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Agenda item 8

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IDENTIFICATION AND PROTECTION OF SPECIAL AREAS AND PSSAs

Designation of the Jomard Entrance as a PSSA

Submitted by Papua New Guinea

SUMMARY

Executive summary: This document sets out a proposal to designate the region surrounding Jomard Entrance, part of the Louisiade Archipelago at the south eastern extent of Milne Bay Province, Papua New Guinea as a Particularly Sensitive Sea Area. The region is an area in which ecological, environmental, economic and cultural attributes are seriously threatened by merchant shipping that passes through the Jomard Entrance. The proposal includes newly established routing systems (four two-way routes and a precautionary area) adopted at MSC 94 as the Associated Protective Measures. These routing systems entered into force on 1 June 2015.

Strategic direction: 7.1

High-level action: 7.1.2

Output: 7.1.2.2

Action to be taken: Paragraph 60

Related documents: Resolutions A.982(24) and MEPC.267(68); MEPC 69/INF.14; NCSR 1/3/8; NCSR 1/28, paragraph 3.24; MSC 94/21, paragraph 9.3; SN.1/Circ.327

Summary of the proposal

1 Papua New Guinea (PNG) proposes the designation of the region surrounding the Jomard Entrance, part of the Louisiade Archipelago at the south eastern extent of the Milne Bay Province, as a Particularly Sensitive Sea Area (PSSA), see figure 1. The proposed PSSA is centred on the Jomard Islands, and includes Bramble Haven to the north-west. The region falls within Zone 1 of the Milne Bay Seascape, which has been accepted as meeting the requirements for the UNESCO World Heritage Tentative lists as a mixed property. The Government of PNG continues to work towards nomination of the Milne Bay Seascape for inscription on the World Heritage List.

2 The objective of the proposed PSSA is to protect the area's unique and threatened species as well as to preserve as far as practicable its critical habitat and diversity, while allowing for projected increased shipping traffic using the Jomard Entrance. The proposal includes newly established routing systems (four two-way routes and a precautionary area), adopted at MSC 94, as the Associated Protective Measures. A risk assessment has indicated that these APMs could reduce the frequency of collisions by 50%. The APMs also reduce the risk of physical damage to sensitive reef areas and marine pollution caused by groundings. In addition to addressing the increasing risk through the implementation of the APMs, PSSA designation is considered necessary to increase community and mariner's awareness of the area's sensitivity and associated risks of navigation.

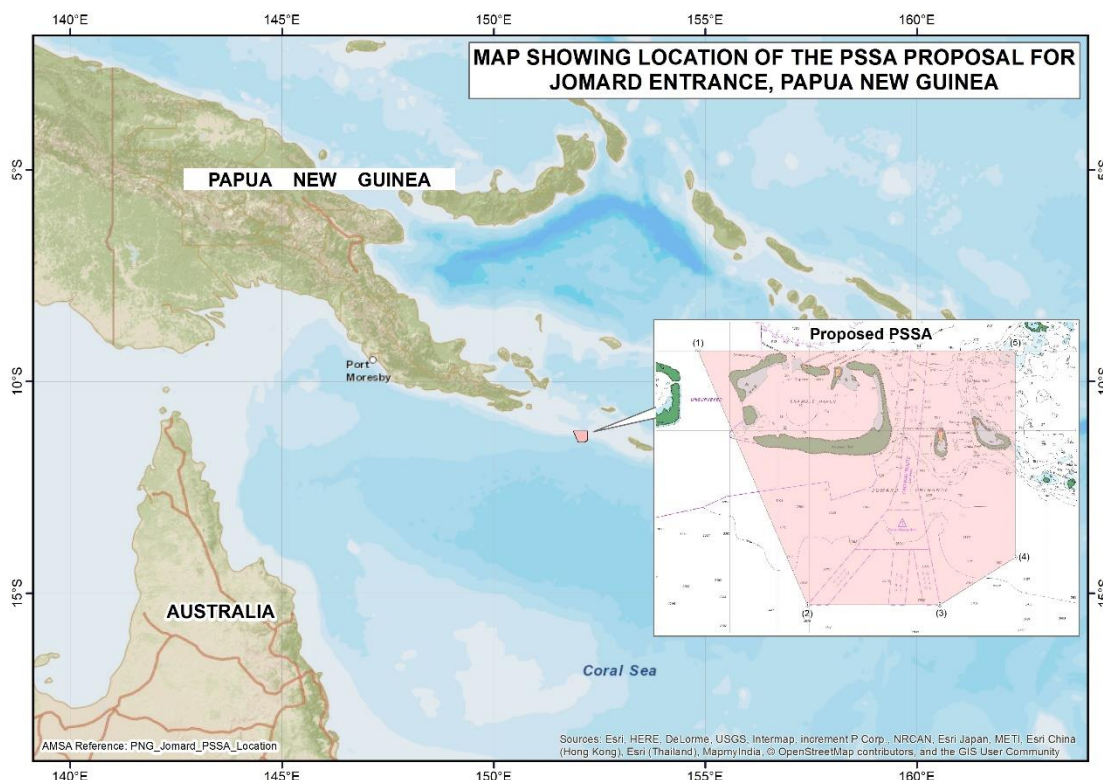


Figure 1 – Map showing the location of the proposed PSSA

Description of the area

General

3 The PSSA is centred on the Jomard Islands and encompasses Bramble Haven to the north-west and extends to the southern boundary of the two-way routes approved by NSCR 1 and adopted by MSC 94, see figure 2. The co-ordinates of the proposed PSSA are set out in annex 1, and fall within the Exclusive Economic Zone (EEZ) of PNG.

