



Memorandum of Understanding on the  
Conservation and Management of Marine Turtles and  
their Habitats of the Indian Ocean and South-East Asia

Distr. GENERAL

MT-IOSEA/SS.3/Report/  
Annex 4

**Draft proposal for the establishment of a network  
of sites of importance for marine turtles and  
associated communities of the Indian Ocean –  
South-East Asian (IOSEA) region**

*IOSEA Marine Turtle MoU Secretariat*

Version: February 2005

## ***Executive Summary***

The Indian Ocean – South-East Asia region is host to six species of marine turtles, important components of the earth's biodiversity. Highly migratory, most of the region's marine turtle populations have declined significantly, some having been eliminated almost completely. Various factors are thought to have contributed to turtle mortality in recent decades, among them: widespread exploitation for eggs, meat and shell, fisheries-related mortality (by-catch), destruction and degradation of critical habitats, pollution, and inappropriate management practices. Consequently, the value of marine turtles to coastal communities and other stakeholders has been relatively diminished, compared to former times.

The following proposal aims to establish a network of coastal and marine sites considered to be of vital importance for marine turtles of the Indian Ocean – South-East Asia region, in order to: (1) provide for their effective protection and conservation, (2) enhance recognition of their ecological significance among decision-makers and other stakeholders, and (3) stimulate opportunities for international collaboration. The sites will include important nesting, foraging, developmental and migratory habitats, and will serve as models of best practice that may be replicated throughout the region and elsewhere.

Sites meeting certain criteria (based on quantitative measures, on management considerations and other factors) may be nominated by Government agencies to become part of the network. The management of each site within the network will depend on local, national and regional circumstances, but each site will strive to:

- achieve the fundamental goal of reversing the loss of biodiversity;
- incorporate equally important social and economic objectives, as a means of benefiting indigenous and local communities and other relevant stakeholders;
- provide for adaptive management and effective governance, through stakeholder involvement in decision-making;
- draw on local knowledge and customary frameworks for management, and benefit from the expertise of individuals from a range of relevant disciplines; and
- secure sustainable financing from a variety of sources.

Effectiveness of management interventions will be monitored using a modified version of a tool for "Reporting Progress at Protected Area Sites" developed in 2003 by the World Bank and WWF.

The network of critical sites for marine turtles will seek to address the threats enumerated above. Apart from these direct conservation benefits, the network will provide an ideal framework for the development of other site-based activities, including basic training, management planning and support, monitoring and research, public awareness and community involvement, and information and personnel exchange. The network will enable stakeholders to obtain local, national and international recognition of the importance of their site and of their conservation efforts. It will generate public interest, education and support for places that would otherwise receive little attention or, worse, be sacrificed to unsustainable development. The added advantages of an international network of sites – as opposed to individual sites working in isolation – include unique opportunities for exchange of learning experiences, enhanced conservation impacts through common activities, a broader framework for research and management, and increased opportunities for leveraging funds.

The Signatory States to the *Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia* have endorsed the concept of establishing a site network associated with the Memorandum of Understanding. Having in place an existing institutional arrangement, linked to the United Nations Environment Programme, to underpin this initiative lends it credibility and offers material support.

Co-funding is sought from interested donors, including the European Union and the financial mechanism provided under the Marine Turtle Conservation Act adopted by the United States Congress in 2004. Other partners will include other Governments, national and international non-governmental organisations active in the region, as well as UN agencies and other IGOs, as appropriate.

# **Proposal for the establishment of a network of sites of importance for marine turtles and associated communities of the Indian Ocean – South-East Asian (IOSEA) region**

## **Purpose**

1. The following proposal aims to establish a network of coastal and marine sites considered to be of vital importance for marine turtles of the Indian Ocean – South-East Asia region, in order to:

(1) provide for their effective protection and conservation, (2) enhance recognition of their ecological significance among decision-makers and other stakeholders, and (3) stimulate opportunities for international collaboration. The sites selected will include important nesting, foraging, developmental and migratory habitats, and will serve as models of best practice that may be replicated throughout the region and elsewhere.

