

Development of International Law concerning Ocean Transport of Radioactive Fuel and Waste

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Defining the Issues

- The recent practice of ocean transport of radioactive fuel and waste raises the legal issues, such as how to balance navigational freedom with environmental concerns.
- The legal problem of ocean transport of radioactive fuel and waste is a universal one, not restricted to any particular country or countries.

Long-term Plan of Atomic Energy Development and Utilization

- The Atomic Energy Commission of Japan adopted the “Long-term Plan of atomic Energy Development and Utilization” in June 1987.
- At present, a total of 52 power-generating nuclear reactors, the third biggest number in the world, are supplying 37% of the total electricity generated in Japan.

Article 2 of the Basic Law of Atomic Energy of 1955

- “The research, development and utilization of atomic energy shall be limited to peaceful purposes to secure safety under independent democratic management, with their results being opened to contribute to international co-operation.”

The Recycling of Nuclear Fuel

- The Nuclear Fuel Recycle Section was set up in 1989 to discuss
- (1) the use of plutonium at light-water reactors
- (2) the processing of MOX fuel
- (3) the transport of plutonium from England and France
- (4) the use of recycled uranium, etc..

The Position of Japan in respect of Transport of Nuclear Materials

- It is an activities based on the right of free navigation established under international law, and that the government has taken the most careful measures possible in accordance with the international standards prescribed by the relevant competent international organization.

The Akatsuki- maru



プルトニウム輸送船 あかつき丸

東海港入港(平成5年1月5日)



東海港での荷揚げ /

プルトニウム輸送容器(FS-47)

1993年(平成5年)1月5日早朝, プルトニウム専用輸送船「あかつき丸」が, フランスから約1.1トンの核分裂性プルトニウムを積んで東海村の日本原子力発電(株)専用港(東海港)に入港した。

「あかつき丸」は, 1992年11月7日(現地時間)フランスのシェルブール港を出港し, 海上保安庁の巡視船「しきしま」の護衛のもと, 大西洋を南下し, 喜望峰を回り, インド洋, タスマン海, 太平洋を經由し, 横浜港を出港してから往復4カ月余り, 約6千キロの長旅であった。輸送したプルトニウムは, 高速増殖原型炉「もんじゅ」の取替燃料用原料として使用されている。

動燃30年史のサイトより

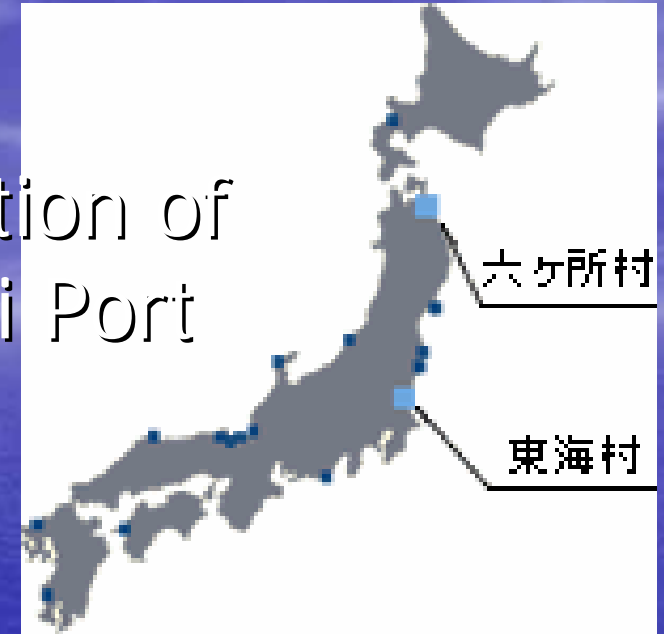
http://www.jnc.go.jp/jnc/siryoku/30nensi/kuchie/kuchi_16.html

Location of Cherbourg



http://upload.wikimedia.org/wikipedia/commons/d/dc/Cherbourg_dot.png

Location of Tokai Port



使用済燃料輸送容器
(キャスク)



東海村
(原電東海港)

