BUNDESAMT FÜR
SEESCHIFFFAHRT
UND
HYDROGRAPHIE

Nachrichten für Seefahrer
Notices to Mariners

Amtliche Veröffentlichungen für die Seeschifffahrt
Official Maritime Publication

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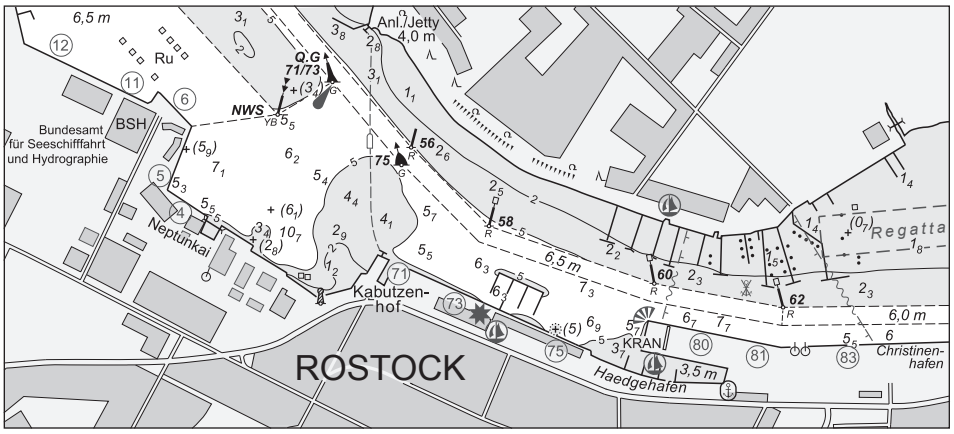

NfS 06/2019

Karten, Leuchtfeuerverzeichnisse, Seehandbücher usw. bitte sofort berichtigen

Geographische Länge bezogen auf den Nullmeridian.

Kurse und Peilungen rechtweisend in Graden von 000° bis 360°.

Sektorengrenzen der Feuer von See aus.

Tragweiten für 10 sm meteorologische Sichtweite; Sichtweiten für 5 m Augeshöhe.

Tiefenangaben und trockenfallende Höhen bezogen auf das Kartennull.

Andere Höhen bezogen auf kartenspezifische Höhenbezugsflächen.

Entfernungsangaben in metrischen Maßen sowie in Seemeilen (sm) und Kabellängen (kbl).

Zeichen und Abkürzungen in den deutschen Seekarten siehe Karte 1/INT 1.

Weitere Abkürzungen und Erklärungen in der „Jährlichen Beilage zu den Nachrichten für Seefahrer“ (NfS) sowie im „Handbuch für Brücke und Kartenhaus“.

Übersetzungen
Die bereitgestellten englischen Übersetzungen sind ein Service für die internationale Schifffahrt. Rechtsverbindlich ist der deutsche Text.

Freiwillige Mitarbeit
Jeder Hinweis zur Vervollständigung oder Berichtigung der nautischen Veröffentlichungen dient der Seeschifffahrt. Beiträge erbitten wir an das:

Charts, Lists of Lights, Sailing Directions etc. to be corrected immediately

Geographic longitude referred to Greenwich meridian.

True courses and bearings in degrees from 000° to 360°.

Sector limits of lights from seaward.

Luminous ranges at 10 nautical miles meteorological visibility, at 5 m height of eye.

Depths and drying heights referred to Chart Datum.

Other heights referred to chart specific height datum.

Distances in metric units, nautical miles, and cable lengths.

For symbols and abbreviations used in the German nautical charts, please refer to Karte 1/INT 1.

Additional abbreviations and explanations are provided in the enclosure to the “Annual enclosure to the Notices to Mariners” (NfS) and in the “Handbuch für Brücke und Kartenhaus”.

Translations
The provided English translations are a service for the international shipping. The German text version prevails in any case.

Voluntary cooperation
Any information provided to supplement or correct nautical publications supports the safety of navigation. Such information should be sent to:

Bundesamt für Seeschifffahrt und Hydrographie
Neptunallee 5, 18057 Rostock

Telefon/*Telephone*	+49 (0) 3 81 45 63-5	(Vermittlung/*operator*)
Telefax	+49 (0) 3 81 45 63-9 48	(Vermittlung/*operator*)
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P- und T-Berichtigungen/*P and T corrections*
Nach den Nachrichten für Seefahrer Heft 01/2017 bis zum Heft 05/2019
According to the German Notices to Mariners (NfS) issue 01/2017 to issue 05/2019

Neuerscheinungen des BSH/*New BSH publications*
Bücher/*Books*: –
Karten/*Charts*: –

Teil 1 – Berichtigungen zu den Karten/*Part 1 – Corrections to charts*

Nordsee/*North Sea*

2	50	103	1130	1220	1350
7	87	1100	1140	1300	1510
20	90	1110	1210	1320	1730
44	91				

Ostsee/*Baltic Sea*

32	T40	52	T162	T163	T1671
T36					

Teil 2 – Berichtigungen zu den Seebüchern/*Part 2 – Corrections to nautical publications*

4001	Leuchtfeuerverzeichnis, südwestliche Ostsee 2019
4003	Leuchtfeuerverzeichnis, südöstliche Nordsee 2019

Teil 3 – Mitteilungen/*Part 3 – Notifications*

- DE. Regional, Nord- und Ostsee. BSH. Bekanntmachungen/*DE. North Sea and Baltic Sea region. BSH. Notifications*
- IMO. Philippinen. Sulu Sea. Ausweisung des Tubbataha Reefs Natural Park als besonders empfindliches Meeresgebiet (PSSA)/*IMO. Philippines. Sulu Sea. Designation of the Tubbataha Reefs Natural Park as a Particularly Sensitiv Sea Area (PSSA)*

Beilagen/*Enclosures*

- DE. BSH. Deckblätter zum Lfv./*DE. BSH. Corrections to the List of Lights*
- IMO. Philippinen. Sulu Sea. Ausweisung des Tubbataha Reefs Natural Park als besonders empfindliches Meeresgebiet (PSSA)/*IMO. Philippines. Sulu Sea. Designation of the Tubbataha Reefs Natural Park as a Particularly Sensitiv Sea Area (PSSA)*

P- und T-Berichtigungen/*P and T corrections*

Gültige P- und T-Berichtigungen
vom 08. Februar 2019

Nach den Nachrichten für Seefahrer
Heft 01/2017 bis zum Heft 05/2019

P and T Corrections in force
dated 08. Februar 2019

According to the German Notices to Mariners (NfS)
issue 01/2017 to issue 05/2019

Karten-Nr. *Chart No.*		NfS-Heft-Nr. *NfS issue No.*
T	26	2017: 04
T	30	2017: 38, 49
T	31	2017: 20
		2019: 01
T	32	2017: 38, 49
T	34	2017: 44
T	36	2019: 04
T	40	2019: 01, 04
T	42	2019: 02
T	43	2017: 20
		2018: 46
T	46	2018: 27
		2019: 02
T	48	2018: 22
P	50	2018: 42
T	50	2018: 34
		2019: 03
T	87	2018: 23
T	90	2017: 14
		2018: 23, 35
T	100	2017: 04
T	151	2017: 47, 51–52
		2018: 10, 50
		2019: 04

Karten-Nr. *Chart No.*		NfS-Heft-Nr. *NfS issue No.*
T	162	2019: 01, 05
T	163	2019: 04
T	1110	2017: 50
		2018: 23
T	1120	2018: 24, 35
T	1160	2019: 04
T	1170	2019: 04
T	1230	2018: 40
T	1311	2018: 04
T	1340	2018: 29–30
T	1410	2017: 14
		2018: 29–30
T	1420	2018: 29–30
T	1430	2017: 14
T	1511	2017: 48
T	1513	2018: 34
T	1579	2018: 47
T	1622	2018: 47
T	1641	2019: 03
T	1662	2018: 22
T	1671	2019: 04
T	1711	2018: 27
		2019: 02
T	2181	2019: 05

Teil 1/*Part 1*
Berichtigungen zu den Karten/*Corrections to charts*

Nordsee/*NorthSea*

⋆ 2 **Scharhörnriff**
INT 1456
Letzte NfS: 05/19

Trage ein
Insert

mit 200m Radius
with 200m radius

53° 58,03’ N 008° 13,51’ E

(WSA Cuxhaven 8/19) 06/19

⋆ 7 **O-lich Umschlagbrücke (VYNOVA)**
INT 1460
Letzte NfS: 01/19

Trage ein
Insert

Mess-G.

53° 38,36’ N 008° 07,57’ E

(WSA Wilhelmshaven 1/19) 06/19

⋆ 20 **O-lich Umschlagbrücke (VYNOVA)**
INT 1424
Letzte NfS: 04/19

Trage ein
Insert

Mess-G.

53° 38,36’ N 008° 07,57’ E

(WSA Wilhelmshaven 1/19) 06/19

⋆ 44 **Scharhörnriff**
INT 1452
Letzte NfS: 05/19

Trage ein
Insert

mit 200m Radius
with 200m radius

53° 58,03’ N 008° 13,51’ E

(WSA Cuxhaven 8/19) 06/19

⋆ 50 **Deutsche Bucht**
INT 1045
Letzte NfS: 05/19

Trage ein
Insert

Fl(5)Y.20s
Mess-G.
4 Lcht-Tn.

55° 04,41' N 007° 47,61' E
54° 50,99' N 007° 52,12' E

(WSA Tönning 9/19) 06/19

⋆ 87 **St. Peter-Ording**
INT 1413
Letzte NfS: 05/19

Ersetze
Replace

St. Peter
LFl(2)WR.15s23m16/13M

durch
by

St. Peter
LFl(2)WR.15s23m16/13M
Sektoren/*sectors*
R: 334°–052°
W: 052°–080°
R: 080°–091°
W: 091°–120°

54° 17,24' N 008° 39,13' E

(WSA Tönning 4/19) 06/19

⋆ 90 **NW-lich Hubertgat**
INT 1461
Letzte NfS: 05/19

Trage ein
Insert

53° 35,97' N 006° 17,84' E

(WSA Emden 28/19) 06/19

⋆ 91 **NW-lich Port Knock**
INT 1462
Letzte NfS:
51-52/18

Trage ein
Insert

53° 21,52' N 006° 58,86' E

(WSA Emden 30/19) 06/19

*** 103** **Deutsche Bucht. St. Peter-Ording**
INT 1412
Letzte NfS: 05/19

Trage ein
Insert

Fl(5)Y.20s
Mess-G.
4 Lcht-Tn.