2. The management of each network site, selected according to agreed criteria, will depend on local, national and regional circumstances, but each should strive to embrace a new paradigm of protected areas. The sites should:

- serve to meet fundamental conservation goals (e.g. maximizing recruitment of healthy turtle hatchlings to the wild, as far as possible through natural processes; reducing or mitigating the effects of natural or man-made threats; restoring and rehabilitating degraded habitat, etc.);
- incorporate equally important social and economic objectives, as a means of benefiting indigenous and local communities and other relevant stakeholders (e.g. through socio-economic development, promotion of alternative livelihoods where appropriate, creation of incentives and mechanisms that promote local stewardship and conservation -- such as environmental service payments, tourism fees, cost-sharing plans etc.);
- be managed adaptively, with a long-term perspective and with due regard given to the needs of people who depend directly on the ecosystems concerned;
- provide for effective, accountable governance, seek to mitigate externalities and enhance compliance through stakeholder participation in decision-making;
- draw on local knowledge and customary frameworks for their management, and benefit from and integrate the expertise of individuals from a range of relevant disciplines and backgrounds -- not only from the realm of biology, ecology and natural resource management;
- secure sustainable financing and other support from a variety of sources, so as not to be entirely dependent on government, corporate or political goodwill; and
- be viewed and valued as community assets and, through greater awareness, come to be appreciated as being of local, national and international importance.

## **Institutional support**

3. The *Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia* (Annex 1) is an existing framework through which States of the Indian Ocean and South-East Asian region, as well as other concerned States, are working together to conserve and replenish depleted marine turtle populations for which they share responsibility. Having taken effect in September 2001, the IOSEA Marine Turtle MoU

now counts 20 Signatory States from across the region and beyond (Annex 2). Supported by an Advisory Committee of eminent scientists and complemented by the efforts of numerous nongovernmental and intergovernmental organisations, the Signatory States are working towards the collective implementation of a Conservation and Management Plan comprising 24 programmes and 105 separate activities.

4. Having in place an existing institutional arrangement, linked to the United Nations Environment Programme, to underpin this initiative lends it credibility and offers material support. The concept won the backing of the Second Meeting of the Signatory States (Bangkok, March 2004) which endorsed the idea of establishing a site network associated with the IOSEA Marine Turtle MoU.

## **Rationale**

5. The Indian Ocean – South-East Asia region is host to six species of marine turtles: Loggerhead *Caretta caretta*, Olive ridley *Lepidochelys olivacea*, Green *Chelonia mydas*, Hawksbill *Eretmochelys imbricata*, Leatherback *Dermochelys coriacea*, and Flatback *Natator depressus*. With few exceptions, most of the region's marine turtle populations have declined, some having been eliminated almost completely. Various factors are thought to have contributed to significant turtle mortality in recent decades, among them: widespread exploitation for eggs, meat and shell, fisheries-related mortality (by-catch), destruction and degradation of critical habitats, pollution, and inappropriate management practices. Consequently, their value to coastal societies, whether as sources of food, as sources of cultural and spiritual inspiration, or as critical components of complex ecosystems, has been relatively diminished, compared to former times.

6. The importance of maintaining the integrity of diverse habitats critical for marine turtle nesting, feeding and development is widely recognised in the conservation community and among other actors. Nevertheless, many such sites have been destroyed or degraded, resulting in the diminution of nesting populations through reduced reproductive success and recruitment. The extirpation of marine turtle populations is felt in many ways, including the loss of valuable ecosystem services they provide (such as facilitating nutrient cycling at both nesting and foraging habitats); loss of opportunities to produce revenue for local communities through eco-tourism; deprivation of aesthetic and patrimonial benefits for society and culture; and the elimination of an important natural resource for those who depend on the sea for their nutrition and livelihood.

7. One reason for this paradox may be a failure to adequately convey the importance of such sites to a variety of stakeholders, particularly decision-makers who are in a position to put in place protection measures to mitigate harmful activities, and primary users whose behaviour can either support or undermine management objectives. Whereas marine turtles and their habitats may be protected on paper, through national legislation and regulations, the implementation of conservation measures on the ground often lags far behind.

8. The Indian Ocean tsunami of December 2004 devastated coastal communities and destroyed the livelihoods of countless individuals who depend on the sea. This unprecedented calamity also seriously impacted marine turtle conservation activities in several countries, including a number of areas known to be important for marine turtles. It may be timely, therefore, to consider using the present proposal as a vehicle for not only rehabilitating a number of these sites and projects, but also to assure their viability over the longer term, which was by no means certain prior to the tsunami.

## **An alternative approach**

9. A network of sites for marine turtles would seek, among other things, to halt the destruction and degradation of critical habitats, reduce as far as possible other direct and indirect sources of turtle

mortality, introduce minimum standards of management practice, and ensure that any exploitation that might be permitted remained within sustainable levels.

10. Apart from these direct conservation benefits, a network would enable stakeholders (site owners, managers, participating organisations and communities) to obtain local, national and international recognition of the importance of their site and of their conservation efforts. Such networks can generate public interest, education and support for places that would otherwise receive little attention or, worse, be sacrificed to unsustainable development. They provide an ideal framework for the development of site-based activities, including basic training, management planning and support, monitoring and research, public awareness and community involvement, and information and personnel exchanges.

