Information Sheet on EAA Flyway Network Sites (SIS) – 2017 version

Available for download from http://www.eaaflyway.net/about/the-flyway/flyway-site-network/

Categories approved by Second Meeting of the Partners of the East Asian-Australasian Flyway Partnership in Beijing, China 13-14 November 2007 - Report (Minutes) Agenda Item 3.13

Notes for compilers:

1. The management body intending to nominate a site for inclusion in the East Asian - Australasian Flyway Site Network is requested to complete a Site Information Sheet. The Site Information Sheet will provide the basic information of the site and detail how the site meets the criteria for inclusion in the Flyway Site Network. When there is a new nomination or an SIS update, the following sections with an asterisk (*), from Questions 1-14 and Question 30, must be filled or updated at least so that it can justify the international importance of the habitat for migratory waterbirds.

2. The Site Information Sheet is based on the Ramsar Information Sheet. If the site proposed for the Flyway Site Network is an existing Ramsar site then the documentation process can be simplified.

3. Once completed, the Site Information Sheet (and accompanying map(s)) should be submitted to the Flyway Partnership Secretariat. Compilers should provide an electronic (MS Word) copy of the Information Sheet and, where possible, digital versions (e.g. shapefile) of all maps.

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1. Name and contact details of the compiler of this form*:

Full name: Dr Mark Carey

Institution/agency: Migratory Species Section

Wildlife, Heritage and Marine Division

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Australia

EAAF SITE CODE FOR OFFICE USE ONLY:

E	A	A	F	1	3	2

Telephone:

Fax numbers:

E-mail address:

2. Date this sheet was completed*:

July 2016

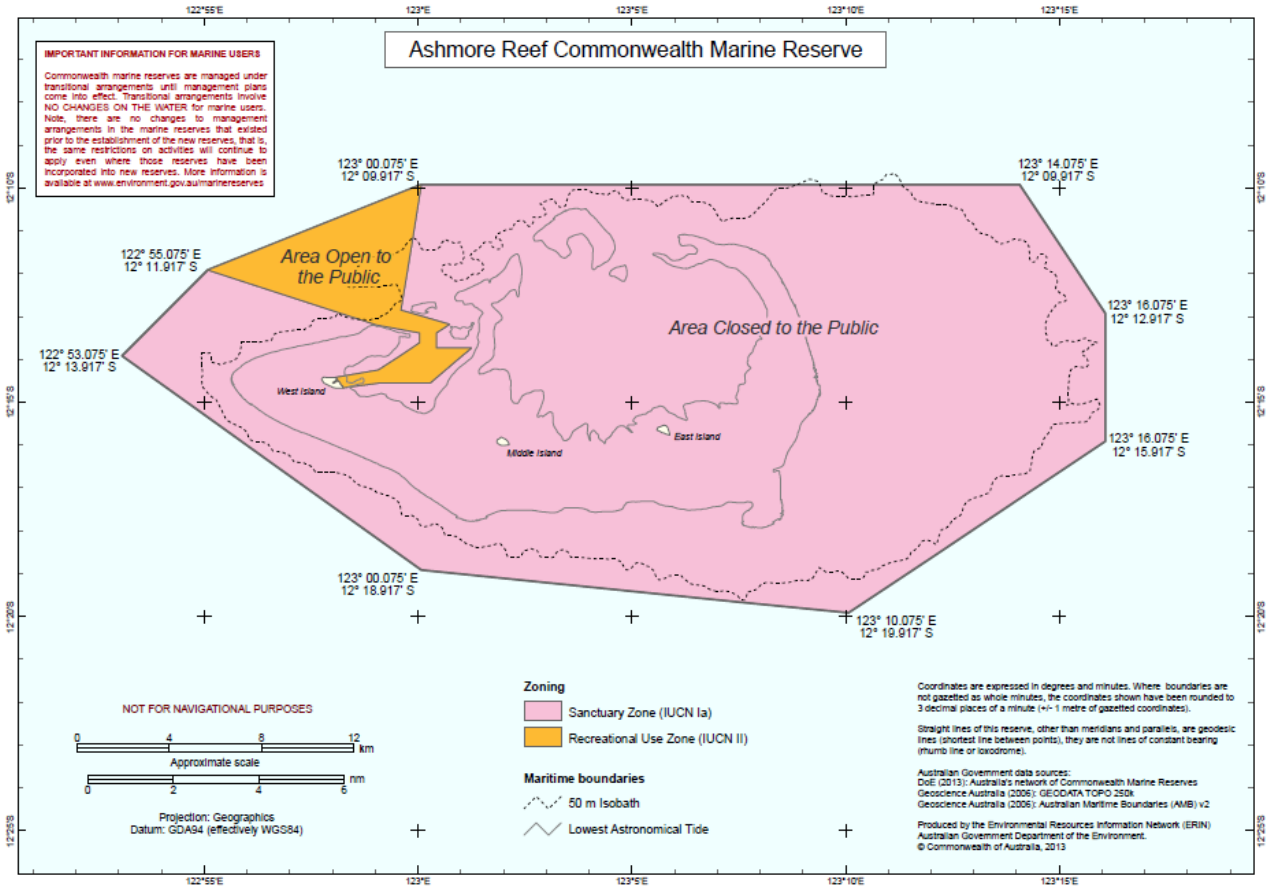
3. Country*:

Australia

4. Name of the Flyway Network site*:

Ashmore Reef Commonwealth Marine Reserve

5. Map of site*:



6. Geographical coordinates (latitude/longitude, in decimal degrees)*:

Latitude: 12° 20’ S, Longitude: 123° 00’ E

7. Elevation*:

0 -3 m above sea level.