55° 04,41' N 007° 47,61' E
54° 50,99' N 007° 52,12' E

Ersetze
Replace

St. Peter
LFl(2)WR.15s23m16/13M

durch
by

St. Peter
LFl(2)WR.15s23m16/13M
Sektoren/*sectors*
R: 334°–052°
W: 052°–080°
R: 080°–091°
W: 091°–120°

54° 17,24' N 008° 39,13' E

01/19 – T 103 aufgehoben/*cancelled*

(WSA Tönning 4, 9/19) 06/19

*** 1100** **NW-lich Hubertgat**
Letzte NfS: 47/18

Trage ein
Insert

53° 36,0' N 006° 17,8' E

(WSA Emden 28/19) 06/19

*** 1110** **NW-lich Hubertgat**
Letzte NfS: 05/19

Trage ein
Insert

53° 35,97' N 006° 17,84' E

(WSA Emden 28/19) 06/19

*** 1130** **NW-lich Port Knock**
Letzte NfS:
51-52/18

Trage ein
Insert

53° 21,52' N 006° 58,86' E

(WSA Emden 30/19) 06/19

⋆ 1140 **NW-lich Port Knock**
Letzte NfS:
51-52/18

Trage ein
Insert

53° 21,52’ N 006° 58,86’ E

(WSA Emden 30/19) 06/19

⋆ 1210 **Elbe-Ansteuerung**
Letzte NfS: 05/19

Trage ein
Insert

mit 200m Radius
with 200m radius

53° 58,03’ N 008° 13,51’ E

(WSA Cuxhaven 8/19) 06/19

⋆ 1220 **Scharhörnriff**
Letzte NfS: 05/19

Trage ein
Insert

mit 200m Radius
with 200m radius

53° 58,03’ N 008° 13,51’ E

(WSA Cuxhaven 8/19) 06/19

⋆ 1300 **St. Peter-Ording**
Letzte NfS: 05/19

Ersetze
Replace

St. Peter
LFl(2)WR.15s23m16/13M

durch
by

St. Peter
LFl(2)WR.15s23m16/13M
Sektoren/*sectors*
R: 334°–052°
W: 052°–080°
R: 080°–091°
W: 091°–120°

54° 17,24’ N 008° 39,13’ E

(WSA Tönning 4/19) 06/19

⋆ 1320 **St. Peter-Ording**
Letzte NfS: 05/19

Ersetze
Replace

St. Peter
LFl(2)WR.15s23m16/13M

durch
by

St. Peter
LFl(2)WR.15s23m16/13M
Sektoren/*sectors*
R: 280°–282°
W: 282°–334°
R: 334°–052°
W: 052°–080°
R: 080°–091°
W: 091°–120°

54° 17,24’ N 008° 39,13’ E

(WSA Tönning 4/19) 06/19

⋆ 1350 **St. Peter-Ording**
Letzte NfS: 05/19

Ersetze
Replace

St. Peter
LFl(2)WR.15s23m16/13M

durch
by

St. Peter
LFl(2)WR.15s23m16/13M
Sektoren/*sectors*
R: 280°–282°
W: 282°–334°
R: 334°–052°
W: 052°–080°
R: 080°–091°
W: 091°–120°

54° 17,24’ N 008° 39,13’ E

(WSA Tönning 4/19) 06/19

⋆ 1510 **O-lich Umschlagbrücke (VYNOVA)**
Letzte NfS:
51-52/18

Trage ein
Insert

Q
Mess-G.

53° 38,36’ N 008° 07,57’ E

(WSA Wilhelmshaven 1/19) 06/19

⋆ 1730 **SO-lich Schleuse**
Letzte NfS: 39/18

Plan A

Trage ein
Insert

#

54° 15,698’ N 008° 51,072’ E

(WSA Tönning 10/19) 06/19

Ostsee/*Baltic Sea*

⋆ 32 **Eckernförde**
INT 1359
3003
Letzte NfS: 04/19

Plan E

Trage ein
Insert

54° 28,406’ N 009° 50,626’ E

(WSA Lübeck 27/19) 06/19

⋆ T 36 **Kühlungsborn**
INT 1352
Letzte NfS: 05/19

Ersetze
Replace

Fl(2)5s durch *by* 

bezeichnet marked

54° 09,44’ N 011° 46,12’ E

04/19 – T 36 aufgehoben/*cancelled*

(WSA Stralsund 14(T)/19, 29.01.2019) 06/19

⋆ T 40 **W-lich Adlergrund**
INT 1201
3006
Letzte NfS: 05/19

Trage ein
Insert

VQ
MUN N

54° 48,79’ N 013° 41,84’ E

VQ(6)+LFl.10s
MUN S

54° 49,16’ N 013° 54,32’ E

(WSA Stralsund 133(T)/18) 06/19

⋆ 52 **Eric-Warburg-Brücke**
INT 1363
3004
Letzte NfS: 30/17

Ersetze
Replace

durch
by

Fl(2+1)G.15s

53° 53,038’ N 010° 41,518’ E
53° 53,005’ N 010° 41,478’ E

durch
by

Fl.R.4s

53° 53,020’ N 010° 41,560’ E
53° 52,986’ N 010° 41,522’ E

(WSA Lübeck 23/19) 06/19

⋆ T 162 **W-lich Adlergrund**
INT 1342
Letzte NfS: 05/19

Trage ein
Insert

VQ
MUN N

54° 48,79’ N 013° 41,84’ E

VQ(6)+LFl.10s
MUN S

54° 49,16’ N 013° 54,32’ E

(WSA Stralsund 133(T)/18) 06/19

⋆ T 163 **Kühlungsborn**
INT 1351
3005
Letzte NfS: 04/19

Ersetze
Replace

Fl(2)5s

durch
by

bezeichnet
marked

54° 09,44’ N 011° 46,12’ E

04/19 – T 163 aufgehoben/*cancelled*

(WSA Stralsund 14(T)/19, 29.01.2019) 06/19

⋆ **T 1671**
INT 1354
Letzte NfS: 04/19

Kühlungsborn

Ersetze
Replace

Fl(2)5s durch *by* 

bezeichnet marked 54° 09,44’ N 011° 46,12’ E

04/19 – T 1671 aufgehoben/*cancelled*

(WSA Stralsund 14(T)/19, 29.01.2019) 06/19

Teil 2/*Part 2*
Berichtigungen zu den Seebüchern/*Corrections to nautical publications*

(Gültig bis zur nächsten Ausgabe)
(Valid till next edition)

4001 Leuchtfeuerverzeichnis, südwestliche Ostsee 2019

Berichtigung als Beilage in der Mitte des Heftes

(BSH N2/19) 06/19

4003 Leuchtfeuerverzeichnis, südöstliche Nordsee 2019

Berichtigung als Beilage in der Mitte des Heftes

(BSH N2/19) 06/19

Teil 3/*Part 3*
Mitteilungen/*Notifications*

⋆ DE. Regional, Nord- und Ostsee. BSH. Bekanntmachungen

Bekanntmachung des Bundesamtes für Seeschifffahrt und Hydrographie über die Einleitung des Verfahrens zur Voruntersuchung von Flächen für Windenergie auf See in der deutschen ausschließlichen Wirtschaftszone

Das Bundesamt für Seeschifffahrt und Hydrographie (BSH) macht gemäß § 12 Absatz 1 Windenergie-auf-See-Gesetz (WindSeeG) die Einleitung des Verfahrens zur Voruntersuchung von Flächen für Windenergie auf See in der deutschen ausschließlichen Wirtschaftszone bekannt.

Vorzuuntersuchen sind Flächen, die in den Jahren 2022 und 2023 zur Ausschreibung bzw. in 2027 und 2028 zur Inbetriebnahme vorgesehen sind. Nach dem Entwurf des Flächenentwicklungsplans vom 26. Oktober 2018 sind dies die Flächen N-7.2, N-3.5 und N-3.6.

Das BSH führt am

Mittwoch, 20. März 2019 um 09:30 Uhr
in der Handwerkskammer Hamburg Kleiner Saal 303
Holstenwall 12, 20355 Hamburg

einen Anhörungstermin gemäß § 12 Abs. 2 S. 1 WindSeeG durch. In diesem Anhörungstermin werden Gegenstand und Umfang der Maßnahmen zur Voruntersuchung der o.g. Flächen gemäß § 10 Abs. 1 WindSeeG besprochen. Insbesondere wird erörtert werden, in welchem Umfang und Detaillierungsgrad Angaben in den Umweltbericht nach § 40 des Gesetzes über die Umweltverträglichkeitsprüfung (UVPG) aufzunehmen sind. Der Anhörungstermin ist zugleich Besprechung im Sinne des § 39 Abs. 4 S. 2 UVPG. Die Anhörung ist öffentlich. Um Anmeldung wird bis zum 04. März 2019 per E-Mail an die Adresse EingangOdM@bsh.de gebeten.

⋆ *DE. North Sea and Baltic Sea region. BSH. Notifications*

Announcement of the Federal Maritime and Hydrography Agency (BSH) on the initiation of the procedure for offshore site investigation

The Federal Maritime and Hydrography Agency (BSH) announces the initiation of the procedure for the preliminary investigation of sites for offshore wind energy for the German exclusive economic zone in accordance with section 12 para. 1 WindSeeG.

The announced preliminary investigation concerns the areas due for tender in the years 2022 and 2023, respectively due for commissioning in 2027 and 2028. According to the draft site development plan of 26 October 2018 these are the areas N-7.2, N-3.5 and N-3.6.

The BSH issues an invitation for

Wednesday, 20 March 2019, at 09:30 am
in the Handwerkskammer Hamburg Kleiner Saal 303
Holstenwall 12, 20355 Hamburg, Germany

for a hearing pursuant to sec. 12 para. 2 sentence 1 WindSeeG. At this hearing, the subject and scope of the offshore site investigation of the areas according to sec. 10 para. 1 WindSeeG will be discussed. In particular, the extent and level of detail to be included in the environmental report according to sec. 40 para. of the Environmental Impact Assessment Act (UVPG) will be discussed. The hearing will also be the scoping according to sec. 39 para. 4 sentence 2 UVPG. The hearing is open to the public. Please register by 04 March 2019 in writing or by e-mail to the address EingangOdM@bsh.de.

Zur Vorbereitung des Anhörungstermins hat das BSH Informationen zu dem beabsichtigten Gegenstand und Umfang der Voruntersuchungen in einem Beteiligungsdokument zusammengefasst. Dieses Dokument ist auf der Internetseite des BSH unter https://www.bsh.de/DE/THEMEN/Offshore/Flaechenvoruntersuchung/flaechenvoruntersuchung_node.html abrufbar, es liegt zudem während der Öffnungszeiten in der Bibliothek des BSH in Hamburg und Rostock (an den unten angegebenen Adressen) in der Zeit vom 01. Februar bis zum 01. März 2019 aus. Das BSH bittet um Einreichung schriftlicher oder elektronischer Stellungnahmen zu diesem Dokument bis zum 04. März 2019 (unter den unten angegebenen Kontaktdaten).