11. The added advantages of an international network of sites – as opposed to individual sites working in isolation – include unique opportunities for exchange of learning experiences, enhanced conservation impacts through common activities, a broader framework for research and management, even greater recognition and support, and increased opportunities for leveraging funds.

12. The network concept is not new: it has been applied successfully for the conservation of migratory birds in various parts of the world. Examples include the Important Bird Areas (IBA) programme in Europe, the Western Hemisphere Shorebird Reserve Network (WHSRN) in the Americas, and site networks for anatidae, cranes and shorebirds in the East Asia - Australasia region. The networks created under these programmes have raised the profile of their constituent sites and have stimulated international co-operation on a technical level. Lessons learned from the development of site networks for migratory birds could be applied in the context of a comparable site network for marine turtles. (Admittedly, in the case of the latter, interconnectivity of sites is not nearly as strong as it is for migratory birds and ecological links may be more difficult to establish in the absence of information on migration and genetic studies.)

### **Relationship to existing initiatives**

13. There are many other initiatives at various levels that provide for the designation and protection of sites of importance for biodiversity in the Indian Ocean – South-East Asian region. The World Heritage Convention, for example, has begun a process to try to increase the representation of coastal, marine and small island biodiversity sites in its World Heritage List. UNESCO's Man and Biosphere Programme, is another example, providing for the creation of biosphere reserves. The Ramsar Convention on Wetlands has designated more than 1,400 sites for inclusion in its List of Wetlands of International Importance. PERSGA aims, within its GEF-financed Strategic Action Programme for the Red Sea and Gulf of Aden, to establish a viable network of marine protected areas. The Association of Southeast Asian Nations (ASEAN) has its own heritage site designation scheme.

14. It must be said, however, that many of these initiatives are still at a nascent stage: “Of the 730 cultural and natural sites included in UNESCO's World Heritage List... less than one hundred sites are recognized for their biodiversity value and... less than 10 sites are recognized entirely for their marine biodiversity value” (Proceedings of the World Heritage Marine Biodiversity Workshop, 2003). According to PERSGA ([www.persga.org](http://www.persga.org)), while all countries of the Gulf region have designated marine protected areas, “they are few in number and only one or two are adequately managed”.

15. The IOSEA Marine Turtle Site Network (MTSN) does not intend to duplicate or operate on the same scale as these more ambitious initiatives, which have much broader objectives and require significant capital investment. The MTSN has a narrower focus and will be restricted, at least initially, to a small number of discrete sites, where resources can be concentrated to maximize effectiveness. Instead of trying to tackle problems on a large scale, where the available resources may not be sufficient to achieve demonstrable results, the MTSN will begin with a more manageable objective of creating model sites that function well, complementing and promoting synergy with other initiatives.

16. This is not to say that there are not lessons to be learned from, or parallels drawn with, more ambitious projects. On the contrary, the recent work under the World Heritage Convention to begin to identify significant coastal and marine ecosystems is exceedingly useful. Indeed, some of the sites identified there as being important habitats for marine turtles may serve as a starting point for developing a list of candidate IOSEA network sites. Similarly, the system developed over three decades under the World Heritage Convention for the nomination of World Heritage sites will be highly instructive. This includes its requirement for States Parties to develop a “Tentative List” from which candidate sites are drawn for submission.

## **Project implementation**

17. Sites may be nominated by Government agencies to become part of the IOSEA MTSN and will be accepted if they meet certain minimum criteria. It is expected that nongovernmental organisations will have an interest in suggesting sites for formal nomination by Governments, and may assist governmental bodies in the preparation of relevant documentation. The criteria for site selection may be based on: quantitative measures (e.g. number of species frequenting the area; number of clutches deposited over a certain time); the value of a site as an “index beach” or “index foraging area” for monitoring long-term population trends; management considerations (e.g. capacity for local management and community support); or other considerations (e.g. historical importance, with potential for recovery through a re-introduction scheme, for example). The selection criteria will likely be some combination of the above, weighted appropriately.

18. Nominations will be reviewed on merit by a panel of experts, and will be transmitted to a governing body for ultimate approval (procedure described in more detail, below). Upon acceptance of a site into the network, site managers may expect to receive educational and technical materials; assistance in developing a management plan; and support for research, monitoring, training, public outreach and educational activities. Through the network, opportunities will be created for twinning of sites, exchange of information and personnel, and other joint activities. Each site will be inaugurated through a formal dedication ceremony, including the handover of a unique certificate, and preparation of special signage that mentions the site’s affiliation with the IOSEA Marine Turtle MoU.