原燃輸送株式会社のウェブサイト

<http://www.nft.co.jp/outline/outline1.html>

The Pacific Pintail

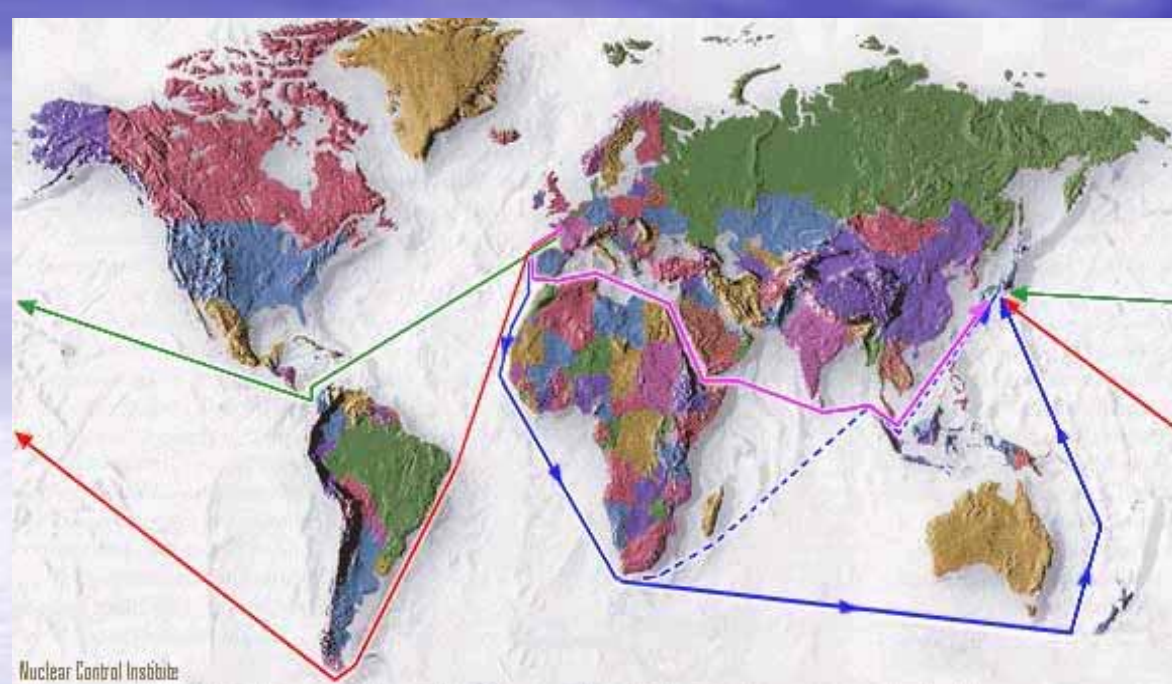


英国BBCのウェブサイト記事より
<http://news.bbc.co.uk/1/hi/uk/828638.stm>



グリーンピースのウェブサイトより
<http://www.greenpeace.org.uk/contentlookup.cfm?CFID=35505&CFTOKEN=85265595&ucidparam=20020426120745>

Route of Transport of Radioactive Fuel and Waste



Green line

Sea shipment route via Panama Canal, to be used for 1998 waste shipment. Also used in 1984 for first plutonium shipment. Distance: 12,156 nautical miles (19,563 km).

Blue line

Sea shipment route via Cape of Good Hope, used for the 1997 nuclear waste shipment from France to Japan. Also used in 1992 for plutonium shipment (ship avoided Strait of Malacca in response to protests from Indonesia and Malaysia [route shown with dotted line] and went between Australia and New Zealand instead [solid line]). Distance: 14,248 nautical miles (22,929 km).

Red line

Sea shipment route used in 1995 to ship waste around Cape Horn. Distance: 16,661 nautical miles (26,813 km).

Viola line

Sea shipment route via Suez Canal. Distance: 10,899 nautical miles (17,540 km). Route not used to date.

Transport of Radioactive Materials in the Territorial Sea under UNCLOS

- The crux of the matter is whether the transport of radioactive materials by foreign vessels in the territorial sea is or is not in accordance with their right of innocent passage through it.
- Foreign vessels enjoy the right of innocent passage through the territorial sea under customary law and also UNCLOS.