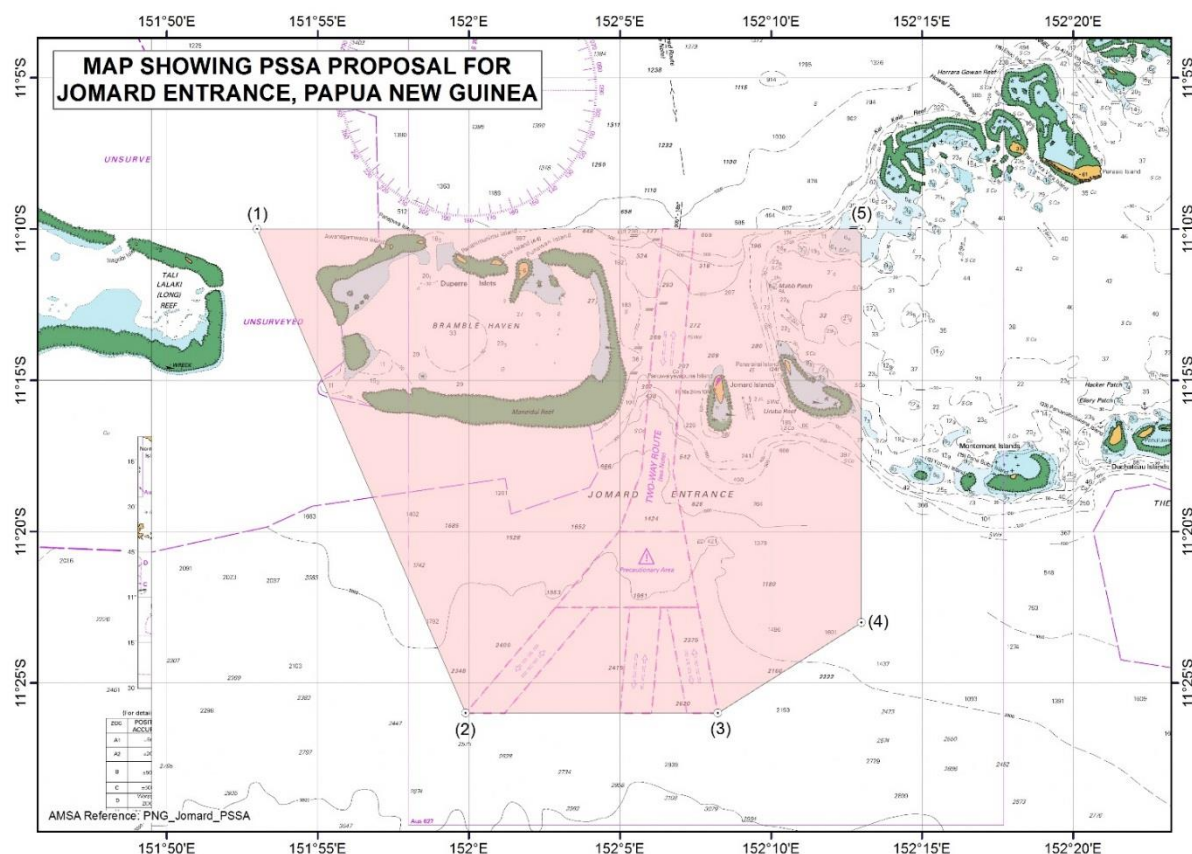


Figure 2 – Map showing the proposed PSSA and newly established IMO routing systems

The Jomard Entrance ecosystem

4 The Jomard Islands consist of two small uninhabited coral cay islands – Jomard Island (also called the Panuwaiyayapuna Island, meaning "long island") and Panarairai Island (also called Panadaludalu, meaning "island of dolphins"). The islands are located on raised reef flats and are fringed by coral reefs of significant size. The morphology of the fringing reef varies from site to site due to the different physical processes that take place on different parts of the island (e.g. wind and wave action). Without the current protection provided by the fringing reefs, the physical processes evident would ultimately erode the islands away. The fringing reef of Jomard Island also provides a significant habitat for marine species such as fish, crustaceans, corals, bivalves and other marine organisms. The marine life surrounding Jomard Island is extremely diverse in nature.

5 The beaches at Jomard Island are made up of fine sands and coral rubble. Ground vegetation lines the upper limits of the beach providing stability and protection from eroding processes, while the littoral zone (intertidal zone) is home to corals that have adapted to withstand intense ultraviolet radiation, desiccation and high salinities. The reefs surrounding Jomard Island provides very good shelter for foraging and mating activities for turtles. Furthermore, these diverse reef systems support other marine species like fish, rays, clam and sea cucumber which seek food, refuge and thrive in this healthy ecosystem. The beaches of Jomard Island and its fringing reefs accommodate a number of globally endangered species.

6 The terrestrial environment provides shelter for various species of birds like pigeons, crows and sea eagles. Jomard Island has been identified to have the largest turtle-nesting rookery in the southern part of Milne Bay Province. All six species of turtles that may be found in the region are currently listed in Appendix I of the Convention on International Trade in

Endangered Species of Wild Fauna and Flora (CITES) as species threatened with extinction, and are also listed in Appendix I and/or Appendix II of the Convention on the Conservation of Migratory Species of Wild Animals. The IUCN Red List of Threatened Species currently lists the Loggerhead, Leatherback and Olive Ridley turtles as Vulnerable; the Green turtle as Endangered; and the Hawksbill turtle as Critically Endangered.

7 Bramble Haven lies to the north-west of the Jomard Islands and consists of a total of five coral cay islands namely, Punawan, Siva, Pananimunimu, Panapwa and Awanagamwana Islands. These islands are important habitat to marine fauna and flora and lie on a reef platform of approximate depth range of 2 metres to 25 meters. The southern part of this group of islands consists of moderately exposed fringing and lagoonal reefs with sand and coral bommies in the shallows and coral ridges running horizontally across the slope. These drop off into deep water. The islands harbour marine species of turtles, giant clam, bumphead parrotfish (*Bolbometopon muricatum*) and humphead (maori) wrasse (*Cheilinus undulates*) that are on the IUCN Red list of threatened species. Green and hawksbill turtles often utilize these areas for nesting, mating and foraging, while loggerhead turtles transit through the region. This area is commercially exploited at a very low level. Factors that contributes toward this include the location of these islands in relation to human settlement.