19. The proposed interventions at each network site can be described in terms of six broad categories, outlined below. A manager will be responsible for coordinating an initial site inventory to describe both biological and social attributes, and for facilitating the preparation of a comprehensive management plan for the site through participatory processes involving representative stakeholders. The site may already be under some form of management, in which case the existing manager could be co-opted to participate in the new framework; otherwise a new manager would need to be appointed for any new site.

20. The management plan will provide for the necessary infrastructure and human resources needed to support effective conservation interventions and to engage relevant stakeholders in the conservation programme’s objectives. Broadly speaking the work will be conducted in two phases:

Phase I – Planning, including: Development of shared objectives, potential implementation strategies, desired legal framework, monitoring and evaluation methodologies etc.)

Phase II – Implementation, including: securing legal status, awareness-raising, lobbying / advocacy, negotiation of agreements, actual conduct and monitoring of interventions etc.)

21. More specifically, the work at each network site will be framed by the following six components, under which individual activities will be carried out:

**Site inventory** – basic field/desk research to assess and describe the following features of the site, to provide a baseline against which to measure progress:

- Physical habitats - characteristics/condition
- Occurrence/status of flora and fauna
- Nature of human interactions with the site (i.e. socio-economic and traditional use values attached to / derived directly from the site)
- Relationship with local land-based as well as fishing communities who have impacted, or currently impact, the site
- Relationship with private sector ventures, such as tourism, agriculture, and fishing that impact, or are likely to impact, the site
- Direct natural and man-made threats to, or pressures on, the site (land-based and marine)
- Indirect (external) threats/pressures which may impact the site
- Current legal status, land tenure arrangements, administrative authority
- Historical condition of the site (in relation to the above) – review of existing information

### **Management Plan Development**

*Key elements:*

- Identification of site collaborators, and creation of framework for stakeholder involvement in the plan's development and on-going decision-making and follow-up activities
- Definition of site objectives (short, medium and long term)
- Securing of appropriate legal status; integration in national planning framework
- Securing of appropriate commitments from local communities and/or private sector
- Physical securing of protected area (categorisation, demarcation, system of patrols, enforcement etc.)
- Negotiation, as appropriate, of agreements to achieve a sustainable level of traditional take through a collaborative management framework, that might also provide for alternative livelihoods
- Establishment of long-term data collection/management system using standardised protocols
- Methodology for incorporation of results of monitoring, research, evaluation into planning
- Preparation of annual work plans, including time frames, resource requirements etc.
- Process of monitoring and definition/evaluation of effective management interventions
- Contingency planning for emergencies
- Conceptualisation of a longer-term plan for self-sufficiency
- Reporting

### **Infrastructure development**

- Construction or upgrading of visitor (information) centre, as appropriate
- Construction of guard stations, as appropriate
- Development of other materials in collaboration with participating communities
- Non-expendable equipment procurement and maintenance (e.g. for patrolling on land/sea)
- Provision of standard beach-management kits (e.g. basic research, monitoring equipment)

### **Human resource development / capacity-building**

- Recruitment or (re-)assignment of personnel (manager, guards, community outreach/education/development specialists, researchers etc.)
- Specialised staff training (methodology, team building etc.)
- Eco-volunteer programme
- Acquisition of standard reference materials
- Staff exchanges with other network sites and related institutions

### **Conservation interventions**

- Temporal (seasonal) restrictions on habitat use, as appropriate
- *In-situ* nest (i.e. clutch/egg) protection; measures to minimise mortality from all sources and maximise recruitment of healthy hatchlings
- *Ex-situ* nest protection in accordance with defined protocol
- Habitat restoration/rehabilitation, debris removal etc., as necessary
- Mitigation of undesirable impacts at or near the site (lighting, vehicles, invasive predators etc.)
- Research and long-term monitoring programme (on-site collection of biological and sociological data, genetics, tagging, pollution monitoring etc.)
- Extraordinary re-introduction programme (e.g. egg exchange between rookeries), when necessary/appropriate, with adequate long-term experimental design/monitoring to measure outcomes (i.e. only as a last resort intervention, to test the efficacy of this approach)

### **Community engagement and information sharing**

- Education and awareness programme for defined audiences
- Collaborative management framework, including incentives to involve local communities in benefit-sharing (e.g. managed eco-tourism, alternative livelihood development etc.)
- Initiatives to enhance community welfare (literacy, health projects etc.)
- Engagement of relevant nongovernmental and intergovernmental organisations
- Information exchange with other network sites
- Sharing of data with regional/global databases (e.g. IMapS)

### **Preliminary activities**

22. Preparatory work in advance of the launch of the site network will include the definition of the criteria for site selection, development of implementation guidelines for each of the six broad areas mentioned above, adaptation of the “management effectiveness tracking tool”, and development of a nomination form and instructions. Additionally, a basic framework for coordination and monitoring of network activities will be put in place.