Article 19(1) of the United Nations Convention on the Law of the Sea (UNCLOS)

- “Passage is innocent so long as it is not prejudicial to the peace, good order or security of the coastal State. Such passage shall take place in conformity with this Convention and with other rules of international law.”

Article 23 of UNCLOS

- “Foreign nuclear-powered ships and ships carrying nuclear or other inherently dangerous or noxious substance shall, when exercising the right of innocent passage through the territorial sea, carry documents and observe special precautionary measures established for such ships by international agreements.”

Inner Structure of Ship Transporting Radioactive Fuel and Waste

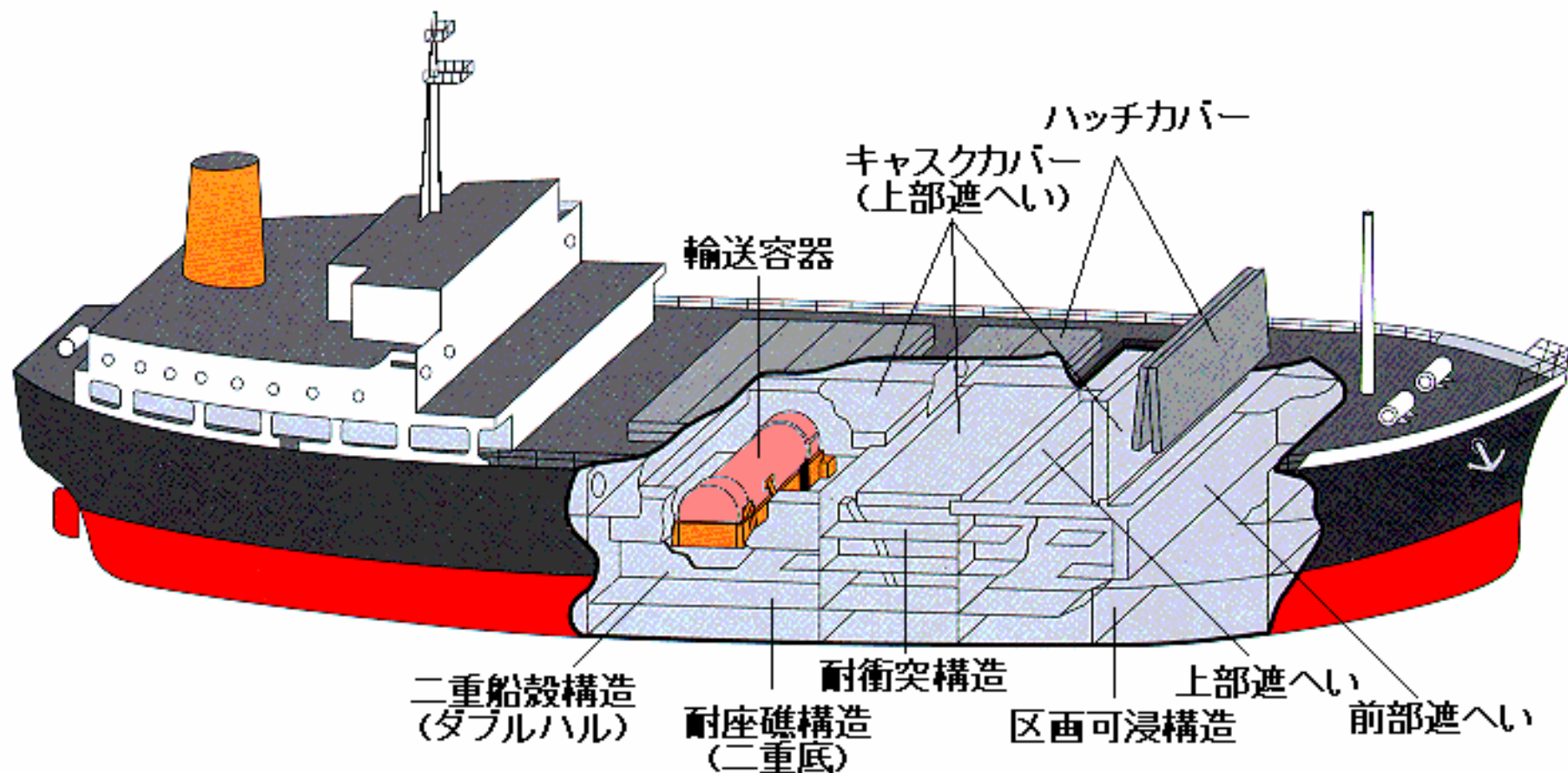


図5 運搬船の内部構造

[出典] 原子力安全委員会(編): 原子力安全白書 平成12年度版、(2001年4月)p.144
原燃輸送: 使用済燃料運搬船パンフレット(1998年3月)

Article 22 (1) of UNCLOS

- “The coastal States may, where necessary having regard to the safety of navigation, require foreign ships exercising the right of innocent passage through its territorial sea to use such sea lane and traffic separation scheme as it may designate or prescribe for the regulation of the passage of ships.”

Transport of Radioactive Materials in the EEZ under UNCLOS

- Transport of radioactive materials by foreign vessels is clearly outside the scope of the coastal State's jurisdiction over such 'resource-related matters' as laid down in Article 56 of UNCLOS.
- The coastal States are not empowered under UNCLOS to provide for unilateral precautionary measures in the EEZ.

Article 58(1) of UNCLOS

- “In the EEZ, all states, whether coastal or land-locked, enjoy, subject to the relevant provisions of this Convention, the freedoms referred to in article 87 of navigation and overflight and of the laying of submarine cables and pipelines, and other internationally lawful uses of the sea related to these freedoms . . .”

The Mayaguezanos Case of 1999

- The plaintiffs sought injunctive relief against the Federal Government and industrial defendants to prevent the latter from transporting vitrified nuclear waste through the waters off the coast of Puerto Rico.
- The Pacific Swan shipment was the first one of this particular type of nuclear waste to transit through the Panama Canal.