8. Area*:

58, 300 hectares, total land area ~55 ha

9. General overview of the site*:

Ashmore Reef, contained within the Ashmore Reef Commonwealth Marine Reserve (the Reserve), is one of only three emergent oceanic reefs present within the north-eastern Indian Ocean, and is the only one in this region with vegetated islands.

The Reserve is comprised of numerous marine habitats and consequently supports an important and diverse range of species. The internationally significant sea snake community, the potentially genetically distinct population of Dugong, the highly diverse marine invertebrate fauna, and the numerous endemic species (either to the Reserve or the oceanic reefs in the region) supported by the Reserve are particularly noteworthy. Furthermore, the Reserve includes important seabird and turtle nesting sites and supports large populations of migratory shorebirds.

10. Justification of Flyway Site Network criteria*:

This Flyway Site, meets the following criteria:

a. Convention on Wetlands (Ramsar, Iran, 1971) criteria for internationally important sites for migratory waterbirds. That is:

Criterion 2: A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.

Criterion 5: A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.

Criterion 6: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

The Ashmore Reef Commonwealth Marine Reserve supports significant and diverse populations of migratory waterbirds. Ninety-three bird species have been recorded in the Reserve plus three additional species sighted at sea outside the Reserve (Milton 1999). These include significant populations of seabirds and shorebirds, including more than 40 species that are listed under the Japan-Australia Migratory Bird Agreement (JAMBA), China-Australia Migratory Bird Agreement (CAMBA) and the Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA). The Reserve is most important to populations of seabirds and migratory shorebirds at critical stages in their lifecycles. It has been estimated that the Reserve supports in the order of 100,000 breeding seabirds of 16 species (Clarke et al. 2011).

The Ashmore islands are regarded as supporting some of the most important seabird colonies on the North West Shelf, Australia. It has been estimated that the Reserve supports in the order of 100,000 breeding seabirds of 16 species and four heron species (Milton 1999, Clarke et al. 2011). Large colonies of Sooty Tern *Sterna fuscata* (max count 45,000; 1% = 12,000), Greater Crested Tern *Sterna bergii* (max count 5,000; 1% = 1,000), Bridled Tern *Sterna anaethetus* (max count 2,000; 1% = 1,000), Common Noddy *Anous stolidus* (max count 54,000; 1% = 10,000), Brown Boobies (max count 5,000; 1% = 2,000) and Lesser Frigatebirds (max count 4,000; 1% = 385) breed on the islands. Smaller breeding colonies of Black Noddy and Lesser Noddy also occur on the islands (Australian National Parks and Wildlife Service 1989, Stokes and Hinchey 1990, Clarke et al. 2011).

	Max count (1979 – 2010) (See Clarke et al. 2011)		
Species	**West Island**	**Middle Island**	**East Island**
Wedge-tailed Shearwater	60	0	0
Red-tailed Tropicbird	24	2	6
White-tailed Tropicbird	8	6	2
Eastern Reef Egret	700	0	0
Masked Booby	0	30	25
Red-footed Booby	0	220	40
Brown Booby	0	5,000	3,000
Great Frigatebird	0	65	10
Lesser Frigatebird	0	2,504	2,000
Greater Crested Tern	0	2,814	2,700
Bridled Tern	0	239	2,400
Sooty Tern	0	40,000	25,000
Common Noddy	0	17,000	54,000
Black Noody	0	180	1,500
Lesser Noddy	0	120	20

The Reserve provides an important habitat for many migratory shorebirds that use the Reserve's islands and sand cays as feeding and resting areas during their migration. Thirty species of migratory shorebird have been recorded on Ashmore Reef. The Bar-tailed Godwit, Common Greenshank, Sanderling, Grey Plover, Greater Sand Plover, Grey-tailed Tattler *Tringa brevipes* and the Ruddy Turnstone *Arenaria interpres* (Milton 1999, Swann 2001, Clarke et al. 2011) have been recorded using the Reserve during their migration, in numbers of international significance (more than 1% of the East Asian –Australasian Flyway population). A number of these migratory shorebirds are listed on the IUCN Red List: Far Eastern Curlew and Great Knot as Endangered; Curlew Sandpiper, Bar-tailed Godwit and Red Knot as Near Threatened.