23. IOSEA Signatory States will be invited to submit proposals of candidate sites from which initially up to [10] sites would be selected for support from this project. The reason for limiting the number is so that efforts under this project are focused on establishing effective demonstration sites that can serve as models elsewhere. (Signatory States would be welcome to nominate additional sites not funded through this project, or only partially funded, but subject to the same selection criteria. NGOs would be welcome to suggest possible sites for formal nomination by IOSEA Signatory States, and to assist in the preparation of relevant documentation.)

24. Each submission will include a justification for the proposed listing, and an indication of the matching (financial or in-kind) contributions to be provided by the Government, the administrative arrangements already in place or envisaged for managing the site, and the current baseline situation of the site, measured against the performance tracking tool.

25. The IOSEA MoU Advisory Committee will be responsible for evaluating the proposals, commenting and suggesting amendments to the proponents, and making recommendations to the Meeting of Signatory States with regard to possible acceptance or rejection.

26. Each Meeting of the Signatory States, held annually, would have on its agenda the consideration of any new candidate sites, and the responsibility of granting approval or conditional approval to sites, or rejecting their nomination, based on objective criteria, taking account of the Advisory Committee’s recommendations.



27. Countries with approved sites would be expected to designate, and preferably undertake to co-finance, a site manager before any disbursement of funds could take place. Thereafter, a first installment would be made to cover expenditures in relation to the site inventory and development of the management plan (including a budget for subsequent infrastructure and human resource development, as well as substantive interventions). Disbursement of funds and administrative arrangements may vary from site to site, depending on the prevailing conditions.

### **Indicative areas/sites**

28. Whereas the process of identifying appropriate sites for nomination should be rigorous, country-driven and involve a wide range of stakeholders, one may make use of reviews already undertaken in other fora to begin to draw up master lists of candidate sites, for preliminary consideration. A number of sources are readily available for consultation, and have been used to produce the indicative list of areas or sites that appears in Annex 3.

29. It may be worth re-emphasizing that the idea behind the Marine Turtle Site Network is to encourage the designation of sites whose importance might otherwise be overlooked, sites that receive little or no protection under other arrangements, or sites that might receive “added value” from being part of a network, rather than existing in isolation. Designating a site that is slated to become, or is already, a World Heritage Site or a UNESCO biosphere reserve, for example, might offer little additional benefit and should be considered less of a priority for designation. On the other hand, if it were estimated that a particular marine turtle site might not receive adequate attention in a much larger WHC complex, or if World Heritage status might take years to achieve, there could be grounds for singling out a particular site for immediate site network designation. The indicative list in Annex 3 makes no such distinction or judgment: it is merely a compilation of findings from other reviews to identify areas of importance for turtles. The six IUCN Protected Area Categories, familiar to most protected area managers, may be of value in categorizing the sites that are eventually selected to form the network.

### **Financial resources required and time frame (indicative)**

30. Up to five years of funding for the present project is sought, after which time the sites would be expected to be self-sufficient or maintained through direct Government and other funding. Capital outlays would be expected to be highest in Years 1 and 2, and substantially less in Years 3-5, to cover ongoing operational costs.

31. Funding needs will differ from site to site, and country to country, depending on local circumstances. In some countries, a site may already have protected status and conservation programmes and infrastructure in place, and will require funding only to meet incremental improvements. In other countries, a site may be designated that has never before benefited from protection, thus requiring substantial investment.

Budget (outline only, still to be elaborated)

Site specific requirements (some/all of the following):	
Personnel (manager, guards, outreach specialists, research staff etc.)	
Facilities, non-expendable equipment	
Expendable equipment, supplies	
Site improvements (habitat restoration, threat mitigation etc.)	
Community engagement and information sharing	
General operating expenses	
Overall network co-ordination	
Development of site selection criteria, general guidelines for site management	
Information exchange, development of common information materials	
Organisation of joint training activities	
Financial management / network oversight	

### Sources of funding

32. Conceptually, there may be at least two ways of presenting the proposal to interested donors:

The proposal could be offered as a complete package to a major donor that is able to provide sufficient funding to cover the network development and coordination costs, as well as the operating costs of a certain number of sites (backed by matching funds, as necessary). Administration and disbursement of funds would be handled centrally, so that the donor would need to have only one point of reference. This approach may be attractive to donors that would like to support interventions in many countries, without necessarily having to administer the project funding through separate arrangements.