8 As the proposed PSSA is part of the Louisiade Archipelago, Milne Bay Province, and is also within the Coral Triangle, the critical habitat, diversity and biogeographic importance criteria are applicable throughout the proposed PSSA. The uniqueness or rarity and fragility criteria apply particularly in the vicinity of the Jomard Islands, with the naturalness criteria particularly applicable around Bramble Haven. The social or economic dependency and human dependency criteria are also applicable in both the Bramble Haven and Jomard Islands. Further details are provided below.

Ecological, Socio-Economic and Scientific Criteria

Ecological criteria

Uniqueness or rarity

9 Six of the world's seven marine turtle species can be found in the waters off PNG. These include Hawksbill, Green Turtle, Leatherback, Flatback, Loggerhead and Olive Ridley. (Kinch, J., 2003). Of these, the first three are commonly found in the vicinity of Jomard Entrance. Scientific surveys and anecdotal evidence suggest that PNG has some of the largest remaining populations of these three turtle species in the world today. There is an informal tagging programme for turtle management and conservation at Jomard Islands, as the turtles have been nesting there annually for generations.

10 In terms of rarity, all six species of turtles that may be found in the region are currently listed in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) as species threatened with extinction, and are also listed in Appendix I and/or Appendix II of the Convention on the Conservation of Migratory Species of Wild Animals. The IUCN Red List of Threatened Species (<http://iucn-mts.org/>) currently lists the Loggerhead, Leatherback and Olive Ridley turtles as Vulnerable; the Green turtle as Endangered; and the Hawksbill as Critically Endangered (see below).

Turtle Type	IUCN Status List
Loggerhead Turtle (<i>Caretta caretta</i>)	Vulnerable
Green turtle (<i>Chelonia mydas</i>)	Endangered
Leatherback turtle (<i>Dermochelys coriacea</i>)	Vulnerable
Hawksbill turtle (<i>Eretmochelys imbricata</i>)	Critically Endangered
Flatback turtle (<i>Natator depressus</i>)	Data Deficient
Olive ridley turtle (<i>Lepidochelys olivacea</i>)	Vulnerable

Critical Habitat

11 Fifteen marine subregions were identified within the Milne Bay Province by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) Ocean Flagships, the Louisiade Archipelago has the largest area of reef or reef associated (deep lagoon) habitat, with approximately 800,000 ha, representing 58% of the Archipelago (Skewes et al., 2003 and Skewes et al., 2011).

12 As noted in paragraph 8 above, the area provides a critical habitat for the Hawksbill, Green and Leatherback turtles. According to the IUCN, the overall global decline of the Hawksbill in particular has been in excess of 80% (Mortimer and Donnelly, 2008). In addition to these turtle species, both Bramble Haven and Jomard Island provide habitats for migratory marine and shore birds nesting sites, as well as for all giant clam species. (Allen et al., 2003)

13 The fringing reef of Jomard Island provides a significant habitat for marine species such as fish, crustaceans, corals, bivalves and other marine organisms (UNESCO, 2016). The marine life surrounding Jomard Island is extremely diverse in nature. These habitats are sensitive to any shipping impact (e.g. oil spills, introduction of harmful marine species, marine debris and physical harm caused by groundings). Jomard Island has been identified to have the largest turtle-nesting rookery in the southern part of Milne Bay Province (UNESCO, 2016).

Representativeness

14 The Jomard Entrance ecosystem include pristine reefs with high species endemism that are relatively undisturbed or only commercially exploited at a very low level (see Reef Condition Index value in paragraph 16 below).

Diversity

15 PNG is located in the "Coral Triangle", an epicentre of rich marine biodiversity, see figure 3, and is home to 76% of all known coral species, 37% of all known coral-reef fish species, and 53% of the world's coral reefs. The area is of ecological and scientific significance and has great natural beauty and diversity, as seen in its pristine islands and reefs. Its waters host over 500 species of hard coral, 44 species of mangroves and 14 species of seagrass. PNG's Fourth National Report to the Convention on Biological Diversity (UNEP GEF 2016) notes that:

"PNG provides one of the last opportunities for the conservation of significant areas of coral reefs in the western Pacific region of maximum marine biodiversity. Few other locations offer the combination of large areas of high diversity reefs mostly undamaged by human activity; relatively low population size in most coastal areas; a scientific and management community that is committed to sustainable use of marine resources, and a customary land tenure system that can be used to enhance conservation efforts."

16 The Conservation International 2000 Rapid Marine Biodiversity Assessment (Allen et al. 2003) of the Milne Bay Province listed Punawan Island at Bramble Haven as the fifth most coral diverse of the 57 sites surveyed, with 107 coral species observed. The assessment also listed both Punawan and Jomard Islands as among the best sites in Milne Bay with a rich combination of coral and fish diversity, as well as being relatively free of damage and disease.

17 The 2000 Assessment also assessed reef condition at 57 sites in Milne Bay Province. Reef condition is a term pertaining to the general "health" of a particular site as determined by assessment of key variables including natural and human-induced environmental damage and general biodiversity as defined by major indicator groups (corals and fishes). A Reef Condition Index (RCI) value – derived from three components: coral diversity, fish diversity, and relative damage from human and natural causes – as calculated for each site. The results of this analysis indicated that the Louisiade Archipelago is included in the geographical area with the highest ranking Reef Condition Index. Overall, the RCI for the Milne Bay Province was significantly greater than the values obtained at previously surveyed reefs in other parts of the Coral Triangle.