The Pacific Swan



<http://archive.greenpeace.org/nuclear/transport/wasteshipment.html>



Pacific Swan. Barrow, UK
©Greenpeace



Pacific Swan. Barrow, UK
©Greenpeace

<http://archive.greenpeace.org/nuclear/transport/wasteshipment.html>

The Judgment of U.S. Court

- “The U.S. may not interfere with the transit of ships carrying vitrified nuclear waste through either its territorial waters or its EEZ as long as said ships are in compliance with the provisions of UNCLOS
Article 108, as well as all applicable international regulations”.

The MOX Plant case of 2001

- Ireland requested ITLOS to prescribe some provisional measures, on the ground that UK plant in question could damage the Irish Sea because it failed to take the necessary measures to prevent pollution from radioactive materials, to co-operate with Ireland in the protection of the marine environment, etc.

The Decision of ITLOS

- ITLOS specifies the co-operation by saying:
“prudence and caution require that Ireland and UK cooperate in exchanging information concerning risks or effects of the operation of the MOX plant and in devising ways to deal with them, as appropriate.”

Developments in IAEA



Headquarter of IAEA at Vienna
International Centre
<http://www.iaea.org/About/index.html>



http://image.guardian.co.uk/sys-images/Guardian/Pix/pictures/2005/10/07/EIBaradei_iaea372.jpg

The International Atomic Energy Agency (IAEA) and its director general, Mohamed ElBaradei, were named the winners of the 2005 Nobel peace prize today.



http://idag.no/foto/el-baradai_passe.jpg



<http://dwelle.de/image/art-big-45250.jpg>

Measures to Strengthen International Cooperation in nuclear, Radiation and transport Safety and Waste Management

- The General Conference welcomed the practice of some shipping States and operators of providing timely information and responses to relevant coastal States in advance of shipments to enable them to participate in making preparations regarding safety and security, including emergency preparedness. It invited other States to do the same in order to improve mutual understanding and confidence regarding shipments of radioactive materials.