33. Alternatively, some donors may be interested, and have the means, to support only individual sites, or certain aspects of implementation at particular sites. In such cases, the individual site might still be able to opt into the network by adopting the standard network protocol. In this case, however, donors would deal directly with the site management, and each site would be responsible for the administration of funds received. To assure that funds are still available to cover the basic network development and coordination costs, a certain percentage of the site's budget would revert to the coordinating body. In this way, individual sites could participate in, and received support from, the network and pay their fair share of the associated development and coordination costs. These two approaches are not mutually exclusive, and the network could embrace both of them simultaneously.

34. To complement the funds provided by major external donors, several sources of matching funds are anticipated:

- (1) Voluntary contributions from interested Governments, towards the overall operation of the site network, not necessarily linked to a particular site;
- (2) Financial and in-kind contributions from the site's host country;
- (3) Financial and/or in-kind contributions from interested non-governmental organisations (particularly those already working in the area or at the site), the private sector, academic and research institutions, and communities adjacent to the site.

## **Outcome assessment**

35. Critical to the long-term viability of each site and the overall efficacy of the network is the need to regularly monitor the effectiveness of management interventions. A tool developed in 2003 by the World Bank and WWF to track management effectiveness at protected areas (Reporting Progress at Protected Area Sites) could be readily adapted as a means of monitoring progress at a given site within the network. Completion of the tracking tool would be a requirement for proponents to undertake when submitting a site nomination.

## **Next steps**

36. The present proposal will be discussed at the Third Meeting of IOSEA Signatory States (Bangkok, 29-31 March 2005). After incorporating the comments received there, the proposal will be re-circulated for final substantive comment, after the meeting. Ideally, some progress will also have been made in Bangkok towards defining the site selection criteria.

37. At an appropriate time, the proposal will be circulated to Ministers with a view to receiving formal endorsement from interested countries, and possibly preliminary indications of the sites they intend to nominate once the arrangements for the network have been completed. In principle, the IOSEA Signatory States should be in a position to nominate candidate sites at any time, once the criteria for site selection have been adopted and the other arrangements are in place.

38. Concurrently, initial funding will be sought to develop the general guidelines for site management and other preliminary activities, to assist interested countries to prepare their site nomination proposals, and perhaps to prepare a detailed proposal for a demonstration project at one site that would serve as a model for the rest of the network.

### Annex 3: Indicative list of areas or sites of importance for marine turtles in the Indian Ocean South-East Asia region

The following list does not purport to be comprehensive, nor does it make any judgment as to whether a particular site or area would meet the criteria for, or would benefit from, inclusion in the Marine Turtle Site Network. (It is clear that the geographic scope of many of the areas described below extends beyond what is envisaged for the MTSN.) Non-Signatory States of the IOSEA Marine Turtle MoU, shown in italics, are included for illustration only. See also the discussion in the main text.

Country	Name of site/area	Remark	Source*
<b>South-East Asia + neighbours</b>			
Australia	Commonwealth Waters: Coringa-Herald NR, Lohou Reef NR, Ashmore Reef, Field Island; Western Australia: ca. 15 sites identified; Cocos Keeling Island; Queensland: ca. 30 sites identified; Great Barrier Reef Marine Protected Area: ca. 35 sites identified; Northern Territory: many sites, including ca. 10 specifically identified	Multiple species; using nesting, feeding and developmental habitats	(1)
Cambodia	ca. 30 specific islands and beaches identified in Sihanoukville and Kampot province	Nesting and feeding grounds	(1)
<i>Indonesia</i>	Raja Ampat region / Bird's Head Peninsula (Jamursba Medi Beach); Aru Islands	Includes region's largest leatherback turtle nesting site	(2)
<i>Indonesia</i>	Derawan Archipelago (Berau Islands) – Pulau Sangalaki, Pulau Sammana	Largest green turtle nesting rookery in SE Asia	(2)
<i>Indonesia</i>	Banda Sea/Lucipara cluster	Hawksbill turtles	(2)
<i>Malaysia</i>	Terengganu and Pahang States	Nesting leatherbacks (former times; almost extinct)	(10)
<i>Malaysia</i>	Terengganu mainland and island nesting sites (Pulau Redang, Ma'Daerah etc)	Mostly nesting green turtles (some hawksbills and olive ridleys – mainland sites)	(10)
<i>Malaysia</i>	Semporna/Tawi-tawi Island chain (Sabah)	Important sea turtle habitat	(2)
<i>Malaysia/Philippines</i>	Turtle Islands (Talang-Talang Besar, Talang-Talang Kecil and Satang Besar; Boan, Lihiman, Langaan, Great Bakkungan, Taganak, Baguan)	Important nesting sites for green and hawksbill turtles; migration corridor. Turtle Islands Heritage Protected Area in place since 1996.	(2)
Myanmar	Thamee Hla Island, Diamond and Little Coco Islands	Olive ridley turtles	(3)
<i>Papua New Guinea</i>	Kamiali Wildlife Area, Labu/Busama, Sio, Saidor, Talasea/Kilu, Madang/Long Island, Daru Island, Gasmata, Manus	Nesting and feeding areas	(1)
Philippines	Tubbataha-Cagayan ridge / Bastera and Beazley reefs	Important migration route for turtles	(2)
Philippines	Approx. 30 other specific nesting areas identified in Bataan, Zambales, Batangas, Palawan, Occidental Mindoro, Oriental Mindoro, Sorsogon, Catanduanes, Antique, Negros Occidental, Camiguin, Guimaras, Zamboanga de Sur, Davao City, Misamis Oriental, and Siregao del Sur	Mostly green and hawksbill turtles	(1)