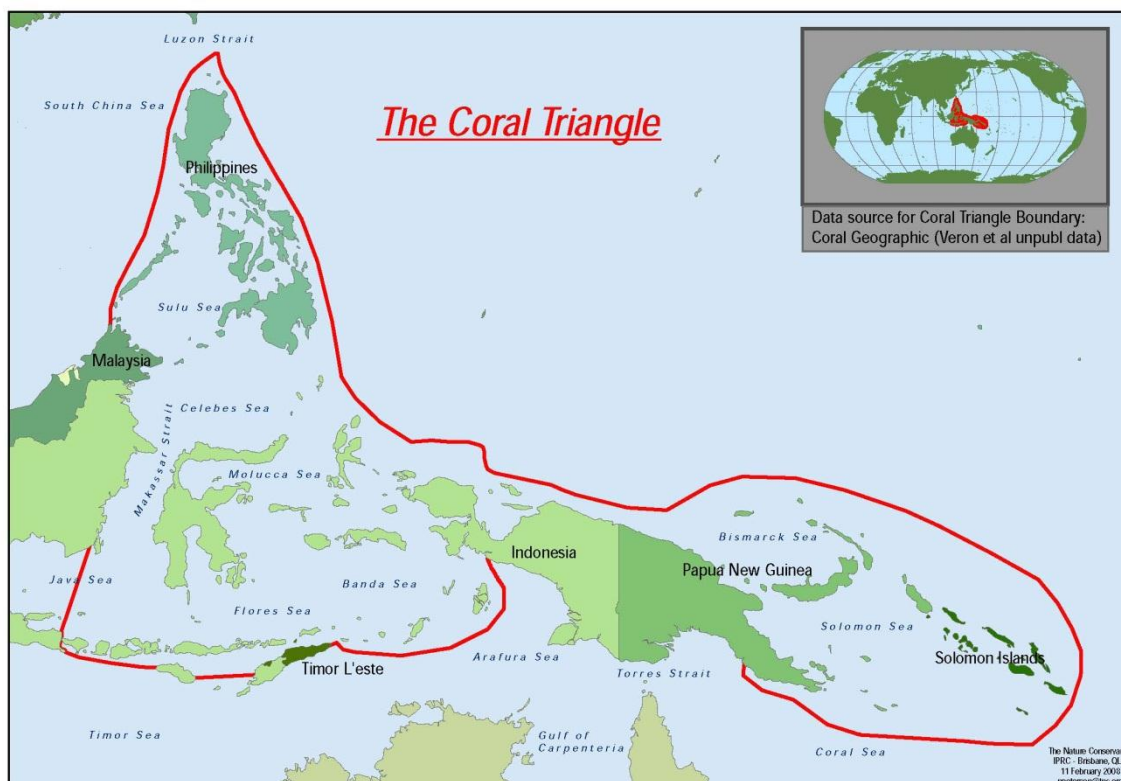


Figure 3 – Map showing Coral Triangle

Naturalness

18 The 2000 Rapid Marine Biodiversity Assessment of Milne Pay Province (Allen et al. 2003) concluded that Punawan Island at Bramble Haven was one of the six sites in the Province (from a total of 57 sites surveyed) that rated highly from an aesthetic point of view (good diversity, pristine condition, extensive cover, and good visibility). Most indicators show that Milne Bay's reefs are in remarkably good condition, especially compared to other areas in the Coral Triangle. While coral bleaching has occurred several times in limited areas of Milne Bay, this has mostly been limited to the northern areas of less than 10 degrees south.

Fragility

19 Jomard Island is a small coral cay island constructed on reef platforms, which have reached sea level during the Holocene. The island is fringed by a coral reef of significant size. The morphology of the fringing reef varies from site to site due to the different physical processes that take place on different parts of the island (e.g. wind and wave action). Without the current protection provided by the fringing reef, the physical processes evident will ultimately erode the island away (UNESCO, 2016).

20 A 2011 assessment of the coastal and marine ecosystem assets of Milne Bay found that the Louisiade Archipelago would be one of the subregions most impacted, taking into account sensitivity, exposure and weighting of ecosystem assets, climate change and human pressures (Skewes et al., 2001).

Bio-geographic importance

21 Milne Bay by nature of being a series of variable island chains in close proximity to the large island of New Guinea has led to very high levels of endemism across virtually all taxa. These islands are a part of the Woodlark and Pocklington Rises that are separated by active seabed floor spreading. The islands range from mountainous volcanic chains through to coralline, makateas, atolls and sand cays, and their associated sea mounts and shelf; sunken, fringing and barrier reefs. Milne Bay has disproportionate biodiversity richness and endemism for its size (Andréfouët et al., 2006).

Social, cultural and economic criteria

Social or economic dependency

22 PNG's human population (~10 million inhabitants, 2016) has strong economic, social and cultural ties with the sea. PNG's marine resources are an important source of economic livelihood in the extensive rural portions of the country's islands and coastal areas. They support a private sector fishing industry that is a significant source of government revenue. (Asian Development Bank, 2016).

23 Tuna and shrimp are the major commodities comprising PNG's commercial fisheries. The 2010 tuna catch totalled 799,000 tons, while the shrimp catch has averaged about US\$10.5 million in recent years. Within the proposed PSSA Panuwaiyayapuna and Panarairai islands are both important sites for subsistence artisanal fishing and diving for commercially valuable resources, while Punaman island is an important site of sea cucumbers for beche-de-mer and trochus harvesting.

Human dependency

24 PNG's waters are vital to the subsistence of its inhabitants and the nation's economy, with the sea acting as a "supermarket" for coastal community residents. Fish is a major source of dietary protein, particularly in island and coastal areas, evident in the relatively high annual per capita fish consumption of coastal community residents, which is estimated at 3.3 kilograms (Asian Development Bank, 2016).

25 Marine resource use in the Louisiade Islands is artisanal in nature, providing for subsistence needs as well as limited small-scale commercial production. Because of a lack of regularly scheduled cargo transport and the absence of refrigeration facilities, commercial harvesting primarily targets non-perishable, high-value invertebrate products. Residents of some of the smaller islands are especially dependent on income from harvesting resources such as sea cucumbers for beche-de-mer.