In preparation for the hearing, the BSH has summarized information on the intended scope of the preliminary investigation in a participation document. This document is available on the BSH's website at https://www.bsh.de/DE/THEMEN/Offshore/Flaechenvoruntersuchung/flaechenvoruntersuchung_node.html (German language only).
It is also available during the opening hours in the library of the BSH in Hamburg and Rostock from 01 February to 01 March 2019. The BSH requests the submission of comments on this document in writing or electronic form by 04 March 2019 (under the contact details given below).

Bundesamt für Seeschifffahrt und Hydrographie (BSH)
O3380
Bernhard-Nocht-Str. 78
20359 Hamburg

EingangOdM@bsh.de

Federal Maritime and Hydrographic Agency (BSH)
O3380
Bernhard-Nocht-Str. 78
20359 Hamburg, Germany

EingangOdM@bsh.de

Bundesamt für Seeschifffahrt und Hydrographie
– Bibliothek –
Bernhard-Nocht-Straße 78
20359 Hamburg

Montag, Mittwoch und Donnerstag:	09:00–15:00 Uhr
Dienstag:	09:00–16:00 Uhr
Freitag:	09:00–14:30 Uhr

und im

Bundesamt für Seeschifffahrt und Hydrographie
– Bibliothek –
Neptunallee 5
18057 Rostock

Montag, Mittwoch und Donnerstag:	08:30–11:30 Uhr und 13:00–15:00 Uhr
Freitag:	08:30–11:30 Uhr und 13:00–14:00 Uhr
Dienstag:	geschlossen

Federal Maritime and Hydrographic Agency
– Library –
Bernhard-Nocht-Straße 78
20359 Hamburg

Monday, Wednesday and Thursday:	*0900–1500*
Tuesday:	*0900–1600*
Friday:	*0900–1430*

and at

Federal Maritime and Hydrographic Agency
– Library –
Neptunallee 5
18057 Rostock

Monday, Wednesday and Thursday:	*0830–1130 and 1300–1500*
Friday:	*0830–1130 and 1300–1400*
Tuesday:	*closed*

Teilnehmende Unternehmen/Verbände/Vereine werden gebeten, ihre Teilnehmerzahl auf zwei Personen zu begrenzen.

Participating organizations are asked to limit their number of participants to two persons.

Durch die Teilnahme am Termin gegebenenfalls entstehende Kosten (Fahrkosten usw.) können nicht erstattet werden.

Costs that are incurred due to participation in the hearing (travel expenses etc.) will not be reimbursed.

Im Auftrag

Carolin Abromeit

Bundesamt für Seeschifffahrt und Hydrographie

For the Federal Maritime and Hydrographic Agency

Carolin Abromeit

(BSH O3/19) 06/19

IMO. Philippinen. Sulu Sea. Ausweisung des Tubbataha Reefs Natural Park als besonders empfindliches Meeresgebiet (PSSA)

Mit der Entschließung MEPC.294(71) wurde im oben genannten Seegebiet ein neues besonders empfindliches Meeresgebiet (PSSA) ausgewiesen und entsprechende Schutzmaßnahmen für das Seegebiet am 1. Januar 2018 in Kraft gesetzt.
Die Entschließung MEPC.294(71) des Marine Environment Protection Committee der IMO ist in der Mitte dieser Ausgabe als englischsprachige Beilage abgedruckt.

IMO. Philippines. Sulu Sea. Designation of the Tubbataha Reefs Natural Park as a Particularly Sensitiv Sea Area (PSSA)

Resolution MEPC.294(71) designated a new Particularly Sensitive Sea Area (PSSA) in the abovementioned sea area and put into effect appropriate protective measures for the sea area on 1 January 2018.

The Resolution MEPC.294(71) of the Marine Environment Protection Committee of the IMO is accompanied as an insert in the centre of this issue.

(BMVI WS 24/19) 06/19

Beilagen/*Enclosures*

DE. BSH. Deckblätter zum Lfv.

DE. BSH. Corrections to the List of Lights

(BSH N2/19) 06/19

IMO. Philippinen. Sulu Sea. Ausweisung des Tubbataha Reefs Natural Park als besonders empfindliches Meeresgebiet (PSSA)

IMO. Philippines. Sulu Sea. Designation of the Tubbataha Reefs Natural Park as a Particularly Sensitiv Sea Area (PSSA)

(BMVI 24/19) 06/19

4001 Lfv. südwestliche Ostsee 2019

208802	**Eric-Warburg-Brücke, NO** Pfahl, rot, mit ⍑ rot	53°53,03' N 010°41,59' E	**Fl.R.4s** 01,00+(03,00)		**R**
					(WSA Lübeck 23/19) 2019-06
208801	**Eric-Warburg-Brücke, NW** Pfahl, grün, mit △ grün	53°53,05' N 010°41,55' E	**Fl(2+1)G.15s** 01,00+(01,00)+ 01,00+(03,00)+ 01,00+(08,00)		**G**
					(WSA Lübeck 23/19) 2019-06
208803	**Eric-Warburg-Brücke, SW** Pfahl, grün, mit △ grün	53°53,02' N 010°41,51' E	**Fl(2+1)G.15s** 01,00+(01,00)+ 01,00+(03,00)+ 01,00+(08,00)		**G**
					(WSA Lübeck 23/19) 2019-06
208804	**Eric-Warburg-Brücke, SO** Pfahl, rot, mit ⍑ rot	53°53,00' N 010°41,55' E	**Fl.R.4s** 01,00+(03,00)		**R**
					(WSA Lübeck 23/19) 2019-06

4003 Lfv. südöstliche Nordsee 2019

307100 *B 1672*	**Süderoogsand** Turm, grau (19 m)	54°26,79' N 008°29,17' E	**Iso.WR.6s**	**18 m**	**W 16 M** 001,0° – 016,0° **R 13 M** 016,0° – 049,0° **W 16 M** 049,0° – 068,0° **R 13 M** 068,0° – 097,0° **W 16 M** 097,0° – 142,0° **W 16 M** 271,0° – 339,0° **R 13 M** 339,0° – 001,0°
					(WSA Tönning 1/19) 2019-06
307180 *B 1624*	**St. Peter** Turm, braun (18 m), schwarze Laterne	54°17,24' N 008°39,13' E	**LFl(2)WR.15s** 02,00+(03,00)+ 02,00+(08,00)	**23 m**	**W 16 M** 052,0° – 080,0° **R 13 M** 080,0° – 091,0° **W 16 M** 091,0° – 120,0° **R 13 M** 280,0° – 282,0° **W 16 M** 282,0° – 334,0° **R 13 M** 334,0° – 052,0°
					(WSA Tönning 4/19) 2019-06

ANNEX 18

RESOLUTION MEPC.294(71)
(adopted on 7 July 2017)

DESIGNATION OF THE TUBBATAHA REEFS NATURAL PARK AS A PARTICULARLY SENSITIVE SEA AREA

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

BEING AWARE of the ecological criteria, in particular the criteria relating to uniqueness or rarity, naturalness, diversity and fragility criteria, and the socio-economic and scientific criteria of the Tubbataha Reefs Natural Park as well as its vulnerability to damage by international shipping activities and the steps taken by the Philippines to address that vulnerability,

NOTING the *Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas* adopted by resolution A.982(24), as amended by resolution MEPC.267(68), (*Revised PSSA Guidelines*), and the *Revised Guidance Document for Submission of PSSA Proposals to IMO* set forth in MEPC.1/Circ.510,

HAVING AGREED that the criteria for the identification and designation of a Particularly Sensitive Sea Area (PSSA) provided in the Revised PSSA Guidelines are fulfilled for the Tubbataha Reefs Natural Park,

HAVING NOTED that the Maritime Safety Committee, at its ninety-eighth session, adopted, pursuant to SOLAS Chapter V, the establishment of an area to be avoided as an Associated Protective Measure for the "Tubbataha Reefs Natural Park Particularly Sensitive Sea Area (PSSA) in the Sulu Sea" (SN.1/Circ.335), aimed at improving the safety of navigation and the protection of the marine environment, and that this routeing measure will be implemented on 1 January 2018 at 0000 hours UTC,

1 DESIGNATES the region surrounding Tubbataha Reefs Natural Park, as described in annex 1 to the present resolution, as a Particularly Sensitive Sea Area;

2 INVITES Member Governments to recognize the ecological, socio-economic and scientific criteria of the Tubbataha Reefs Natural Park area, set forth in annex 2 to the present resolution, as well as its vulnerability to damage by international shipping activities, as described in annex 3 to the present resolution;

3 FURTHER INVITES Member Governments to note the Associated Protective Measure established to address the area's vulnerability, the details of which are contained in annex 4 to the present resolution.

ANNEX 1

DESCRIPTION OF THE TUBBATAHA REEFS NATURAL PARK PARTICULARLY SENSITIVE SEA AREA*

To minimize the risk of damage from ship groundings and pollution damage by international shipping activities and to protect the area's unique and threatened species as well as to preserve as far as practicable its critical habitat and diversity, mariners should exercise extreme care when navigating in the area bounded by the geographical coordinates of the Particularly Sensitive Sea Area, provided below, and adhere to the Associated Protective Measure set out in annex 4.

(1) 09º 17'.75 N, 119º 47'.79 E
(2) 09º 04'.73 N, 120º 12'.76 E
(3) 08º 49'.63 N, 120º 13'.99 E
(4) 08º 29'.63 N, 119º 53'.16 E
(5) 08º 36'.15 N, 119º 35'.46 E
(6) 09º 11'.06 N, 119º 36'.67 E
hence back to point (1).

(Reference charts: Philippine charts No. 4707 (INT 5052), 2nd edition, November 2010; No. 4357, 1st edition, May 2009.

Note: These charts are issued by the National Mapping and Resource Information Authority, Philippines and based on World Geodetic System 1984 datum (WGS 84).)

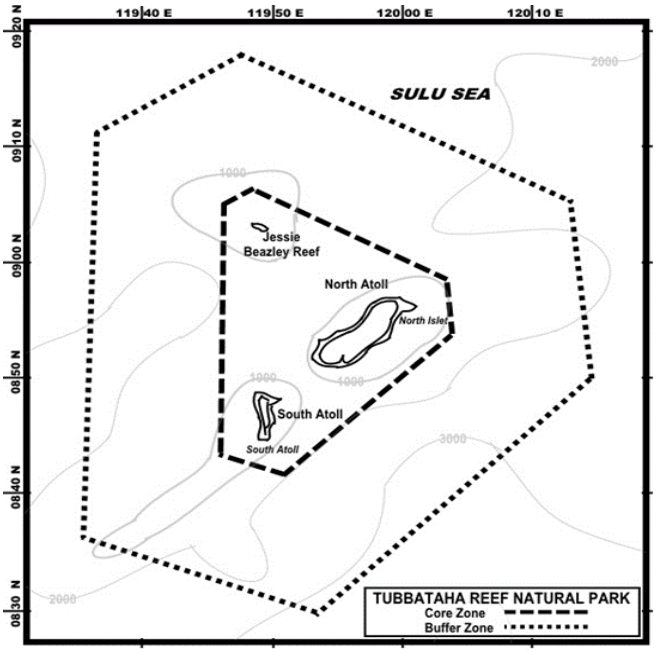

Figure 1 – Chartlet showing the PSSA

ANNEX 2

* The text in this annex is drawn from the Philippines' submission contained in document MEPC 69/10/1. All references used in this resolution are set out in the annex to document MEPC 69/10/1.