Species	**Max count (1979 – 2010)**	**% Flyway population**	**EPBC Act Status***

Bar-tailed Godwit	4,560		1.4		CR/VU
Common Greenshank		590		1.0	
Grey-tailed Tattler	1,791		3.6		
Ruddy Turnstone	1,708		4.9		
Sanderling	1,132		5.1		
Grey Plover	1,511		1.2		
Greater Sand Plover	2,559		2.3		VU
Whimbrel	536		0.5		
Terek Sandpiper	216		0.4		
Great Knot	1,592		0.4		CR
Red-necked Stint	1,530		0.5		
Curlew Sandpiper	850		0.5		CR
Pacific Golden Plover	746		0.7		
Swinhoe's Snipe	1				
Black-tailed Godwit	8				
Little Curlew	50				
Far Eastern Curlew	4				CR
Common Redshank	1				
Marsh Sandpiper	1				
Common Sandpiper	9				
Asian Dowitcher	8				
Red Knot	55				EN
Little Stint	1				
Sharp-tailed Sandpiper		3			
Red-necked Phalarope		2			
Broad-billed Sandpiper		1			
Beach Stone-curlew	1				
Black-winged Stilt	14				
Lesser Sand Plover	32				EN
Oriental Plover		2			
Masked Lapwing	1				
Oriental Pratincole	1				
Australian Pratincole	2				

*Status as of July 2016 under the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999*

Between October-November and March-April flocks of Ruddy Turnstone *Arenaria interpres*, Whimbrel *Numenius phaeopus*, Bar-Tailed Godwit *Limosa lapponica*, Common Sandpiper *Tringa hypoleucos*, Lesser Sand Plover *Charadrius mongolus*, Red-Necked Stint *Calidris ruficollis* and Grey-tailed Tattler *Tringa brevipes* utilise the Reserve during migration between Australia and the Northern Hemisphere (Australian National Parks and Wildlife Service 1989). Flocks of migratory shorebirds at the Reserve have been estimated to total on occasion at least 18,000 birds (28 January 2005, Clarke 2010). In addition, thirty species of shorebird have been recorded at least once on Ashmore Reef, representing almost 70% of the species that regularly migrate to Australia (Watkins 1993).

11. Wetland Types*:

A -- **Permanent shallow marine waters** in most cases less than six metres deep at low tide; includes sea bays and straits.

B -- **Marine subtidal aquatic beds**; includes kelp beds, sea-grass beds, tropical marine meadows.

C -- **Coral reefs**.

E -- **Sand, shingle or pebble shores**; includes sand bars, spits and sandy islets; includes dune systems and humid dune slacks.

G -- **Intertidal mud, sand or salt flats**.

12. Jurisdiction*:

The Territory of Ashmore Reef and Cartier Island is administered by the Commonwealth of Australia.

13. Management authority*:

Director of National Parks
Parks Australia
Department of Sustainability, Environment, Water, Population and Communities
GPO Box 787, Canberra, ACT, 2601
Australia

14. Bibliographical references*:

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15. Physical features of the site:

Ashmore Reef is the region's largest emergent reef. The Reserve contains two extensive lagoons, extensive mobile channeled carbonate sand flats, shifting sand cays, an extensive reef flat, and three vegetated islands – East, Middle and West Islands (total land area ~55 ha). The reef fronts of the Reserves are punctuated with spur and groove formations and have a high diversity of robust corals. The reef crests are algal dominated and the reef flats are striated with lines of coral rubble. The two lagoons have a total of four northern entrances and are noted for their exceptional coral growth. All three islands at Ashmore have beach rock.

Naturally occurring hydrocarbon seeps have been identified throughout this major hydrocarbon province. Geosciences Australia (formerly the Australian Geological Survey Organisation) is currently investigating the relationships between the seeps and benthic community structure. It is thought that the seeps add significantly to the nutrient content and consequently the biota of the region's waters (Glenn and O'Brien 1999).

Sea surface temperatures vary seasonally with the highest oceanic water temperature recorded at 31 degrees Celsius. Lagoonal water has been recorded up to 35.4 degrees Celsius. Tidal ranges for the

Reserves exhibit a mean spring tide maximum of 4.75 metres (Flinders Institute for Atmospheric and Marine Sciences 1997).

The Reserve lies north of the Tropic of Capricorn and hence falls in the tropics. The climate is dry (arid tropical), and annual evaporation is twice that of the annual average precipitation of 950 mm. Most rainfall is restricted to the relatively short summer monsoonal period. Prolonged periods of rainfall are rare, and yearly rainfall is 950 mm. Monsoonal conditions dominate from December to May with thunderstorms occurring, on average, 85 days per year (Lavering 1993). Cyclones are common on the North West Shelf with the region experiencing an average of seven per cent of the annual global cyclone total (Pielke 1990). March, October, November and December are the calmest months (Australian National Parks and Wildlife Service 1989).

16. Physical features of the catchment area:

The regional oceanic processes of Australia's North West Shelf are influenced by several major factors including monsoons, dominant south-easterly winds, seasonal up-welling from the Indian Ocean, and the Indonesian Through Flow.

The Indonesian Through Flow carries warm low-saline water from the western Pacific Ocean into cooler, high nutrient, highly saline up-welling water of the Indian Ocean. The southward flowing Leeuwin Current originates in the region and flows southward along the Western Australian coastline. This is the only west-coast southern-flowing boundary current in the world. The interactions between these currents and the reefs of the Indo-Pacific play a significant role in the maintenance of coral reef and algal communities further to the south (Hatcher 1991).