Country	Name of site/area	Remark	Source*
Thailand	Gulf of Thailand: Kram Island, Kra Island; Andaman Sea: Phrathong Island, Khorkhao Island, Prapat Beach, Thaimuang Beach, Maikhaw Beach, Talibong Island, Similan Island	Nesting sites and feeding habitat, for mostly green and hawksbill turtles	(1)
Viet Nam	Con Dao islands (14 sites)	Green turtle nesting	(6)
Viet Nam	Nui Chua (Ninh Thuan), Quang Ninh to Kien Giang coastal areas, including Vinh Thuc Island, Minh Chau Beach, Bach Long Vy Island (Hai Phong), Phu Quy Island; Hon Gam-Ba Lang reefs		(6), (8)
Various (disputed territory)	Spratley Island group	Marine turtle nesting site	
<b>Northern Indian Ocean</b>			
Bangladesh	St. Martin's Island, Sondia and Kutubdia Island, Enani Beach, Maurdarbari (Sundarban)	Mostly olive ridley, some green turtle nesting	(1), (3)
<i>India</i>	Gahirmatha and Rushikulya beaches, Bahuda and Devi River mouths (Orissa), Krishna and Godavari River mouths (Andhra Pradesh), Tamil Nadu and Gujarat coasts, Kerala and Karnataka coasts, Andaman and Nicobar Islands, Lakshadweep Islands	Olive ridley, green and leatherback turtles migrating	(2), (3)
<i>Maldives</i>	Nesting islands in most atolls: e.g. Haa Alifu (Mulhadhoo Island); Baa Atoll (Kunfunadhoo, Maadhoo Islands); Ari Atoll (Hukureulhi Island); Laamu Atoll (Gadhoo Island)	Green and hawksbill turtles (nesting/foraging)	(2), (9)
<i>Pakistan</i>	Sindh (Hawkes Bay, Sandspit) and Baluchistan coasts	Olive ridley and green turtles nesting	(3)
Sri Lanka	Rekawa, Bandarawatta, Duwemodara, Kosgoda, Kahandamodara beaches etc (about 15 in total specifically identified)	Multi-species nesting beaches	(1), (7)
<b>Northwestern Indian Ocean</b>			
Eritrea	Fatuma Island group	Green and hawksbill turtles reported	
Egypt	Red Sea Islands	Green and hawksbill turtles (nesting/foraging)	
Islamic Republic of Iran	Booshehr Province: Nakhiloo, Ommolkaram Islands, Nayband Bay; Hormozgan Province: Shidvar, Hendourabi, Qeshm, Lavan, Kish, Hormoz Islands; Oman Sea area (Sistan and Baluchestan Province): Kratti, Tang, Pozm, Chabaha, Miami	Mostly green and hawksbill turtles	(1)
Jordan	Gulf of Aqaba		
Oman	Ras Al Hadd Cape, Masirah Island/Barr Al Hickman, Dimaniyat Islands, Al Hallaniyat Islands	Ras Al Hadd: most important green turtle rookery in Indian Ocean Masirah: largest loggerhead nesting grounds in the world	(1), (2)