ECOLOGICAL AND SOCIO-ECONOMIC CRITERIA OF THE TUBBATAHA NATURAL REEFS PARK PARTICULARLY SENSITIVE SEA AREA*

1 Introduction

1.1 The Tubbataha Reefs Natural Park (TRNP) is comprised of the Tubbataha Reef complex, the Jessie Beazley Reef, and their surrounding waters, enclosed within a Core Zone established under Republic Act No.10067. Established and maintained by the Philippine Government since 1988, the TRNP presently encompasses an area comprised of a 97,030 hectare "Core Zone" and a 350,000 hectare "Buffer Zone" surrounding it. It is approximately 80 NM southeast of Puerto Princesa City, the capital of the Philippine island province of Palawan. In 1993, it was inscribed as a World Heritage Site. The TRNP was also inscribed in the Ramsar List of Wetlands of International Importance in 1999. Since 2009 the Park has been designated as a national MPA through Republic Act 10067, which establishes a 10 NM Buffer Zone around the perimeter of the Core Zone of the TRNP, see figure 1 below.

1.2 The Tubbataha Reef complex is comprised of the North and South Atolls. The North Atoll is a large oblong-shaped reef platform 2 km wide and enclosing a sandy lagoon some 24 m deep. The seaward face of the reef is comprised of steep and often perpendicular walls extending to a depth of 40 to 50 m. The South Atoll is a small triangular reef up to approximately 1 NM wide. It also consists of a shallow platform enclosing a sandy lagoon. The North and South Atolls are separated by a 5 NM channel. Each atoll has an islet associated with it: the Bird Islet in the North Atoll and the South Islet in the South Atoll. Bird Islet serves as an internationally significant nesting site for birds and marine turtles. South Islet is a coralline-sand cay of approximately 800 square metres, and is also used as a nesting site. Jessie Beazley Reef is 13 NM north of the two atolls. It extends some 640 m in a north-westerly direction, and is approximately 137 m wide. A small hill of broken coral stands at the centre of the reef about 1.8 m high devoid of vegetation. At low water, the reef bares over a considerable area. A small number of birds will sometimes land on the bare parts of the reef. A white sand cay is readily visible by day from a distance of 3 to 5 NM.

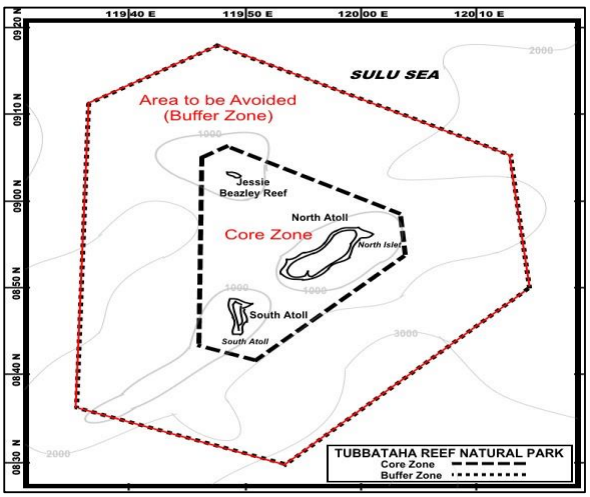

Figure 1 – Map highlighting the 10 NM Buffer Zone around the TRNP
The Reef Ecosystem in the TRNP

* The text in this annex is drawn from the Philippines' submission contained in document MEPC 69/10/1. All references used in this resolution are set out in the annex to document MEPC 69/10/1.

1.3 Atolls like those in the Tubbataha Reef complex are formed when living corals colonize the edges of seamounts or volcanoes. As the volcano gradually sinks underwater, corals reaching for sunlight grow upward toward the sea surface, building on top of thick layers of coral reefs. The Park thus includes extensive reef flats and perpendicular walls reaching over 100 m depth, as well as large areas of deep sea.

1.4 The TRNP's North and South Atolls each have two principal but very different habitats: (1) the outer reef slopes, and (2) the lagoon. The outer reef slopes have very clear water, strong wave action and currents, high oxygen and low nutrient contents, and a very wide depth range from about 1 m to over 40 m. The lagoons have turbid water, little wave action or currents, lower oxygen and higher nutrient content, higher temperatures than surrounding waters, and a much more restricted depth range of from less than 1 to 25 m. The outer reef slopes have much greater coral diversity than the lagoon, and consequently much higher values in terms of biodiversity, biological productivity, and tourism potential.

1.5 The TRNP is universally important because it is one of the world's few remaining examples of a highly diverse near-pristine coral reef. It is located within the Coral Triangle (figure 2), the centre of global coral biological diversity that is also a region of high fishing pressure. The TRNP is an important source of fish, coral, and decapod larvae that enrich fisheries in the greater Sulu Sea area, including the surrounding Philippine islands and their coastal waters. Its huge assemblages of fish and corals attract scuba divers from around the world and provide opportunity for tourism. It is also a living laboratory with an enormous potential to contribute to educational and scientific advancement. These factors make the protection of the TRNP more critical to science and the regional economy.

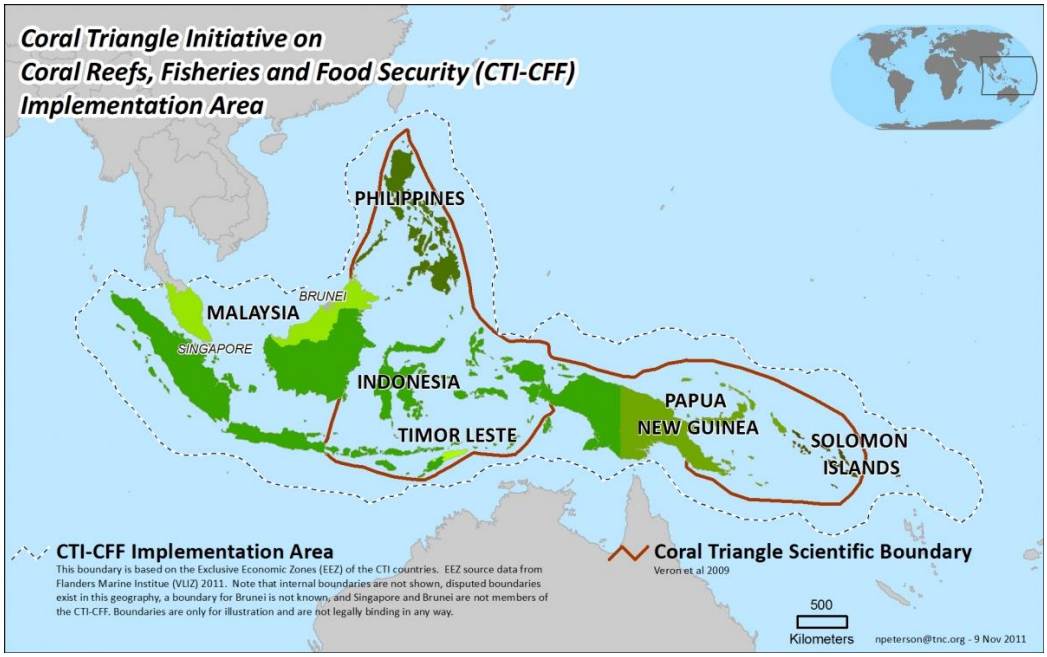

Figure 2: Map of the Coral Triangle

General

1.6 As a marine protected area with coral reefs, small islets, and large sea spaces, the TRNP simultaneously evinces multiple criteria for PSSA designation. This part indicates the presence of all these criteria within the Park's boundaries. As a general rule, the ecological, socio-economic, and scientific values apply across the entire TRNP, especially with respect to marine life, habitat, and human uses. Certain values related to its terrestrial components are naturally localized and concentrated, but overall, the pristine conditions of their surrounding waters and the entire Park also ensure sustainability of the environmental conditions that make such localized areas viable. The various criteria for PSSA designation are as acutely intertwined as are the various components of the TRNP ecosystem.

2 Ecological criteria

Uniqueness or rarity

2.1 TRNP is one of the last few remaining examples in the world of a highly diverse, near-pristine coral reef complex in an offshore area located far from human settlements. The great distance from population centres and separation by deep waters from inhabited landmasses have protected TRNP's reefs from degradation and destruction due to over-exploitation associated with many other near-shore reef systems in the Philippines (UNESCO 2008; UNESCO 1992). TRNP is the largest and only atoll reef complex enclosed within the Philippine archipelago. Its high levels of biodiversity and abundant biological productivity are unmatched by any other coral reef in the country (Alino et al. 2002). It stands out as the most intact and diverse of all of the marine reserves in the Philippines (IUCN 2009; UNESCO 1992; Arquiza 1990). It has been referred to as the "crown jewel" of Philippine marine protected areas and biodiversity conservation priorities (UNESCO 2013). It is also the only purely offshore or marine World Heritage Site in Southeast Asia today (Aquino et al. 2011).

Critical habitat

2.2 The entire TRNP is home to significant populations of critical endangered species of marine flora and fauna. It hosts considerable assemblages of marine life equal to, if not surpassing, coral reef sites of the same size around the world. It contains 401 out of 461 species of hard corals (zooxanthellatescieractinians) found in the Philippine waters (TMO 2003). More than 600 species of fish have been compiled from various fish surveys in the TRNP, which include protected species of fish such as the Humphead Wrasse (Cheilinus undulates) (TMO 2015). Endangered species of mollusks like the Topshells (Trachusniloticus), Clams (Tridacna sp.), Tridacnid clams such as crocus clam (Tridacnacrosea), giant clam (T. gigas), scaly clam (T. squamosal), and horse's hoof clam (Hipopushippopus) are found in some parts of the lagoons (Dolorosa 2010; Ledesma et al. 2008; UNESCO 1992). Significant numbers of critically endangered marine turtles are found and have their nesting/breeding grounds in the TRNP. Two species of the highly endangered marine turtles, the Green Sea Turtle (Cheloniamydas) and the Hawksbill Turtle (Eretmachelysimbricata), nest in the islets and use the Park as a developmental stage habitat (Cruz and Torres 2005). Thirteen species of cetaceans (dolphins and whales) and twelve species of sharks have been identified as Park inhabitants. Marine scientists have established that the Sulu Sea is part of the migratory range of the endangered whaleshark (Rhincodontypus) (Eckert et al. 2002). TRNP also supports the highest population densities known to date for white-tip reef sharks (Triaenodonobesus) (Walker & Palomar-Abesamis, 2005). Sightings of white-tip sharks, black-tip sharks (Carcharinusmelanopterus), and eagle rays are common (IUCN 2009).