Cultural heritage

26 Traditional shell "money", locally known as "bagi" made from *Spondylus* shell is also extensively extracted and manufactured in the Louisiade Islands. These bagi flow along the Louisiade Archipelago and are eventually modified and fed into Kula Ring.

27 With the importance of the marine resources for islanders wellbeing many traditional legends, dances and hymns are linked to it. Many still ply the waters to these islands in either traditional sailing canoes or dinghies maintaining their seamanship and navigational skills in doing so (Smaalders and Kinch, 2003).

Scientific and educational criteria

Research

28 CSIRO Division of Marine Research, PNG National Fisheries Authority and Conservation International conducted a joint marine stock assessment of the abundance of reef resources and sustainable use of beche-de-mer resources for Milne Bay in 2001. This included the islands of the Jomard Passage (Skewes et al., 2002)

Baseline for monitoring studies

29 Geo-referenced dive sites from the Conservational International Marine RAP of 2000, the stock assessment mentioned in paragraph 28, ongoing turtle monitoring and tag retrieval data held by SPREP (Secretariat of the Pacific Regional Environment Program) and Queensland National Parks and Wildlife Service as well as 2015 National Maritime Safety Authority Surveys are current baselines. Permanent transects need to be established to establish a standardised baseline.

Vulnerability to impacts from international shipping activities

Vessel traffic characteristics

Operational factors

30 Fishing vessels, local trade vessels, local sailing canoes, tourist and recreational craft can be encountered anywhere in the Jomard Entrance area.

31 There are currently no existing activities or foreseeable developments of offshore exploration or exploitation of the seabed. Nautilus Mining previously held Exploration Licence Tenements in the Solomon Sea, however these lapsed. Similarly, there are no offshore structures other than those used to provide aids to navigation in the region.

Vessel types

32 There is a wide variety of vessels operating in this area, including large bulk carriers, timber carriers, LNG, oil and chemical tankers, passenger ships, cruise liners and third generation container ships.

33 Since July 2014, LNG has become one of the primary commodities exported by PNG. It is predicted that around 110 LNG ships will call at PNG ports each year for the first three years, with this number forecast to double by 2020. All LNG ships will use Jomard Entrance as their primary route to/from Japan, which is contracted to import around 85% of PNG's LNG. There is a second LNG project within PNG that will likely be developed in the near future.

34 PNG is experiencing significant growth in marine tourism. Cruise industry sources reveal that up to 100 ship calls per annum are expected each year for the next five years, following which a further growth of 34% is estimated for the next five years.

Traffic characteristics

35 PNG is experiencing a marked increase in the volume of international ship traffic passing through its waters. It is estimated that some 9,200 ships transited its waters in 2013. Many ships in ballast drift near the southern approaches to Jomard Entrance awaiting their turn to load at Australian ports. Some 90% of the ships carrying commodities exported by Australia's eastern coast ports to north Asian markets (including China, Japan and the Republic of Korea) use this most direct route through PNG's waters, see figure 4.

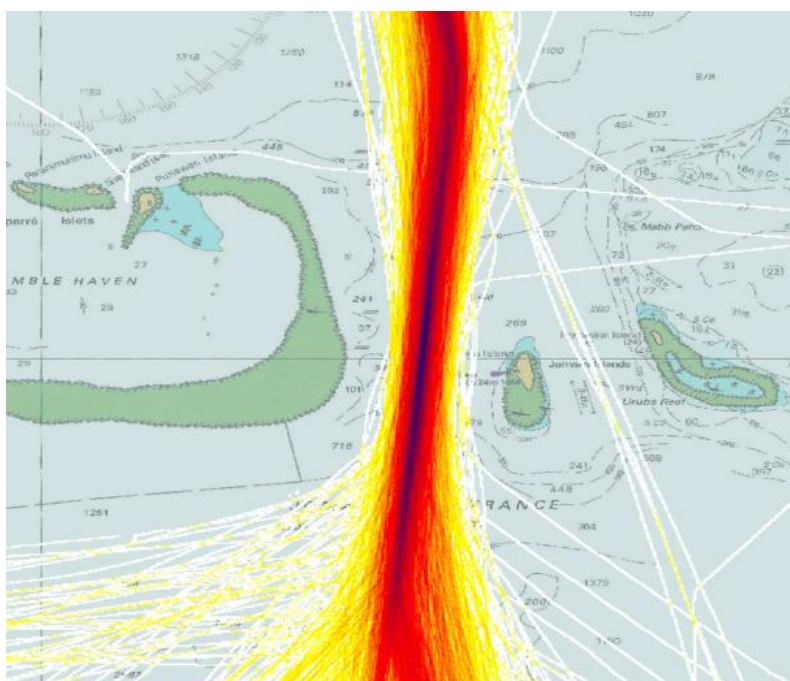


Figure 4 - AIS density plot showing the traffic flow at Jomard Entrance

36 Over the last decade and a half, commodity exports have been a key driver of economic activity in Australia, driven by strong growth in demand from emerging economies in Asia. Substantial resource exports (mainly coal and Liquefied Natural Gas (LNG)) from Australian ports have contributed to increased traffic through PNG's waters. This trend is predicted to continue for some time to come.

37 Coal exports from the state of Queensland in Australia will be the biggest driver of increased shipping through Jomard Entrance, through which northbound ships loaded with coal from the ports of Hay Point, Abbot Point and Gladstone will traverse. The coal port of Newcastle on the central coast of New South Wales also contributes to the significant traffic through Jomard Entrance.

38 As an example, the number of ships calling at the Australian coal exporting port of Abbot Point each year is forecast to grow from 172 (in 2012) to 1,640 (in 2032) – almost a tenfold increase. Likewise, annual traffic from Hay Point in central Queensland is forecast to grow from 809 ships to 2,380 ships in the same period.