17. Hydrological values:

Ashmore Reef lies within the East Indian Ocean, where the oceanography is influenced by Indian Ocean upwelling, the Indonesian Through Flow, and seasonal monsoons and trade winds. The semidiurnal tidal cycle ebbs and floods to the north-east/south-west (Glenn 1997) with a maximum range of 4.75 metres (Flinders Institute 1997).

There are large areas of mobile sand flats within the Reserve. Shifting sand cays and sand fans develop from the reef flat and encroach on the lagoons. Fresh water lenses occur on all three islands during the monsoon season, but only on West Island is this water used for drinking. A water pump has been installed near the beach for use by visiting Indonesian fishermen and there is a covered well near the centre of the island.

18. General ecological features:

Marine Habitats

Major marine habitats in the Reserve include the reef front and crest, reef flat, sand flats, and lagoons. The reef front and crest is comprised of hard and soft corals, gorgonians, sponges and a range of encrusting organisms. It provides habitat for a number of fish, crustaceans and echinoderms. The reef flats include areas of seagrass, primarily *Thalassia hemprichii.* Five species of seagrass have been collected from the reef. These are all species known to occur widely in the region. The seagrass beds provide important habitat for a number of species including Dugong and turtles. The sand flat habitats support a range of species including feeding turtles, stingrays, echinoderms, molluscs (including clams), crustaceans and migratory shorebirds. Areas of sandflats that do not dry at low tide also have a sparse cover of soft corals and various algae. The lagoon habitats support a wide range of fish, and predators such as sharks and sea snakes. It is also a feeding area for Dugong and turtles. The lagoons support corals, sponges and a range of holothurians, echinoderms and polychaetes on and beneath the substrate.

Terrestrial Habitats

Terrestrial habitats in the Reserve consist of three vegetated islands (West, Middle and East Islands) and numerous un-vegetated sand cays. The total land area in approximately 55 ha. The vegetated islands provide important nesting habitat for many species, including marine turtles and a number of seabirds and migratory birds.

A limited range of plant species have been recorded at the Ashmore islands. Evidence suggests an on-going dynamism in terrestrial species. New species may be introduced by ocean currents and human activities, and the loss of species may result from natural events such as cyclones, long dry seasons and beach erosion (Pike and Leach 1997).

West Island has a fringing shrubland community, comprising mainly *Argusia argentea* with isolated examples of *Guettarda speciosa, Scaevola sericea* and *Cordia subcordata*. The interior of the island is an open herb land, with *Boerhavia spp, Sida pusilla, Ipomea spp, Sesbania cannabina, Spinifex spp* together with a range of grasses. East Island is predominantly grassland, with a species mix that includes *Digitaria marianensis, Lepturus repens* and *Sporobolis virginicus.* Middle Island has the vestigial remnants of a fringing shrubland, comprising *Scaevola sericea, Argusia argentea* and *Suriana maritima* and an interior herbfield with areas of *Amaranthus interruptus* and *Cleome gynandra* along with a range of grasses similar to that found on East Island (Pike and Leach 1997). The Middle Island shrubs provide the nesting habitat for Great Frigatebirds (*Fregata minor).*

19. Noteworthy flora:

The marine flora of the Reserve is not well studied but there are significant seagrass beds that provide important habitat for a number of marine animal species.

Ashmore Reef is the only known location in Australia where the Asian Beach Spinifex *Spinifex littoreus* has been recorded (Pike and Leach 1997). Other than this, a limited range of plant species have been recorded at the Ashmore Islands. Evidence suggests an on-going dynamism in terrestrial species. New species are introduced by ocean currents and human activities, and the loss of species may result from natural events such as cyclones, long dry seasons and beach erosion (Pike and Leach 1997).

20. Noteworthy fauna:

The Reserve provides important habitat for an unusually high abundance and diversity of sea snakes (Hanley and Russell 1993), recognised as internationally significant. Within the Reserve there is estimated to be 40,000 sea snakes representing at least 13 species, the greatest number of sea snake species recorded for any locality in the world (Guinea 1995, Guinea and Pike 1994). Thick sea snakes of the subfamily Aipysurini are abundant, three species of which are endemic to Australia's North West Shelf. Some of these sea snakes have been observed to have extremely limited ranges and diets, depending entirely on very small areas of reef (Guinea, Northern Territory University, pers. comm.). Interestingly, some species of sea snakes present at both Ashmore Reef and the nearby Cartier Island, exhibit morphological differences (Guinea, Northern Territory University, pers. comm.).

The Reserve protects important habitat for feeding and breeding sea turtles, and supports large and significant populations of turtles. The nationally vulnerable Green Turtle *Chelonia myda,* Hawksbill Turtle *Eretmochelys imbricata* and the nationally endangered Loggerhead Turtle *Caretta caretta* are found in the Reserve (Guinea 1995). Preliminary surveys estimate that approximately 11,000 sea turtles feed throughout the year at Ashmore Reef (Guinea, Northern Territory University, pers. comm.).

