterranean Action Plan (UNEP) that was signed and ratified in 1975, the Barcelona Convention and protocols, and the revised Action Plan for the conservation of marine turtles (1999). Within the Mediterranean Action Plan, recommended actions at national level were listed for each country (UNEP-MAP/RAC/SPA, 1999).

- The United Nation Convention on the Law of the Sea that was signed and ratified in 1995.
- The Reserve is part of the city of Tyre, which was designated in 1984 by the United Nations
- Educational, Scientific and Cultural Organization (UNESCO) as a World Heritage Site.

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?:

Yes, a management plan exists as a result of the MedWetCoast Project which was launched in 2002. Since then, the management plan is still being implemented till today. The project's overall development objective is to conserve globally endangered species and their habitats, recognize wildlife conservation as an integral part of sustainable human development and improve capacity of government and non-government agencies to address biodiversity conservation issues.

d) Describe any other current management practices:

No other management plans exist.

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

The update of the existing management plan.

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

Sea turtles conservation and monitoring : tracking of sea turtles to indicate the proper nesting sites.

Implementation of the integrated monitoring program in TCNR "flora section", within the framework of the "support to nature reserve in Lebanon" funded by FFEM (2009-2011).

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.

- a visitors' centre under-construction, to be finished at the end of the year 2011
- information booklets and brochures

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

TCNR is known to be a touristic site because of its beach that receives 3000 visitors /weekend during summer.

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

TCNR is geographically located in the city of Tyre, South Lebanon. However, the management team is independent from the municipality of Tyre and constitutes a manager, an administrative assistant and three Rangers.

TCNR is under the mandate of the Ministry of Environment – Service of Natural resources – Department of Ecosystems being a nature reserve.

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.

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34. Bibliographical references:

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

- Tyre Coast Nature Reserve management plan;
- Business plan for Tyre Coast Nature Reserve (September 52005);
- Lebanese Science Journal, Vol. 10, No. 2, 2009;
- Field visit to the site and personal contacts.