39 Concurrently, strong growth in PNG's mining and resource sectors has led to it becoming one of the world's fastest growing economies. As noted above, a variety of ship types transit PNG's pristine and reef-littered waters, the majority along well-used routes, see figure 5.

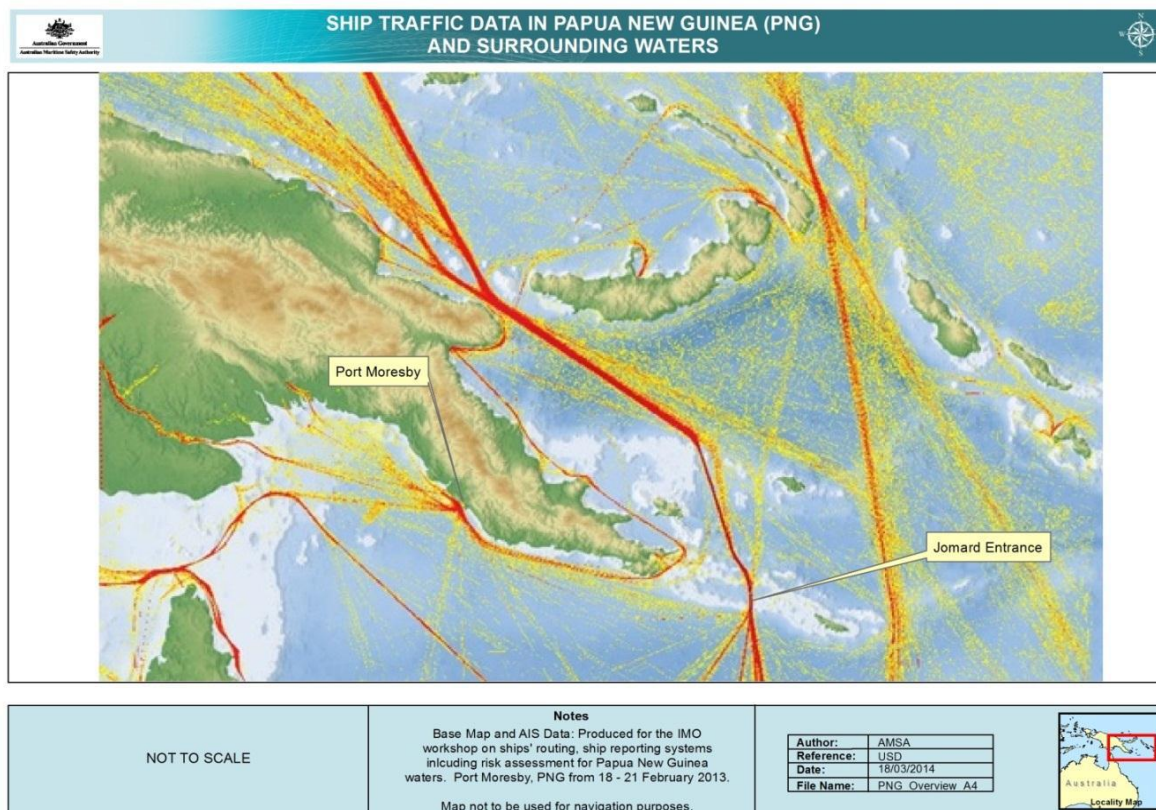


Figure 5 – Shipping traffic patterns in and around PNG waters

40 Taking into account the current and project levels of international shipping traffic, a risk assessment conducted using the IALA Waterways Risk Assessment Program Mk2 in February 2013 found that the introduction of a two-way route could reduce the frequency of potential collisions from the one every seven years to one every 14 years – a reduction of 50% in the number of potential collisions.

Harmful substances carried

41 Vessels transiting Jomard Entrance are primarily bulk carriers, however there are also significant numbers of oil, chemical/products and LNG tankers.

Natural Factors

Hydrographical

42 Hydrographic surveys in the immediate area of the proposed Two-way routes are to Zone of Confidence (ZOC) B. These surveys confirm existing charted depths and depiction of reef edges and are to be incorporated in a new 1:75,000 large scale chart in 2014-15. Areas outside the limits of these surveys are to ZOC C. Notably, the reefs defining Jomard Entrance are fronted by deep water which considerably exceeds the maximum draught of any surface vessel which could conceivably use the route.

43 It is worth noting that through extensive use by commercial shipping over an extended period of time, bathymetric surveys in the region of the Two-way route have been proven as adequate for safe navigation.

44 Electronic Navigation Chart (ENC) coverage of the area is provided as ENC AU412152, Edition 2, at a nominal scale of 1:90,000. This was updated to include larger scale coverage to the limits shown in figure 2 prior to the establishment of the Two-way route. Smaller scale approach coverage of the Coral and Solomon Seas is provided by AU220150, Edition 3. Additionally, smaller scale ENC are also available for planning. All ENC are metric and referenced to WGS84 and Lowest Astronomical Tide (LAT).

45 Paper chart coverage of Jomard Entrance is available in a new chart at a scale of 1:75,000 with limits and extent as shown in figure 2. The entrance is also depicted on existing smaller scale charts, ranging from 1:150,000 for navigation and at smaller scales for planning. All charts are metric and referenced to WGS84 and LAT.

Meteorological

46 The Jomard Passage is in a tropical cyclone prone zone. Though cyclone frequency is expected to decrease with climate change projections, the severity is expected to increase when they do occur. The main shipping routes are heavily exposed to prevailing south-east trade winds, which have a fetch of hundreds of nautical miles.

Oceanographic

47 Previous research has shown evidence of surface and deep boundary currents flowing around the southern end of the Louisiade Archipelago, with leakage of surface water from the Coral Sea through the Louisiade Archipelago.