2.3 TRNP is one of the few diverse strongholds or rookeries of seabirds in the Philippines and Southeast Asia. (Jensen 2009) Its remoteness and protected status make it critical to the continued existence of seabirds in the Philippines. A total of 109 species of birds, both resident and migrant, have been recorded on the islets and cay of the Park. These include species like the brown boobies (Sula leucogaster), red-footed boobies (Sula sula), sooty tern (Onychoprionfuscatus) and crested tern (Thalasseusbergii), as well as the Philippine sub-species of Black Noddy (Anousminutusworcestri), found nowhere else in the world (Aquino et al. 2011). TRNP is the last known major breeding place of the Black Noddy (Anousminutusworcestri). It is also one of only four remaining breeding areas for the Sooty Tern (Fuscatanubilosa), the other three being North Borneo, the Paracel Islands, and Layang-layang Island in Malaysia. It is also the last known breeding area for the Masked Booby (Sula dactylatrapersonata) (Jensen 2009; Heegard and Jensen 1992; Wells 1991). Eight species of seabirds have been observed to have resided and bred in the Tubbataha Reef islets. Most of these seabirds have disappeared from their natural roosts in the Sulu Sea and other parts of the Philippines; they can be found only in the Park (Jensen 2009).

Dependency

2.4 Coral reefs comprise less than 1% of the Earth's surface and less than 2% of the ocean bottom. Despite this scarcity, they support a quarter of all species found in the ocean (SMNH 2013). Hence, as a general rule, many forms of marine life are directly dependent on the existence of coral reef systems. It may be surmised that such systems would be very important for life in semi-enclosed sea areas like the Sulu Sea. The TRNP plays a fundamental role in the process of reproduction, dispersal and colonization of marine life in the Sulu Sea (Campos et al. 2008). The northeast monsoon encourages the transport of larvae towards the Balabac Strait and the opposite monsoon winds transport larvae towards the southwest, to the Cagayancillo Islands and beyond. Internal wave patterns have been observed moving in a westerly direction, towards the eastern coast of Puerto Princesa City, Palawan, and vice versa to the Cagayan de Sulu area, bringing with it marine larvae that enhances fisheries productivity in these localities (Villanoy et al. 2003). One of the very few coral formations in the middle of the Sulu Sea, TRNP functions as a natural fish aggregating area that attracts, sustains, and disperses various marine organisms that depend on the reef's general overall health for their survival. (Campos et al. 2008) As such it performs a major natural role in support of marine biological productivity and sustainability of fisheries in and around the Sulu Sea. TRNP plays a vital role in the stocking of fisheries in the Sulu Sea and adjacent Philippine waters, thus producing much of the region's wealth of fisheries. Oceanographic studies (Villanoy et al. 2003) and larval dispersal investigations (Campos et al. 2008) demonstrate that ocean currents in the Sulu Sea support the distribution of fish, corals, and decapod larvae to the surrounding islands. The Sulu Sea, of which TRNP is part, is also critical to the emigration of commercially important fish species from reserves like Tubbataha Reef to adjacent areas (DeVantier et al. 2004).

2.5 Aside from the six resident species of seabirds on the islets, TRNP is regularly visited by the Christmas Island Frigate (Fregata Andrewsi), a critically-endangered species of which less than 3000 individuals are believed to exist in the world. This foreign species likewise benefits from the protection of TRNP since the Park forms part of its range (Jensen 2009).

2.6 TRNP is one of the elements of the Tri-national Sea Turtle Network of Protected Areas in the Sulu-Sulawesi Marine Ecoregion (MRF 2008). This MPA contributes the largest no-take area in the Philippines' total marine no-take areas (Weeks et al. 2009).

Representativeness

2.7 TRNP contains excellent examples of pristine and near-pristine reefs with a high density of marine life, a spectacular 100 m perpendicular wall, an almost undisturbed reef crest and reef edge, extensive lagoons with seagrass beds and coral beds, and two coral islands (UNESCO 2015a; UNESCO 1992). The Tubbataha Reefs complex is among the best-documented examples of diverse and concentrated coral atoll systems in Southeast Asia (UNESCO 1994; White 1991). This is among the reasons why TRNP is part of the Palawan Biosphere Reserve, one of two biosphere reserves designated in 1990 under the UNESCO Man and Biosphere Programme (UNESCO 2015b). It is also the largest MPA in the Philippines, and its Core Zone represents 65% of the most highly protected waters of the country (Ong et al. 2002).

Diversity

2.8 The reef complex contains a diverse coral assemblage, with species representing 80 of the 111 coral genera found worldwide. There are endemic coral species found only in the lagoons, most notable of which are 30 species previously unreported in the Philippines (Fenner 2001). TRNP contains 374 species of corals representing almost 90% of all species in the Philippines and about 80% of all coral species in the Sulu-Sulawesi Seas (UNESCO 2015a; TPAMB 2014). Several distinct physiographic zones are discerned on the reefs. The deep stretches of the steep drop-off show foliose or plate-like forms of Pachyseries, Leptoseris, and Montipora at 20-30 m depth. At 12-20 m depth, massive Diploastrea, Platygyra and Porites are found. The reef edge is an Acropora zone with branching Montipora, Pocillopora, Porites, and some faviids, and extends to a reef slope of similar composition. The reef flats consist mainly of A. hyacinthus, Pocillopora, Millepora, and some faviids. Porites "micro-atolls" and branched Porites characterize the back-reef areas (UNESCO 1992).

2.9 A very high diversity of fish species has been recorded with 600 species in at least 40 families. Among the reasons cited by UNESCO for inscription of TRNP as a World Heritage Site was the exceptional diversity of corals and fish, particularly pelagic fish species such as jacks, tuna, barracuda, and sharks (UNESCO 1992). Forty-five species of benthic macroalgae and four species of microalgae are found, and extensive seagrass beds grow in the shallower parts of the lagoon. The four dominant species are Thalassiahemprichii, Halophiliaovalis, Haloduleuninervis, and H. Pinifolia (UNESCO 1992).

Productivity

2.10 Fish biomass in TRNP is estimated to be as much as 200 metric tons per square kilometre in the last decade, the highest in the country. It is far higher than the average biomass of healthy reefs elsewhere in the Philippines, which is estimated to be from 35-40 metric tons per square kilometre (TMO 2014). The very high fish biomass estimates in TRNP translates to more larvae that serve to seed degraded fishing grounds surrounding the Sulu Sea. The productivity of TRNP therefore is linked to the productivity of the Sulu Sea and surrounding waters.

Spawning or breeding grounds

2.11 TRNP is a major source and sink of larvae in the Sulu Sea. Larval dispersal simulations show that within a 12-month period, TRNP broadcasts larvae into most of the fishing areas in the Sulu Sea (Campos et al. 2008). As stated above, various threatened or critically endangered species such as marine turtles, seabirds, sharks, and molluscs also spawn or breed within the TRNP.

Naturalness

2.12 Marine life in TRNP thrives on account of its being relatively undisturbed for hundreds of years, due to its remote location and inaccessibility. Weather conditions limit access to the Park, so that tourism activities can be controlled and conducted only three months every year, from mid-March to mid-June. The Park is otherwise left in its natural condition for the rest of the year, and is free from human habitation except for the 8-12 Park Rangers in residence in a centrally located ranger station that stands watch over the MPA. The remote and undisturbed character of the TRNP and the continued presence of large marine fauna such as tiger sharks, cetaceans and marine turtles, large schools of pelagic fish such as barracuda and trevallies add to the ecological and aesthetic qualities of the TRNP (UNESCO 1992). For this reason, The UNESCO designated the TRNP as a World Heritage Site in 1993. It is the first such site in the Philippines, having been approved for inscription for satisfying three of the four criteria for World Heritage Sites. The criteria included the fact that TRNP contained "superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance," "outstanding examples representing significant ongoing ecological and biological processes in the evolution and development of terrestrial, freshwater, coastal and marine ecosystems and communities of plants and animals," and "most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation" (UNESCO 2008; UNESCO 1992).

Integrity

2.13 The TRNP comprises the North and South Atolls and the Jessie Beazley Reef. It includes open sea areas with an average depth of 750 m and contains a well-preserved marine ecosystem with top predators, a large number and diversity of coral, as well as pelagic and demersal fish species. It is of sufficient size to maintain associated biological and ecological processes; this also ensures the complete representation of the key features and processes of the reef ecosystems within it. The low level of fishing pressure, due to the no-take policy in place throughout the park, is key to maintaining its integrity. However, maintenance of ecosystem values within the TRNP requires measures to be taken outside the TRNP boundaries, in relation to some migratory species and to create a buffer from threats to the marine environment that could occur in the wider area.

2.14 Compared with other Philippine reefs, the corals of TRNP have recovered well from the bleaching events, the most serious of which took place in 1998 resulting in 21% loss of coral cover. The reefs recovered faster than in locations where human activity was intense. Scientists suspect the protected status of the reefs allows it to better recover from one stress because they do not have to deal with other stresses such as pollution and fishing (Francisco et al. 2008). The corals' resilience is a sign that TRNP has been able to maintain its integrity despite the onset of environmental stressors. Well-connected reef systems usually take 10 to 20 years to fully re-establish after a massive disturbance (Fabricius et al. 2007).

Fragility

2.15 Coral reefs like those in the TRNP are fragile ecosystems to begin with; they require a delicate balance of environmental conditions to survive and thrive. The existence of a coral ecosystem may be threatened by changes to even one of those environmental conditions. Corals grow very slowly, with the fastest growing species expanding by more than 6 inches (15 cm) per year. Most corals grow less than an inch per year (SMNH 2013). This slow growth contributes to the vulnerability of the reefs to natural and man-made damage or disaster. Thus, even brief changes in water quality (e.g. turbidity, salinity, acidity) could threaten the very survival of coral reefs. For this reason, corals are considered a threatened species.

The health of most reefs across the region is in decline as a result of human exploitation (CRA 2014). It has been suggested that one third of reef-building coral species are under elevated threat of extinction due to human impacts and climate change (Carpenter et al. 2008). Shipping activities may generate low-level but constant impacts that accumulate over time, such as operational pollution, as well as introduce risks of occasional or accidental impacts such as large oil or chemical spills that may be relatively brief but potentially catastrophic.