The Reserve supports a small population of *Dugong dugon* with home ranges that possibly extend to Cartier Island and other submerged shoals in the region (Whiting 1999). Preliminary DNA studies indicate that this population may be genetically distinct from any other Australian population (Whiting 1999). The extent to which this population interacts with populations from the Australian or Indonesian coasts is not known.

The Reserve has a high diversity of marine invertebrates, including three endemic molluscs, *Amoria spenceriana, Cymbiola baili* and *Conus morrisoni* (Willan 1998). It is extremely unusual for such a range of endemic species to be found in such a small area of coral reefs. Importantly, the molluscan fauna found at Ashmore differ considerably from that of the Western Australian coast (Wells 1993).

The Ashmore islands are regarded as supporting some of the most important seabird colonies on the North West Shelf. It has been estimated that the Reserve supports in the order of 100,000 breeding pairs of seabirds of various species (Clarke et al. 2011). Large colonies of Sooty Tern, Greater Crested Tern, Bridled Tern and Common Noddy breed on the islands. Smaller breeding colonies of Black Noddy and

possibly Lesser Noddy also occur on the islands (Australian National Parks and Wildlife Service 1989). Many of the bird species present in the region are listed under JAMBA, CAMBA and ROKAMBA.

The Reserve is an important staging point for many migratory shorebirds. Thirty species of shorebird have been recorded at least once on Ashmore Reef. This represents almost 70% of the species that regularly migrate to Australia (Watkins 1993). Flocks of migratory shorebirds estimated on occasion to total at least 8,000 birds use the Reserve's islands and sand cays as feeding and resting areas (Ashmore Reef Patrol Report No. 3 of 1994, Australian National Parks and Wildlife Service 1999). Seven of these species occur in numbers of international significance (more than 1% of the East Asian-Australasian Flyway population).

21. 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:

Ashmore has been regularly visited and fished by Indonesians since the early eighteenth century (Fox 1988, Stacey 1999). Early travellers to Ashmore included the Bajo, migratory sea peoples originating from the coastline of Sulawesi and islands to the south, and fishers from the island of Roti (Fox 1988). The reef features in the songs and mythology of the Rotinese fishing villagers (Ashmore Reef Patrol Reports No 3 of 1994 and No. 1 of 1998). Some initial investigative work into the archaeological status of Ashmore regarding its association with Indonesian traditional fishermen has been carried out by the Northern Territory Museum (Clark 1998 and Clark 2000). Indonesian artefacts identified in the Reserve include ceramics, graves, ballast rocks and what could be a trepang (holothurian) cooking site. There are indications that future research into archaeological sites on West Island may cast light on the history of the Reserve.

Activities between 1850 and 1875, when a guano extraction industry was exploiting deposits on West Island, has been poorly recorded. Additional research on the islands may add to the knowledge of this period.

A 1974 Memorandum of Understanding between Australia and Indonesia sets out arrangements by which traditional fishers can access resources in the region. This allows traditional Indonesian fishers access to the Reserve for shelter and fresh water. Access is permitted to West Island Lagoon and part of West Island. Traditional fishers are also allowed to catch fish for immediate consumption, and to visit graves on all islands.

The reef has high potential and value for scientific research as it is a relatively pristine site and plays an important role as a biological 'stepping stone' for marine and terrestrial species.

Researchers regularly visit the Reserve in accordance with permits that are issued under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), considered on a case-by-case basis.

Tourism and recreation in the Reserves is mainly limited to West Island Lagoon and part of West Island. Most visitors arrive by private yacht. A few commercial bird watching tours occur each year. Historically there have been few visitors to the Reserve, and this is likely to continue due to its isolation.

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?

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:

22. Land tenure/ownership:

a) within the Flyway Network site:

The Territory of Ashmore Reef and Cartier Island is administered by the Commonwealth of Australia.

b) in the surrounding area:

Commonwealth of Australia

23. Current land (including water) use:

a) within the Flyway Network site:

The islands, reef and surrounding waters to a boundary approximately following the 50 m bathymetric contour have been declared the Ashmore Reef Commonwealth Marine Reserve. The Reserve is managed under the EPBC Act by the Director of National Parks, with the assistance of the Department of the Environment and Energy. Priority is given to the protection of the natural features of the Reserve. Commercial exploitation such as

commercial fishing, mining or oil exploration is prohibited within the Reserve. Other commercial activities such as commercial tourism may only be carried out upon a permit being issued by the Director of National Parks. Access to most of the Reserve is closed to all members of the public by a determination in force under the EPBC Act. Fishing for immediate consumption is permitted in West Island Lagoon of the Reserve.

b) in the surroundings/catchment:

24. 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 Flyway Network site:

Natural events such as cyclones have the potential to inflict considerable damage on both the terrestrial and marine environments of the Reserve, and have done so in the past. El Ninõ events in the Pacific can generate pulses of heated oceanic currents that can damage or kill coral formations and have a deleterious effect on other marine organisms (Ashmore Reef Patrol Report No. 1 of 1998).

Feral introductions also present a current and potential threat. In the past rodents were introduced to the three islands in the Reserve. Rats *Rattus rattus* were present in large numbers on West Island when the Reserve was declared. A protracted baiting program began in 1983 and is believed to have eradicated these rodents from the island. However, the possibility of rats being re-introduced from visiting Indonesian fishing vessels remains. Middle and East Islands have fluctuating populations of House Mice *Mus musculus*.