History of groundings, collisions or spills

Groundings

48 Chart Aus 510 shows four wrecks (visible at chart datum) on the immediate reefs in and around Jomard Entrance. In the early 2000s, several longliners ran aground in the Jomard and Bramble Haven area, with three running aground in 2000. In 2006, a bulk carrier grounded on Long Reef near Jomard Entrance, spilling oil and raw sugar. In 2011, the total loss of engine power by a container ship in the same area led to the Royal Australian Navy providing assistance by way of a patrol boat (which happened to be on exercise in PNG at the time). A tow line attached to the stricken ship prevented it from grounding on nearby reefs and potentially causing reef damage and pollution of the area.

Marine Debris

49 A marine debris survey conducted in 2012 on four islands within the proposed PSSA – Jomard, Panarairai, Punawan and Siva – reported that marine debris is accumulating in significant amounts on these islands (Raaymakers et al., 2012). While further work would be needed to establish with any certainty the proportion of debris contributed by shipping, it is hoped that the revised MARPOL Annex V, which entered into force on 1 January 2013, will result in a reduction in marine debris from shipping within the proposed PSSA.

Intervention and response

50 The length and remoteness of PNG's coastline poses major challenges to any response to an accident and containing any resulting pollution. These challenges are also compounded due to limited response capabilities in the region. As noted above, the main shipping routes are heavily exposed to prevailing south-east trade winds. A casualty in such circumstances will make any salvage and recovery task challenging. The closest tugs and oil spill response equipment are located at Port Moresby, see figure 1, which is approximately 330 nautical miles away. Therefore, it is vital to avoid incidents in the region.

Associated protective measures

Types of measures

51 The newly established routeing systems (four two-way routes and a precautionary area) at Jomard Entrance are proposed as the Associated Protective Measures. These routeing systems were approved at the first session of the Sub-Committee on Navigation, Communications and Search and Rescue (refer NCSR 1/3/8 submitted by Australia and PNG), subsequently adopted by MSC 94 and entered into force on 1 June 2015.

52 Details of the ships' routeing systems adopted by MSC 94 are:

- .1 a one nautical mile wide Two-way route to the north of Jomard Entrance, which extends approximately 20 nautical miles from the northern boundary of the precautionary area, see figure 6;
- .2 three 1 nautical mile wide Two-way routes to the south of Jomard Entrance, each aligned with the general traffic pattern to/from ports on the east coast of Australia. The routes extend approximately 3.5 nautical miles from the southern boundary of the precautionary area, see figure 6; and
- .3 a quadrilateral-shaped precautionary area that lies between the northern and southern two-way routes described above, see figure 6.

Legal basis

53 The General Provisions on Ships' Routeing established pursuant to regulation V/10 of the SOLAS Convention.

Categories of ships

54 The Two-way routes and precautionary area can be used by all ships navigating in the area.

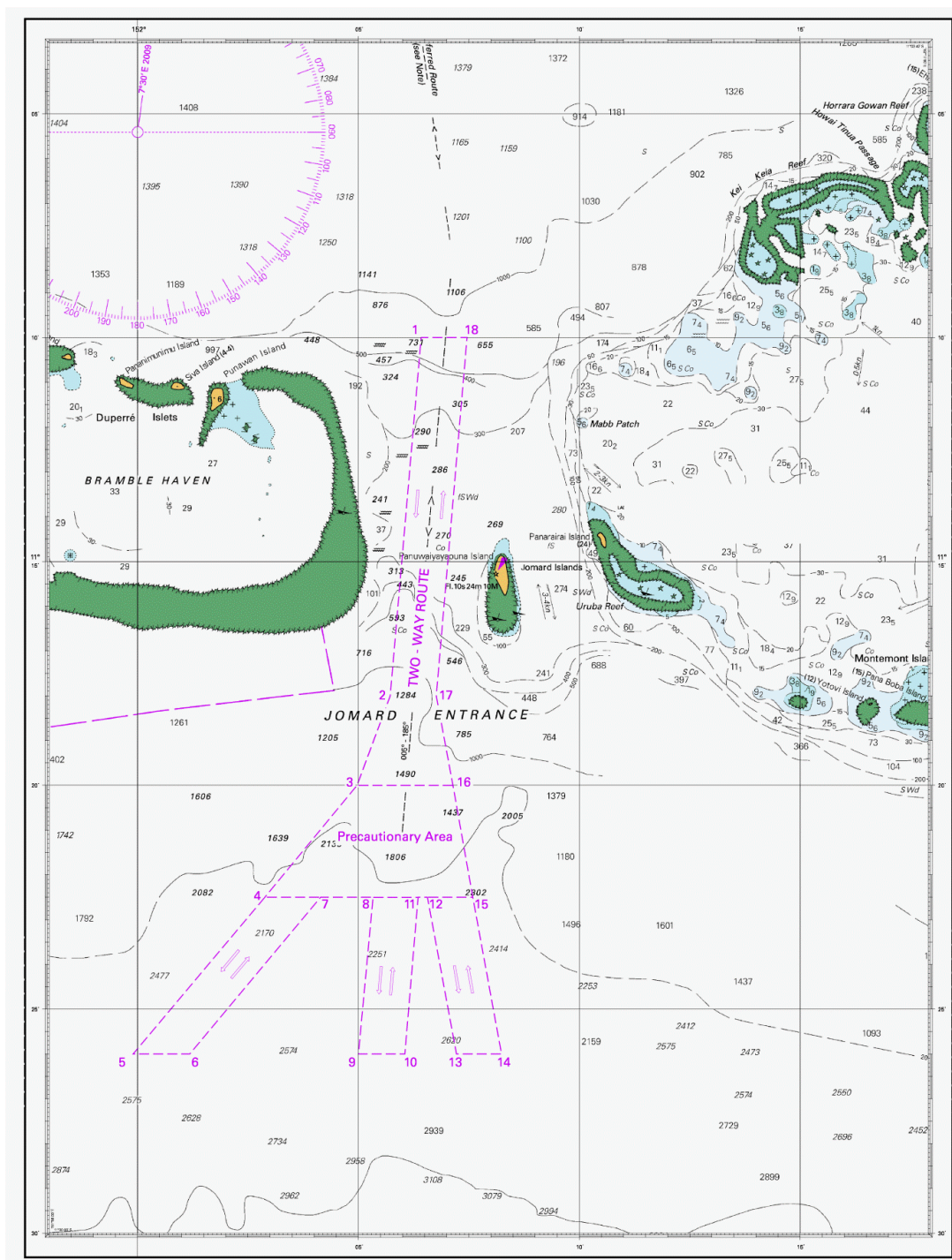


Figure 6 – The four Two-way routes and precautionary area at Jomard entrance, approved by MSC 94