2.16 Climate change impacts increase the vulnerability of coral reefs to degradation. It negatively affects sea surface temperatures, which are suspected to be the cause of "coral bleaching" where live coral in the sea die prematurely, leaving white coral reef skeletons. Extreme environmental conditions such as warmer-than-usual waters, combined with man-made accidental pollution events, could push coral reefs beyond the limits of their biological resilience and result in their destruction in a short period of time. As demonstrated by the coral bleaching event in 1998 resulting in 21% loss of coral cover, TRNP is already close to the limits of its ability to recover from natural stresses. Coincidence with human-induced stresses arising from shipping activities is thus a major risk at present.

Bio-geographic importance

2.17 TRNP is located at the apex of the Coral Triangle, the richest biogeographic region in the world, home to the highest concentration of marine species on the planet. The Coral Triangle, often called "the Amazon of the Seas", is home to 600 corals or 76% of the world's known coral species. It contains the highest reef fish diversity with 2,500 or 37% of the world's reef fish (CTI 2015). As a result, TRNP is considered to be "extremely high" on the list of marine conservation priority areas of the final report of the Philippine Biodiversity Conservation Priorities Project implemented by the government with foreign development assistance to support the long-term planning and rationalization of Philippine environmental conservation efforts. It is also ranked as "very high" on the list of conservation priority areas for birds, reef fishes, corals, molluscs, seagrass, elasmobranches, and turtles (Ong et al. 2002). The convergence of the ranges of multiple terrestrial, marine, and aerial species (as noted above) within the Park make it an ideal and strategic location for environmental conservation and protection, with expected associated impacts extending not only to other areas of the Philippine archipelago but to the rest of the Southeast Asian region as well.

3 Social, cultural and economic criteria

Social or economic dependency

3.1 The TRNP makes direct contributions to the national and local economy through tourism revenues generated from scuba divers, and has been ranked as the eighth best diving destination worldwide (CNN 2012). Indirect contributions are derived to the fisheries by functioning as a habitat and source of larvae. The total economic value of TRNP based on tourism revenues and larvae contributions for fisheries is estimated at over $6 million annually, while values derived from non-use or simply serving as a protected habitat has been estimated at $2.5 to 4.8 million (Subade 2007).

Human dependency

3.2 The TRNP is a key source of coral and fish larvae, seeding the greater Sulu Sea. It has a decisive role in sustaining the fisheries in surrounding areas, directly providing food and livelihood for hundreds of thousands of Filipinos (Campos et al. 2008). The Philippines has nearly 2 million people who are dependent on fisheries for their livelihood (BFAR 2012). This relatively small ecological contribution translates into more substantial benefits for the human population. The TRNP is a source of fish larvae whose benefits extend beyond its

borders, and is the source of municipal/artisanal fishers and commercial fishers in areas outside the Park (Campos et al. 2008). Larvae dispersal to the surrounding area is estimated to be worth almost $3 million (Subade 2007). The inhabitants of the isolated island Municipality of Cagayancillo are directly dependent on fishing in their municipal waters, which are in turn dependent on the productivity of the TRNP. Cagayanon fishermen once reported that fish catch in their waters doubled in the three years since the establishment of the no-take policy of the TRNP, indicating that management of the fisheries in the Park area benefits neighbouring areas as well (UNESCO 2008; Cola 2008).

3.3 On a larger scale, strong wind variations from the Mindoro Strait, Balabac Strait, and Sulu archipelago create upwelling and downwelling events that affect primary productivity and the concentration or distribution of fish and other marine life. The predominantly westward movement of ocean currents in the Sulu Sea transport fish eggs and larvae to the eastern coast of Palawan; this ensures the sustainability of fisheries in mainland Palawan (Villanoy et al. 2003).

Cultural heritage

3.4 On account of its remoteness and extremely limited land area, the Park does not contain significant historical and/or archaeological sites. The few shipwreck sites located within the Park boundaries to date serve only as dive sites, and have not been the subject of marine historical or archaeological studies.

4 Scientific and education criteria

Research

4.1 Scientists, especially biologists, oceanographers and geologists have been fascinated by the manner of reef formation in the Sulu Sea and by its high biodiversity in terms of species numbers and habitat types. They consider these reefs to be prime research and experimental sites because they are associated either with emergent islands or islets, or with submerged structures. The TRNP's unique position in the middle of the sea and interactions between the atolls and surrounding marine ecosystem make it an ideal laboratory for the study of ecological and biological processes, in particular larval dissemination and fish recruitment. The TRNP offers marine researchers an opportunity to discover and study the biology and ecology of marine ecosystems at various spatial scales. Subjects for study could vary from minute plankton to the large marine mammals and apex species (TMO 2015). Scientific interest in the Tubbataha Reef complex has been increasing. During the 1980s, only five commissioned studies were conducted in the area, starting in 1982. In the following decade there were ten. Between 2000 and 2006, the number of studies had increased to 25 (Conservation International, 2006). At present, 31 studies are available online directly from the Tubbataha Management Office (TMO 2015b); these do not include many others published in scientific journals and in print.

Baseline for monitoring studies

4.2 Corals support numerous reef inhabitants and are thereby considered to be a key measure of reef habitat quality and quantity (Bruno and Selig 2007). Being separated from land by deep water, TRNP is relatively free from land-based sources of pollution and as such forms a unique area for scientific study and comparison with other areas in the Coral Triangle.

Education

4.3 TRNP is a living laboratory for the study of marine ecological processes and climate change adaptation. As part of the Palawan Biosphere Reserve of the UNESCO Man and Biosphere Programme, TRNP is considered a "Science for Sustainability support site," or a special place for testing interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems. Each reserve promotes solutions to reconcile biodiversity conservation with sustainable use (UNESCO 2015b).

ANNEX 3

VULNERABILITY TO DAMAGE BY INTERNATIONAL SHIPPING ACTIVITIES*

1 Vessel traffic characteristics

Operational factors

1.1 The vicinity of TRNP is regularly visited by passenger boats carrying scuba divers into the Park and fishing vessels conducting fishing operations outside the Core Zone. Passenger boats voyaging into the TRNP are strictly regulated by the Tubbataha Management Office and must call on the ranger station before proceeding to the designated dive sites (TMO 2008). Such boats are usually smaller kinds of boats and yachts. On the other hand, fishing vessels are often wooden vessels domestically registered, operating from other parts of the country. Management of the TRNP for the most part has effectively kept domestic fishing activity out of the Core Zone, which is designated as a "no-take" area. Fishing operations take place mainly in the Buffer Zone (TPAMB 2014). Both commercial fishers and small-scale Filipino fishers use fish aggregating devices called payao to attract valuable pelagic fish (TPAMB 2014). These types of fish aggregating devices normally involve buoys or floats with clusters of material, floating just beneath the sea surface, and anchored to the seabed with rope or chain. They may pose navigational hazards due to the possibility of entanglement with propellers of passing ships if they are run over. In addition, foreign poachers engaged in illegal fishing have often been found, and boats of local fishers collecting valuable topshells have been seen entering the Park at night (TPAMB 2014). Given the illegality of their activity, poachers surreptitiously entering, operating in, or exiting the Park area may pose collision hazards.

1.2 There has been only one instance to date where the Philippine Government issued a petroleum exploration contract with an area that included parts of the TRNP. This contract has not been implemented as of the time of this application, and the TPAMB has requested the Department of Energy to exclude the area of the TRNP from the said contract (TPAMB 2014).

Vessel types

1.3 Satellite AIS-based data, procured via NORAD and analysed and processed by the Australian Maritime Safety Authority, for the 12-month period from October 2012 to September 2013 show numerous and varied ships passing the TRNP at varied distances. Cargo ships constitute the absolute majority (approx. 70%) of such vessels, followed by tankers (approx. 10%) and other types of ships (approx. 18%). These do not include ships not equipped by AIS, particularly numerous smaller domestic vessels. Available data indicate that at minimum, total vessel traffic passing in proximity of the TRNP Core Zone may be categorized in table 1.

* The text in this annex is drawn from the Philippines' submission contained in document MEPC 69/10/1. All references used in this resolution are set out in the annex to document MEPC 69/10/1.

	Distance from TRNP Core Zone			
Type	**20 NM**	**30 NM**	**40 NM**	**50 NM**
Cargo	2,225	2,645	2,922	3,152
Fishing	1	1	1	1
Passenger	6	6	10	11
Tanker	288	349	397	442
Other	591	709	778	845
TOTAL	3,111	3,710	4,108	4,451

Table 1: Total number and types of ships that passed within certain distances from the TRNP Core Zone between October 2012 and September 2013

Traffic characteristics

1.4 TRNP lies at the intersection of north-south and east-west shipping routes that traverse the Sulu Sea, connecting the South China Sea to the Celebes Sea and to the Pacific Ocean respectively. At least 4,451 AIS-equipped vessels passed within 50 NM around the TRNP, the majority (some 75%) along the north-south route that connects Northeast Asia with Oceania. Traffic passing along the North-South route is described below likewise in terms of distance from the TRNP Core Zone, set out in table 2, below.

	Distance from TRNP Core Zone			
Type	**20 NM**	**30 NM**	**40 NM**	**50 NM**
Cargo	2,100	2,470	2,715	2,882
Fishing	1	1	1	1
Passenger	4	4	7	8
Tanker	198	237	270	291
Other	524	625	689	735
TOTAL	2,827	3,337	3,682	3,917

Table 2: Number and types of ships that passed within certain distances from the TRNP Core Zone, along the North-South routes, between October 2012 and September 2013

1.5 North of the Sulu Sea, ships passing along the North-South route pass into/out of the area through the Mindoro and Tablas Passages astride the Philippine island Province of Mindoro, converging/diverging east of the TRNP (refer to figure 1, below). A significant proportion pass within 10 NM of the Core Zone, i.e. through the TRNP Buffer Zone. This is consistent with actual observations using partial radar coverage from the TRNP ranger station, which has recorded multiple transits of vessels within the Buffer Zone between 2010-2013. These ships then pass out/into the area via the Sibutu Passage.

1.6 International maritime traffic through the Sulu Sea on this route likely connect major ports in the Philippine island of Luzon (e.g. Manila, Batangas) and Northeast Asia with ports in Indonesia, Papua New Guinea and Australia.

1.7 Traffic passing along the East-West route is distributed as follows, likewise in terms of distance from the TRNP Core Zone – refer to table 3, below.