Country	Name of site/area	Remark	Source*
<i>Qatar</i>	Al Ruwais Island and east coast	Green turtles	(3)
<i>Saudi Arabia</i>	Ras Baridi, Karan and Jana Islands	Green turtles	(3)
<i>Saudi Arabia</i>	Jubail Marine Wildlife Sanctuary	Largest green and hawksbill rookery in the Gulf	(2)
<i>Sudan</i>	Suakin Archipelago, Mohammed Qol Islands		(4)
<i>United Arab Emirates</i>	Murawah Island – Bu Tini Shoals	Feeding populations of green turtles, nesting hawksbills	(2)
<i>Yemen</i>	Belhaf – Bir Ali coast; Socotra Archipelago	Important turtle nesting/feeding areas	(2)
<b>Western Indian Ocean</b>			
Comoros	Moheli, other specific islands/beaches	Mostly green turtle nesting	(1), (4), (5)
<i>France</i>	Europa, Tromelin, Glorieuse	Very high number of nesting green turtles	(2), (4), (5)
<i>France</i>	Mayotte archipelago	Approx. 35 beaches important for green and hawksbill nesting	(4)
Kenya	Approximately 25 specific nesting beaches identified, and other 7 areas identified as feeding grounds	Mostly green and hawksbill turtles feeding	(1)
Madagascar	Northwest/North: Nosy Sakatia, Nosy Iranja, Nosy Hara; Northeast/East: Masoala, Ile Sainte Marie; Southeast: Ankaramany, Enakao, Ibakoko, Eledrato, Anstsotso, Sainte-Luce, Evatraha; Southwest: Nosy Ve, Ifaty, Toliara	Green, hawksbill, loggerhead, olive ridley turtles	(1) (2)
Mauritius	St. Brandon atoll, Caragados Carajas shoals, Agalega	Nesting and foraging habitat for green and hawkbill turtles	(1), (2), (4)
<i>Mozambique</i>	Mainland: south coast Maputo Bay - Ponta de Ouro, Inhambane, Inhassoro; Inhaca Island, Bazaruto Archipelago, Primeiras-Segundas Archipelago	Important nesting, foraging and developmental habitat for green turtles; other sites important for loggerhead and leatherback nesting	(2), (4)
Mozambique channel	Mozambique channel	Important migratory corridor for all species of turtles in the region (especially greens, leatherbacks and loggerheads)	(10)
Seychelles	Southern islands: Aldabra group (Aldabra/Asomption & Cosmoledo/Astove), Farquhar group (Farquhar & Providence/Cerf)	Important green turtle nesting, and foraging habitat for immature green turtles and hawksbills	(1), (4), (5), (10)
Seychelles	Amirantes (esp. D'Arros/St. Joseph, Poivre, Alphone/ St. Francois), Granitic islands (Aride, Bird, Cousin, Cousine, Curieuse, Ste Anne) and Platte & Coetivy	Important hawksbill nesting, and foraging habitat for immature hawksbills and green turtles	(1), (4), (5), (10)
<i>Somalia</i>	Bajuni	Nesting sites for olive ridley, green and hawksbill turtles	(2)
<i>South Africa</i>	KwaZulu-Natal coast: Maputaland Marine Reserve, St. Lucia Marine Reserve, Aliwal Shoal, Pondoland, Tsitsikamma Nature Reserve, Aghulas Bank	Mostly leatherback and loggerhead turtles	(1), (5)
United Kingdom	Chagos Archipelago: Peros Banhos Atoll, Diego Garcia, Salomon Atoll, Egmont Atoll, Chagos Bank (Danger Island, Cow Island)	Hawksbill and green turtles nesting/feeding	(2), (1)
United Rep. of Tanzania	Mafia Island; Zanzibar: Unguja, Pemba Islands	Hawksbill and green turtles nesting/feeding	

\* Information sources:

- (1) IOSEA Marine Turtle MoU National Reports (Australia, Bangladesh, Cambodia, Comoros, Islamic Republic of Iran, Kenya, *Madagascar*, Mauritius, Oman, Philippines, *Papua New Guinea*, Seychelles, *South Africa*, Sri Lanka, Thailand, United Kingdom)
- (2) Proceedings of the 2002 World Heritage Marine Biodiversity Workshop (and related background papers: <http://international.nos.noaa.gov/heritage>) – UNESCO World Heritage Centre, 2003
- (3) A Marine Turtle Conservation Strategy and Action Plan for the Northern Indian Ocean – IUCN, 2001.
- (4) A Strategy to Conserve and Manage the Sea Turtle Resources of the Western Indian Ocean Region, Mortimer, 2001
- (5) A Marine Turtle Conservation Strategy and Action Plan for the Western Indian Ocean – IUCN, 1996.
- (6) Vietnam's First National Workshop on Marine Turtle Conservation, 2001
- (7) Classification of Sea Turtle Nesting Beaches of Southern Sri Lanka (Amarasooriya, 2000)
- (8) Proceeding of a Training Workshop (2-4 September 2002) on Sea Turtle Research, Biology and Conservation in Cambodia, 2004
- (9) Maldives Marine Research Bulletin, 2000
- (10) Personal communication (J. Mortimer)