The activities of Indonesian fishers present a continuing issue for the management of the Reserve. Under the terms of the Memorandum of Understanding signed by the Australian and Indonesian Governments in 1974, traditional Indonesian fishers may call in at Ashmore Reef for shelter and to obtain supplies of fresh water from West Island. The MOU requires that they anchor only in the West Island Lagoon, where they may fish using hand lines.

In the past it was traditional practice for visiting fishermen to take turtles, seabirds and eggs for food and commerce and to collect marine shells and sea cucumbers (holothurians) to meet demand from Asian markets. Although such activities are now prohibited in the Reserve, there is a continuing level of illicit forays, with fishers targeting trochus shell and sea cucumbers. Strategies to combat this illegal fishing include continued cooperation with the Indonesian Government, continuing educational activities directed at the fishers, and a high level of surveillance. If necessary, prosecution measures will be enforced to ensure the protection of the Reserve.

Over the past decade Ashmore has been a destination for vessels transporting asylum seekers. Large numbers of vessels near reef and lagoon environments have the potential to cause damage to ecosystems.

b) in the surrounding area:

The areas of sea bed opened to oil exploration are opening up closer to the Reserve. Potentially, an oil spill from an off-shore petroleum platform or a bulk oil carrier could inflict damage on Ashmore Reef's fragile ecosystems.

25. Conservation measures taken:

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Flyway Network site:

The former Ashmore Reef National Nature Reserve has been renamed and incorporated in the North-west Commonwealth Marine Reserves Network. Interim management arrangements apply until a management plan for the North-west Commonwealth Marine Reserves Network is in place. These arrangements will remain in place until a new management plan is finalised for the North-west Commonwealth Marine Reserve network.

Under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), any activity in a marine reserve requires approval from the Director of National Parks in the period between proclamation of the reserves and the implementation of a management plan.

The approval from the Director of National Parks is issued under section 359B of the EPBC Act. Approval can be given to both individuals and to classes of persons, and can be issued with or without conditions on the approved activity.

Ashmore Reef Commonwealth Marine Reserve is located on Australia's North-West Shelf in the Indian Ocean, about 450 nautical miles (840 km) west of Darwin and 330 nautical miles (610 km) north of Broome. The reserve covers 583 km^2 and includes two extensive lagoons, shifting sand flats and cays, seagrass meadows, a large reef flat covering an area of 239 km^2. Within the reserve are three small islands known as East, Middle and West Islands.

Ashmore was designated a Ramsar Wetland of International Importance in 2003 due to the importance of its islands providing a resting place for migratory shorebirds and supporting large seabird breeding colonies.

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

IUCN Category Ia (550 km^2) - Sanctuary zone
IUCN Category II (33 km^2) - Recreational Use Zone

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

c) Does an officially approved management plan exist; and is it being implemented?:

A management plan for the North-west Commonwealth Marine Reserves Network will be developed in accordance with the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The plan will provide for the protection and conservation of each reserve by setting out how it will be managed, what activities will be allowed or prohibited and how this will be done. The management plan will address key aspects of management over the life of the plan (10 years).

Interim management arrangements under the EPBC Act for Ashmore commenced on 26 June 2009 following the expiry of the most recent management plan for the reserves. The interim management arrangements will continue unchanged until the North-west Commonwealth Marine Reserves Network management plan comes into effect.

Under the interim management arrangements, visitors to Ashmore Reef Commonwealth Marine Reserve will require approval to conduct certain activities from the Director of National Parks. These arrangements will remain in place until a new management plan is finalised for the North-west Commonwealth Marine Reserve network.

Ashmore Reef Nature Reserve and Cartier Island Marine Reserve - Information for Visitors describes the management arrangements for the renamed Ashmore Reef Commonwealth Marine Reserve and Cartier Island Commonwealth Marine Reserve and provides advice on how visitors, and other users of Ashmore and Cartier, should meet their obligations under the management arrangements.

d) Describe any other current management practices:

The former management plan for the Ashmore Reef National Nature Reserve expired on 25 June 2009. Transitional arrangements apply until a new management plan is in place for the North-west Commonwealth Marine Reserves Network.

26. Conservation measures proposed but not yet implemented:

27. Current scientific research and facilities:

Researchers are encouraged to carry out investigations in the Reserve where activities will contribute to the knowledge and management of the Reserve, and it can be clearly demonstrated that there will be no significant impact on the values of the Reserve. Sea snake, turtle, mollusc, insect, fish and coral populations in the Reserve have been studied in recent years. A preliminary survey of archaeological sites on the islands was carried out in 1996. A handbook on the terrestrial vegetation of the Reserve was published in 1997.

The new management plan commits to the development of a research plan that will identify gaps in scientific knowledge relating to the management of the Reserve, outline research priorities for the Reserve and encourage appropriate research.

28. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

Information on the Reserve is provided on the Australian Government's Internet site (http://www.environment.gov.au/topics/marine/marine-reserves/north-west/ashmore). A brochure explaining the management of the Reserve and providing background information on the flora, fauna and historical and cultural associations of the area is being updated and will be distributed to Reserve users by the Customs Service on-site managers, and to interested members of the public by Parks Australia.

Crews of visiting Indonesian fishing boats are played taped messages in Indonesian by Australian Customs Service on-site managers. These tapes explain the reasons for the establishment of the Ashmore Reef Commonwealth Marine Reserve, and the limits of access and restrictions on activities. Brochures in Indonesian will shortly be developed explaining restrictions and values of the Reserve. These will be given to Indonesian fishers accessing the Reserve.

29. Current recreation and tourism:

This is limited to perhaps an average of one or two visits per year by a commercial tourist boat with up to 20 passengers. Such visits are subject to permit conditions to protect the Reserve from impacts. Yachts also visit the Reserve. This usually comprises 40 to 50 vessels per annum, and visits are usually only of several days.

30. Threats *:

Which of the following threats is present historically – when the threat stopped but the effects are still there (H), currently (C) or potentially (P)?

	Historically	Currently	Potentially
Residential and commercial development			
housing and urban areas	☐	☐	☐
commercial and industrial areas	☐	☐	☐
tourism and recreation areas	☐	☐	☐
Agriculture and aquaculture			
annual and perennial non-timber crops	☐	☐	☐
wood and pulp plantations	☐	☐	☐
livestock farming and ranching	☐	☐	☐
marine and freshwater aquaculture	☐	☐	☐
Energy production and mining			
oil and gas drilling	☐	☐	☐
mining and quarrying	☐	☐	☐
renewable energy	☐	☐	☐
Transportation and service corridors			
roads and railroads	☐	☐	☐
utility and service lines	☐	☐	☐
shipping lanes	☐	☐	☐
flight paths	☐	☐	☐
Biological resource use			
hunting and collecting terrestrial animals	☐	☐	☐
gathering terrestrial plants	☐	☐	☐
logging and wood harvesting	☐	☐	☐
fishing and harvesting aquatic resources	☐	☐	☐
Human intrusions and disturbance			
recreational activities	☐	☐	☐
war, civil unrest and military exercises	☐	☐	☐
work and other activities	☐	☐	☐
Natural system modifications			
fire and fire suppression	☐	☐	☐

dams and water management/use	☐	☐	☐
other ecosystem modifications	☐	☐	☐
Invasive and other problematic species and genes			
invasive non-native/alien species	☐	☐	☐
problematic native species	☐	☐	☐
introduced genetic material	☐	☐	☐
Pollution			
household sewage and urban waste water	☐	☐	☐
industrial and military effluents	☐	☐	☐
agricultural and forestry effluents	☐	☐	☐
garbage and solid waste	☐	☐	☐
air-borne pollutants	☐	☐	☐
excess energy	☐	☐	☐
Geological events			
volcanoes	☐	☐	☐
earthquakes/tsunamis	☐	☐	☐
avalanches/landslides	☐	☐	☐
Climate change and severe weather			
habitat shifting and alteration	☐	☐	☐
droughts	☐	☐	☐
temperature extremes	☐	☐	☐
storms and flooding	☐	☐	☐

Please write here any additional threats and comments/queries you have on the threats.

Annex 1: Criteria for the inclusion of sites in the Flyway Site Network

(from the Partnership Text)

To be considered for inclusion in the Flyway Site Network, this Partnership adopts the following criteria:

b. Convention on Wetlands (Ramsar, Iran, 1971) criteria for internationally important sites for migratory waterbirds. That is:

Criterion 2: A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.

Criterion 5: A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.

Criterion 6: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

c. The staging criteria as applied under the Asia - Pacific Migratory Waterbird Conservation Strategy. That is:

i. A staging site should be considered internationally important if it regularly supports 0.25% of individuals in a population of one species or subspecies of waterbirds on migration.

ii. A staging site should be considered internationally important if it regularly supports 5,000 or more waterbirds at one time during migration.

c. Under exceptional circumstances a site can be nominated if it supports migratory waterbirds at a level or stage of their life cycle important to the maintenance of flyway populations. Justification of such nominations will be considered by the Partnership on a case by case basis.

Annex 2: Ramsar Classification System for Wetland Type

The codes are based upon the Ramsar Classification System for Wetland Type as approved by Recommendation 4.7 and amended by Resolutions VI.5 and VII.11 of the Conference of the Contracting Parties. The categories listed herein are intended to provide only a very broad framework to aid rapid identification of the main wetland habitats represented at each site.

To assist in identification of the correct Wetland Types to list in section 19 of the RIS, the Secretariat has provided below tabulations for Marine/Coastal Wetlands and Inland Wetlands of some of the characteristics of each Wetland Type.

Marine/Coastal Wetlands

A -- **Permanent shallow marine waters** in most cases less than six metres deep at low tide; includes sea bays and straits.

B -- **Marine subtidal aquatic beds**; includes kelp beds, sea-grass beds, tropical marine meadows.

C -- **Coral reefs**.

D -- **Rocky marine shores**; includes rocky offshore islands, sea cliffs.