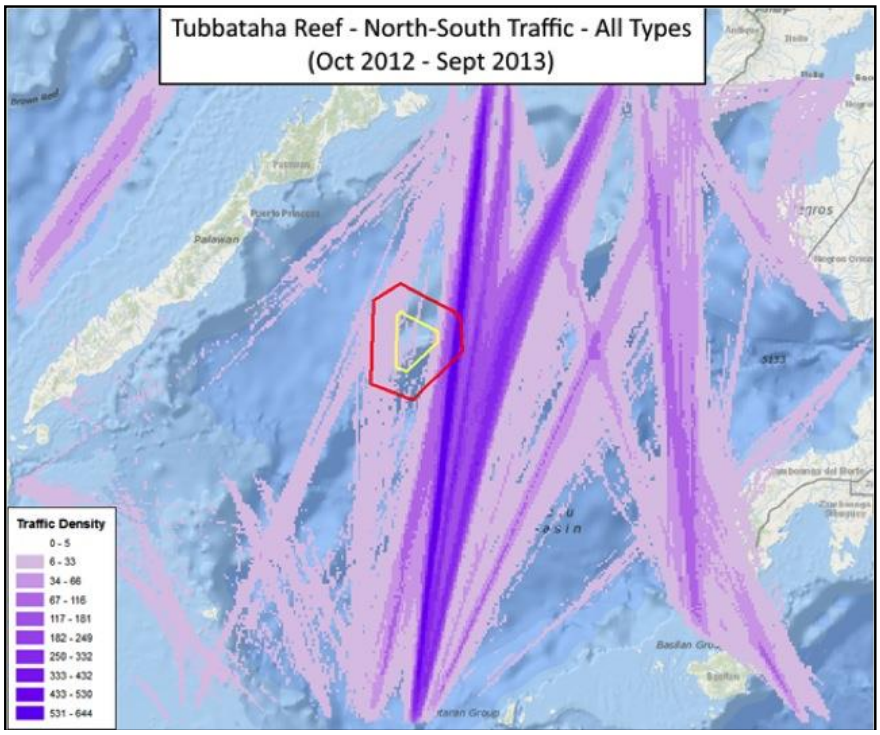

Figure 1: Traffic density plot of ships travelling along North-South routes near the TRNP

	Distance from TRNP Core Zone			
Type	**20 NM**	**30 NM**	**40 NM**	**50 NM**
Cargo	178	265	350	490
Fishing	0	0	0	0
Passenger	4	4	7	7
Tanker	105	138	167	208
Other	97	130	150	192
TOTAL	384	537	674	897

Table 3: Number and types of ships passing within certain distances from the TRNP Core Zone, along the East-West routes, between October 2012 and September 2013

1.8 Ships passing along the East-West route enter/exit the Sulu Sea through the Balabac Strait; those that traverse through the Bohol Sea are brought in proximity of the southern portion of the TRNP (see figure 2). Compared with ships on the North-South route, less numbers of vessels cross into the Buffer Zone around the TRNP.

1.9 International maritime traffic through the Sulu Sea on this East-West route likely call on major Philippine ports of Cebu and Iloilo from other ports in the Far East. The proportion of vessels that continue on through the archipelago and out by the Surigao Strait from this area is significantly less.

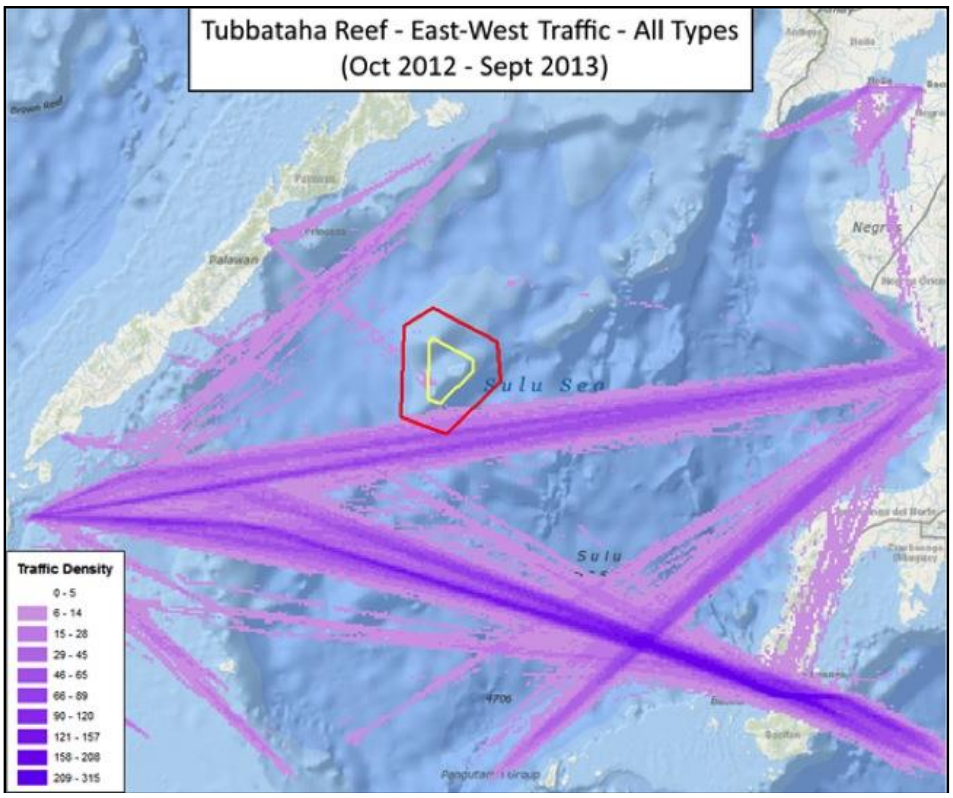

Figure 2: Traffic density plot of ships travelling along the East-West route near the TRNP

Harmful substances carried

1.10 The significant proportion of chemical and oil tankers passing within 10 NM of the TRNP Core Zone is a cause for concern. A closer examination of the AIS data show that shipping routes running through the east and west of the Park bring vessels in closest proximity to the TRNP Core Zone. Data indicates that the major route is to the east, with more than 774 vessels passing along a north-south route within 7.5 NM of the Park. This included 89 chemical tankers (11.49%) and 185 oil tankers (23.9%). Several thousand vessels pass annually along this north-south route further offshore. To the west of the Park, some 165 vessels including 31 chemical tankers (18.7%) and 46 oil tankers (27.9%) travelled within 9 NM of the Park along another north-south route.

1.11 The threat of oil and chemical pollution and potential catastrophic impact on coral reefs is well known. With oil and chemical tankers passing so close to the TRNP, there is a significant risk of accidental spills and even grounding on the reefs. Notably, the two successive ship-grounding incidents that took place in 2013 (the **USS Guardian** in January and the **Min Ying Pu** in March) were both travelling along north-south routes.

2 Natural factors

Hydrographical

2.1 The TRNP is located in a region of the Sulu Sea of varied depth ranging from 1,490 to 2,769 m. Charts indicate that the Tubbataha Reefs rise above these deep waters abruptly,

forming separate underwater pinnacles topped off by coral reef structures. Depths can change radically, from 1,000 m to less than one metre within a distance of only one nautical mile around the reefs. This steeply rising slope contributes significantly to the risk of grounding for vessels in the area. The reefs provide little protection from strong winds and surface currents.

2.2 Hydrographic information from the Philippine Coast Pilot Guide (NAMRIA 1995) describes all reefs within the TRNP in very clear terms as inherent dangers to navigation:

> "The North and South Atoll of Tubbataha Reefs are considered to be dangerous reefs separated by a deep channel about 5 miles wide.
>
> The North Atoll is oblong in shape and encloses a lagoon 2 miles wide and 5 miles long, with depths of 7.3 to 32.9 m at mud bottom. There are no passages through the barrier reef into the lagoon; only small launches can cross the barrier reef at high tide. Deep water is close to the outer edge of the reefs, and no anchorages are available. North Islet, Central Islet, and a number of small black rocks are the only objects that appear above high water. At low water, a large number of detached sand cays or ridges, each about 91 m long and 9 to 18 m, can be seen along the entire length of the reef. North Islet is covered with gravel and some guano.
>
> The South Atoll is about 4.5 miles long North and South with several black rocks and sand cays visible at high water.
>
> South Islet is made up of loose, white sand about 1.5 m above high water, and is protected by riprap. The 39.6 m cylindrical, steel-framed tower which used to be a lighthouse on this islet is very prominent.
>
> Jessie Beazley Reef, about 18 miles north of Tubbataha Reef Light, extends about 640 m in a north-westerly direction and is about 137 m wide. At the centre of the reef is a small hill of broken coral about 1.8 m high, devoid of vegetation. At low water, the reef bares over a considerable area. Birds can sometimes land on the bare parts of this reef. White sand cay is readily visible by day at a distance of 3 to 5 miles."

Meteorological

2.3 The Sulu Sea within which the TRNP is situated is a deep sea in the Southeast Asian region located along the south western quadrant of the Philippines. It is bounded by Palawan Island on the west, Mindoro Island to the north, Panay Island and Mindanao Island to the east, the Sulu Archipelago to the southeast, and Borneo to the southwest. Weather and climate is strongly influenced by the East Asian Monsoons and the seasonal migrations of the Inter-tropical Convergence Zone (ITCZ) and the El Nino Southern Oscillation (ENSO). A north-easterly wind prevails in winter and a south-westerly wind prevails in summer, but otherwise it is very variable during the transitional periods (Oppo et al. 2003; Latiff et al. 2014). Sudden heavy rainfalls are known to occur appear within the Sulu Sea region, posing hazards to shipping (Butt and Johnson, 2013).

2.4 Rough seas are present from July to October and November to March. Rainfall is highest in the Sulu Sea from May through November. From June through September, the ITCZ rainfall merges with the East Asian Monsoon. By October and November, the East Asian summer monsoon rains are over, and the dry season starts in the northern SCS but reaches its seasonal maximum in the southern SCS due to the southward position of the ITCZ (Oppo et al. 2003). The Philippines, including the Sulu Sea, is also located within the tropical "typhoon belt" regularly traversed by typhoons. On average, about 20 tropical cyclones develop within the Philippine Area of Responsibility each year, of which around half make

landfall (PAGASA 2009). These disturbances periodically aggravate weather and sea conditions in the Sulu Sea, thus sudden violent storms, heavy rainfall, and strong winds increase the risk of navigational incidents.

Oceanographic

2.5 The Sulu Sea is a semi-enclosed basin connected to surrounding seas over shallow sills. It is surrounded by major landmasses such as Palawan, Borneo, Mindanao, Panay, Antique, and Mindoro, as well as connecting several bodies of Philippine waters such as the Linapacan and Balabac Straits, the Sibuti Passage, Moro Gulf, Dipolog Strait, Bohol Sea, Panay Gulf, and Mindoro Passage. The Mindoro Passage to the north/northwest is the deepest passage at 420 m, connecting the Sulu Sea to the South China Sea, and with the Java Sea across the shallow Sunda Shelf. The Sibutu Passage to the south is the next deepest passage, connecting the Sulu Sea to the Sulawesi Sea (Oppo et al. 2003). The TRNP lies between these two passages, which also form the entry/exit points for North-South routes traversing the Sulu Sea. Water circulation patterns in the Sulu Sea show that there is an inflow from the South China Sea at the Mindoro and Balabac Straits, and an outflow into the Sulawesi Sea at the Sibutu Passage. There is a cyclonic circulation in the southern basin (Han et al. 2009). A strong current forms in the northeast Sulu Sea where currents from the Mindoro and Tablas straits converge. These converging currents are also entry/exit points for North-South shipping routes. Surface current speeds have been measured to be as much as 100 cm/sec (Han et al. 2009).