Impact on navigation

55 Shipping traffic in Jomard Entrance has limited sea room. This means, given the volume of shipping, ship encounters tend to be head on (or, in some cases, following). The Two-way routes and associated precautionary area have made navigation safer, easier and more predictive by reducing the risk of collisions, physical damage and marine pollution. They also better accommodate the large increase in traffic that is anticipated in the coming years due to strong growth in commodity exports (mainly coal and LNG) from ports in the region and

the growth of marine tourism. As indicated in document NCSR 1/3/8, the Two-way routes align with the existing traffic flow as closely as possible and the well-defined and clearly charted routes allow for prudent navigation and discourages taking "short-cuts". In summary, there has been little to no impact on the routes that ships would otherwise follow, and the designation of the area as a PSSA will not place any additional burden on international shipping. The Government of PNG would, however, wish to emphasise the important of full compliance with the MARPOL Convention by all ships using the Jomard Entrance.

56 By allowing ships to follow well-defined lanes, the four Two-way routes through and south of Jomard Entrance facilitate safe passage for ships in a navigationally restricted and challenging area. They also separate opposing streams of traffic, provide for more effective voyage planning and keep ships clear of the reefs and islands that lie close outside the two-way routes. The precautionary area to the south of Jomard Entrance calls for ships to navigate with particular caution, due to converging traffic in the three southern two-way routes, see figure 7.

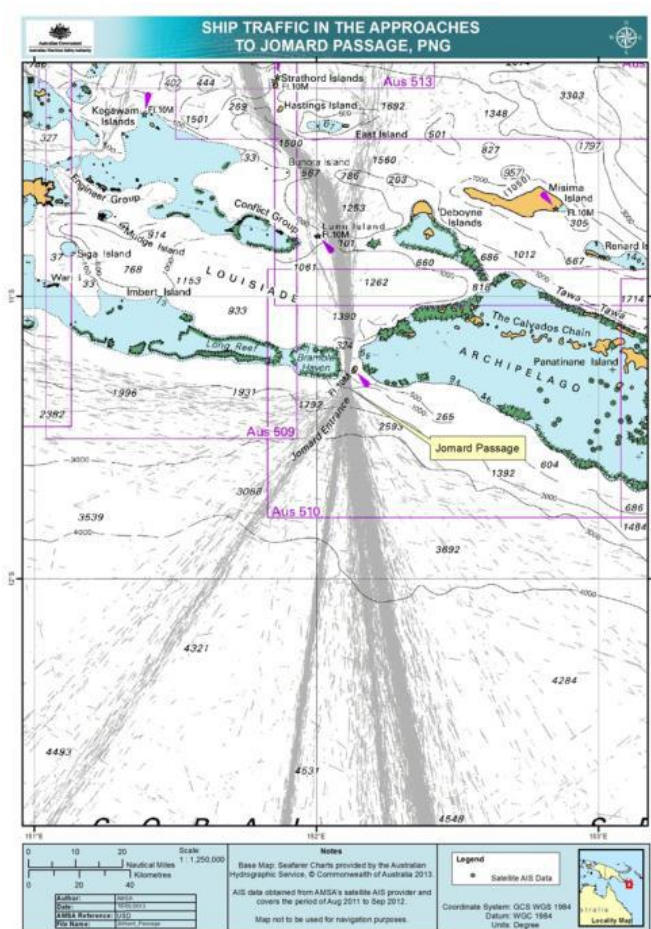


Figure 7 – Shipping traffic patterns in the Jomard Entrance area

Miscellaneous issues

Coral Triangle Initiative

57 PNG is a member of the six-country Coral Triangle Initiative for Coral Reefs, Fisheries and Food Security (CTI-CFF). One of the relevant regional projects under the CTI-CFF is Strengthening Coastal and Marine Resources Management in the Coral Triangle of the Pacific. The objective of the project is to promote the conservation and sustainable use of globally significant coastal and marine resources in the Coral Triangle region through the introduction of integrated and ecosystem-based coastal and marine resources management.

Enforcement

58 The existing two-way routes and precautionary area at Jomard Entrance are recommendatory only.

Review of PSSA and Associated Protective Measures

59 Consistent with paragraph 8.4 of the *Revised guidelines for the identification and designation of PSSAs*, PNG will keep this area under review and, as necessary, will bring to IMO any concerns and proposals for additional associated protective measures, or modifications to the associated protective measures or PSSA itself.

Action requested of the Committee

60 The Committee is invited to consider the information contained in this document and to approve the request to designate the region surrounding Jomard Entrance as a particularly sensitive sea area.

ANNEX 1

**GEOGRAPHIC COORDINATES OF THE PROPOSED
PARTICULARLY SENSITIVE SEA AREA**

A list of geographical coordinates of the proposed Particularly Sensitive Sea Area is provided below. All geographical positions are based on WGS 84. Listed number refer to figure 2.

No.	Latitude	Longitude
1	11°10.00'S	151°53.00'E
2	11°26.00'S	151°59.90'E
3	11°26.00'S	152°08.24'E
4	11°23.00'S	152°13.00'E
5	11°10.00'S	152°13.00'E

ANNEX 2

REFERENCES

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