E -- **Sand, shingle or pebble shores**; includes sand bars, spits and sandy islets; includes dune systems and humid dune slacks.

F -- **Estuarine waters**; permanent water of estuaries and estuarine systems of deltas.

G -- **Intertidal mud, sand or salt flats**.

H -- **Intertidal marshes**; includes salt marshes, salt meadows, saltings, raised salt marshes; includes tidal brackish and freshwater marshes.

I -- **Intertidal forested wetlands**; includes mangrove swamps, nipah swamps and tidal freshwater swamp forests.

J -- **Coastal brackish/saline lagoons**; brackish to saline lagoons with at least one relatively narrow connection to the sea.

K -- **Coastal freshwater lagoons**; includes freshwater delta lagoons.

Zk(a) – **Karst and other subterranean hydrological systems**, marine/coastal

Inland Wetlands

L -- **Permanent inland deltas**.

M -- **Permanent rivers/streams/creeks**; includes waterfalls.

N -- **Seasonal/intermittent/irregular rivers/streams/creeks**.

O -- **Permanent freshwater lakes** (over 8 ha); includes large oxbow lakes.

P -- **Seasonal/intermittent freshwater lakes** (over 8 ha); includes floodplain lakes.

Q -- **Permanent saline/brackish/alkaline lakes**.

R -- **Seasonal/intermittent saline/brackish/alkaline lakes and flats**.

Sp -- **Permanent saline/brackish/alkaline marshes/pools**.

Ss -- **Seasonal/intermittent saline/brackish/alkaline marshes/pools**.

Tp -- **Permanent freshwater marshes/pools**; ponds (below 8 ha), marshes and swamps on inorganic soils; with emergent vegetation water-logged for at least most of the growing season.

Ts -- **Seasonal/intermittent freshwater marshes/pools on inorganic soils**; includes sloughs, potholes, seasonally flooded meadows, sedge marshes.

U -- **Non-forested peatlands**; includes shrub or open bogs, swamps, fens.

Va -- **Alpine wetlands**; includes alpine meadows, temporary waters from snowmelt.

Vt -- **Tundra wetlands**; includes tundra pools, temporary waters from snowmelt.

W -- **Shrub-dominated wetlands**; shrub swamps, shrub-dominated freshwater marshes, shrub carr, alder thicket on inorganic soils.

Xf -- **Freshwater, tree-dominated wetlands**; includes freshwater swamp forests, seasonally flooded forests, wooded swamps on inorganic soils.

Xp -- **Forested peatlands**; peatswamp forests.

Y -- **Freshwater springs; oases**.

Zg -- **Geothermal wetlands**

Zk(b) – **Karst and other subterranean hydrological systems**, inland

Note: "**floodplain**" is a broad term used to refer to one or more wetland types, which may include examples from the R, Ss, Ts, W, Xf, Xp, or other wetland types. Some examples of floodplain wetlands are seasonally inundated grassland (including natural wet meadows), shrublands, woodlands and forests. Floodplain wetlands are not listed as a specific wetland type herein.

Human-made wetlands

1 -- **Aquaculture** (e.g., fish/shrimp) **ponds**

2 -- **Ponds**; includes farm ponds, stock ponds, small tanks; (generally below 8 ha).

3 -- **Irrigated land**; includes irrigation channels and rice fields.

4 -- **Seasonally flooded agricultural land** (including intensively managed or grazed wet meadow or pasture).

5 -- **Salt exploitation sites**; salt pans, salines, etc.

6 -- **Water storage areas**; reservoirs/barrages/dams/impoundments (generally over 8 ha).

7 -- **Excavations**; gravel/brick/clay pits; borrow pits, mining pools.

8 -- **Wastewater treatment areas**; sewage farms, settling ponds, oxidation basins, etc.

9 -- **Canals and drainage channels, ditches.**

Zk(c) -- **Karst and other subterranean hydrological systems**, human-made

Annex 3: IUCN Protected Areas Categories System

IUCN protected area management categories classify protected areas according to their management objectives. The categories are recognised by international bodies such as the United Nations and by many national governments as the global standard for defining and recording protected areas and as such are increasingly being incorporated into government legislation.

Ia Strict Nature Reserve
Category Ia are strictly protected areas set aside to protect biodiversity and also possibly geological/geomorphical features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values.

Ib Wilderness Area
Category Ib protected areas are usually large unmodified or slightly modified areas, retaining their natural character and influence without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.

II National Park
Category II protected areas are large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible, spiritual, scientific, educational, recreational, and visitor opportunities.

III Natural Monument or Feature
Category III protected areas are set aside to protect a specific natural monument, which can be a landform, sea mount, submarine cavern, geological feature such as a cave or even a living feature such as an ancient grove. They are generally quite small protected areas and often have high visitor value.

IV Habitat/Species Management Area
Category IV protected areas aim to protect particular species or habitats and management reflects this priority. Many Category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category.

V Protected Landscape/ Seascape
A protected area where the interaction of people and nature over time has produced an area of distinct charcter with significant, ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.

VI Protected area with sustainable use of natural resources

Category VI protected areas conserve ecosystems and habitats together with associated cultural values and traditional natural resource management systems.