2.6 Strong westward currents in the Bohol Sea carry the surface water of the western Pacific from the Surigao Strait into the Sulu Sea via the Dipolog straits. In the Sibuyan Sea, currents flow west which carry the surface water from the Western Pacific near the San Bernardino Strait into the Sulu Sea via the Tablas Strait (Han et al., 2009). Surface currents exhibit strong variations or reversals from winter to summer, with the TRNP forming a centre around which the currents circulate. Generally, during the South West Monsoon, waters flow in a clockwise motion around the TRNP, driven by currents from the Dipolog and Linapacan Straits (Han et al., 2009). The fact that TRNP is located at the centre of this circulation pattern increases the possibility that any discharges or vessels adrift near TRNP will likewise be carried around and into its boundaries.

3 Other Information

3.1 Since 2010, TRNP Park Rangers have been collecting and compiling information on impacts of international shipping traffic around the TRNP, albeit with limited capabilities due to the isolation and inherent limitations of surveillance capabilities of the Park Ranger Station. Annual records have been based on personal observations of Park Rangers and extremely limited radar coverage of the immediate vicinity of the TRNP. A review of the records of limited radar coverage during the period from 2010-2013 echoes the upward trend of ship transit, notably passing through the TRNP Buffer Zone. Refer table 4, below.

Year	No. of Ships Tracked	Monthly Average	Rate of Increase
2010	3,358	280	-
2011	4,253	363	23%
2012	3,616	302	-20%
2013	5,546	462	35%

Table 4: Number of ships tracked by the TRNP Park Ranger Station with extremely limited radar coverage

3.2 The upward trend in ship transits around the TRNP translates into an expected increasing risk in shipping-related impacts, both operational and accidental. Ship groundings have been demonstrated as the most prominent risk, followed by pollution from discharges. A recent study of maritime trade and traffic trends in the Sulu-Sulawesi Region concluded that all global trade forecasts indicate "higher volumes of international shipping will transit through or close to Philippine national waters and as a consequence increase the vulnerability of the Tubbataha Reefs Natural Park". It pointed out that the potential increase in very large vessels transiting through the area to service the ore, coal and LNG trades, and growing populations around the Sulu-Sulawesi Region that would likely also increase import activities and the corresponding number of vessels operating in the area, also posed significant threats. (Butt and Johnson 2013).

3.3 A separate study that mathematically modelled ship incident risks around TRNP corroborated the above report by concluding that "incident probabilities and monetary value at risk (MVR) have increased in recent years; the probability of pollution in 1999-2007 increased by about 60% for South-East Asia compared to 1979-1998, and the associated MVR for tankers has doubled." It further noted that the increase of pollution risk close to the TRNP is even larger (Heij et al. 2013).

3.4 Park rangers have documented a notable increase in the amount of foreign, non-Philippine marine debris (product packaging, plastic containers) collected at the TRNP ranger station, indicating a clear correlation between the amount of shipping traffic and the amount of marine debris washed ashore at the park ranger station (refer to table 5, below).

Year	Kg of debris collected
2010	198
2011	627
2012	635
2013	1,460

Table 5: Weight of marine debris collected annually by TRNP Park Rangers

3.5 Ship groundings have occurred on Tubbataha Reefs. Available records indicate that as early as 1925, the British steamship **Egremont Castle** ran aground near the lighthouse on South Atoll, and in June 1949, the US steamer **Flying Cloud** ran aground near the South Island. Despite modern navigational technologies and accurate charting, such groundings have continued to take place. In January 2013, the US Navy minesweeper **USS Guardian** ran aground on the South Atoll and had to be completely dismantled for removal. Shortly after, in March 2013 the Chinese fishing vessel **Min Ying Pu** ran aground on the North Atoll and had to be salvaged (TPAMB 2014). These successive incidents in the TRNP have demonstrated its continued exposure to high risks posed by international shipping activity. The increase in shipping activity around the TRNP denotes a corresponding increase in risks of similar ship groundings.

3.6 Chemical and oil spill simulations conducted for the Tubbataha Management Office by the Physical Oceanography Laboratory of the Marine Science Institute show that at any given month, due to the proximity of several shipping routes around the TRNP, there is a very high probability that pollutants from chemical or oil spills will cross into the boundaries of the TRNP. Depending on the distance, time of year, monsoon and sea conditions, in the worst case scenario (outside of a vessel grounding) pollutants can take as little as four hours for chemical spills and five hours for oil spills. In the best case scenario, a chemical/oil spill threat can take as much as 8½ days before reaching the TRNP. Again, the increasing trend in shipping activities around the TRNP will result in a corresponding increase in risks of accidental chemical and oil spills (Villanoy et al. 2015).

3.7 In case of a marine incident at or in the vicinity of the TRNP, there are only two government vessels available in the nearest Coast Guard District operating base at Puerto Princesa City, a 35 m Search and Rescue Vessel and a 30 m Fisheries Monitoring, Control, and Surveillance patrol vessel. It will take such vessels approximately 10 hours to respond to an incident at the TRNP, assuming that the said vessels are not being used elsewhere and are capable of taking the stricken vessel in tow. Private salvage companies based in Manila with dedicated salvage capability will take at least 24 hours to respond to a marine casualty or incident in the vicinity of the TRNP. Moving the concentration of shipping away from the Park significantly reduces the risks of incidents and may provide just enough additional time for Park Rangers and other government agencies to prepare adequate incident response measures.

ANNEX 4

ASSOCIATED PROTECTIVE MEASURE FOR THE TUBBATAHA REEFS NATURAL PARK PSSA

Associated Protective Measure (APM)

The newly established area to be avoided "Tubbataha Reefs Natural Park PSSA" as the APM, is as follows:

Reference charts: Philippine charts No. 4707 (INT 5052), 2nd edition, November 2010; No. 4357, 1st edition, May 2009

Note: These charts are issued by the National Mapping and Resource Information Authority, Philippines and based on World Geodetic System 1984 datum (WGS 84).

Description of the area to be avoided

An area to be avoided by all types of ships of 150 gross tonnage and upwards, in the area designated as a Particularly Sensitive Sea Area, is bounded by a line connecting the following geographical positions:

(1) 09º 17'.75 N, 119º 47'.79 E
(2) 09º 04'.73 N, 120º 12'.76 E
(3) 08º 49'.63 N, 120º 13'.99 E
(4) 08º 29'.63 N, 119º 53'.16 E
(5) 08º 36'.15 N, 119º 35'.46 E
(6) 09º 11'.06 N, 119º 36'.67 E
hence back to point (1).

Note: The ATBA was approved at the fourth session of the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR 4/3/4) and subsequently adopted by MSC 98. It will enter into force on 1 January 2018 at 0000 hours UTC.

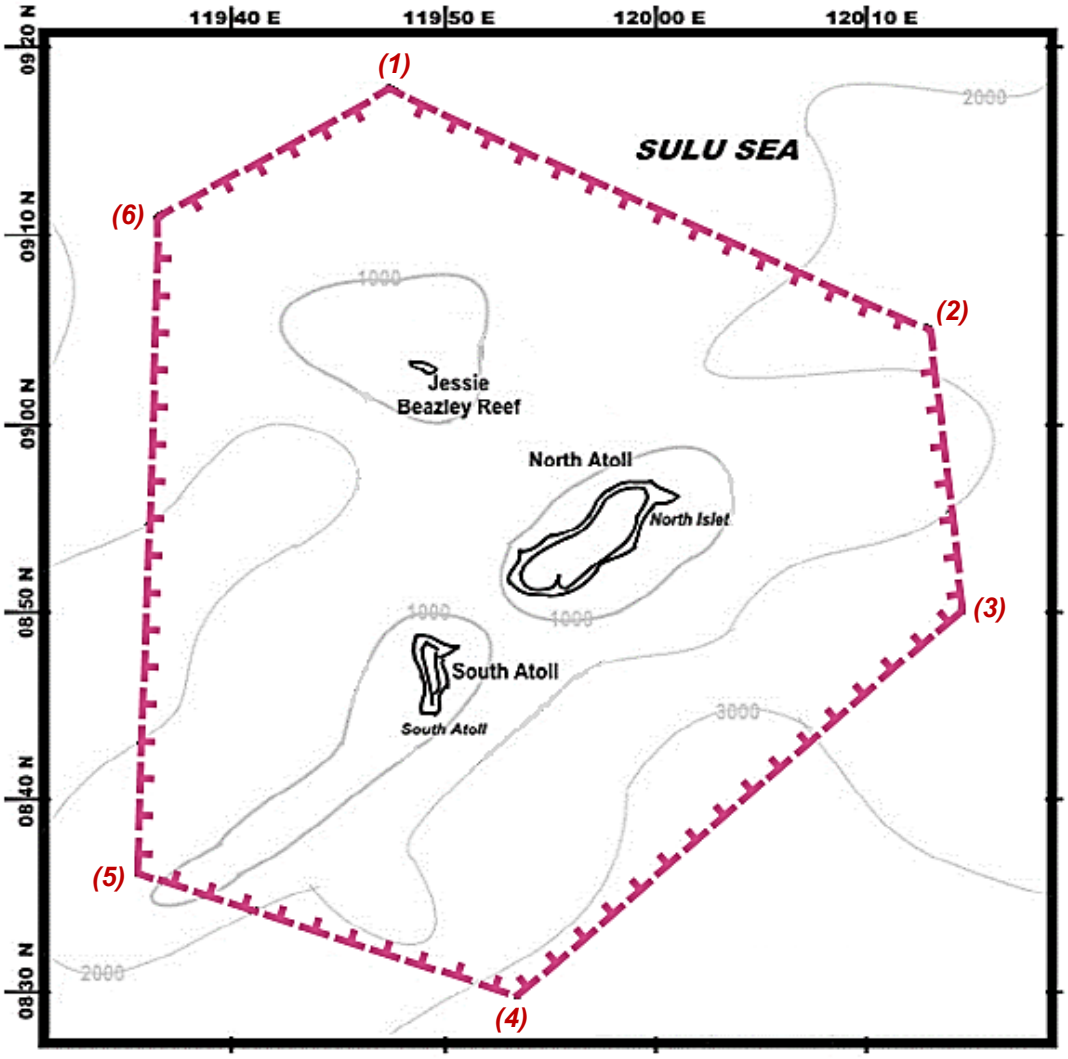

Figure: Chartlet of the Tubbataha Reefs Natural Park (TRNP) indicating the proposed ATBA with magenta lines with T-shaped dashes

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(MEPC 71/17/Add. 1, Annex 18)