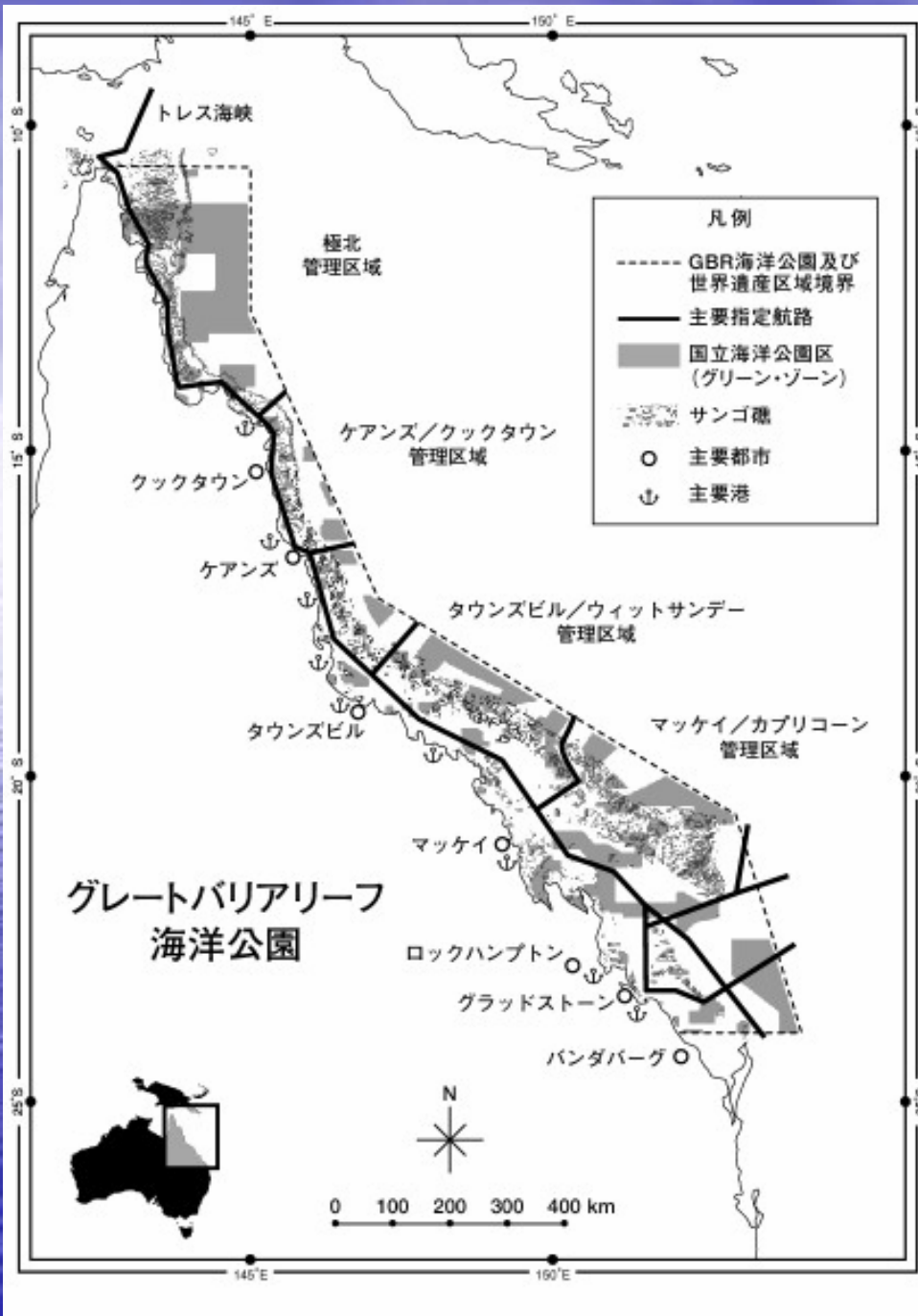
Conclusion

- UNCLOS allows foreign vessels transporting radioactive materials to exercise the right of innocent passage in the territorial sea or to exercise the freedom of navigation in the EEZ.
- However, the bias towards freedom of navigation at the expense of environmental protection in UNCLOS does not reflect the attitude of today's international society.

Marine Protected Areas (MPA)

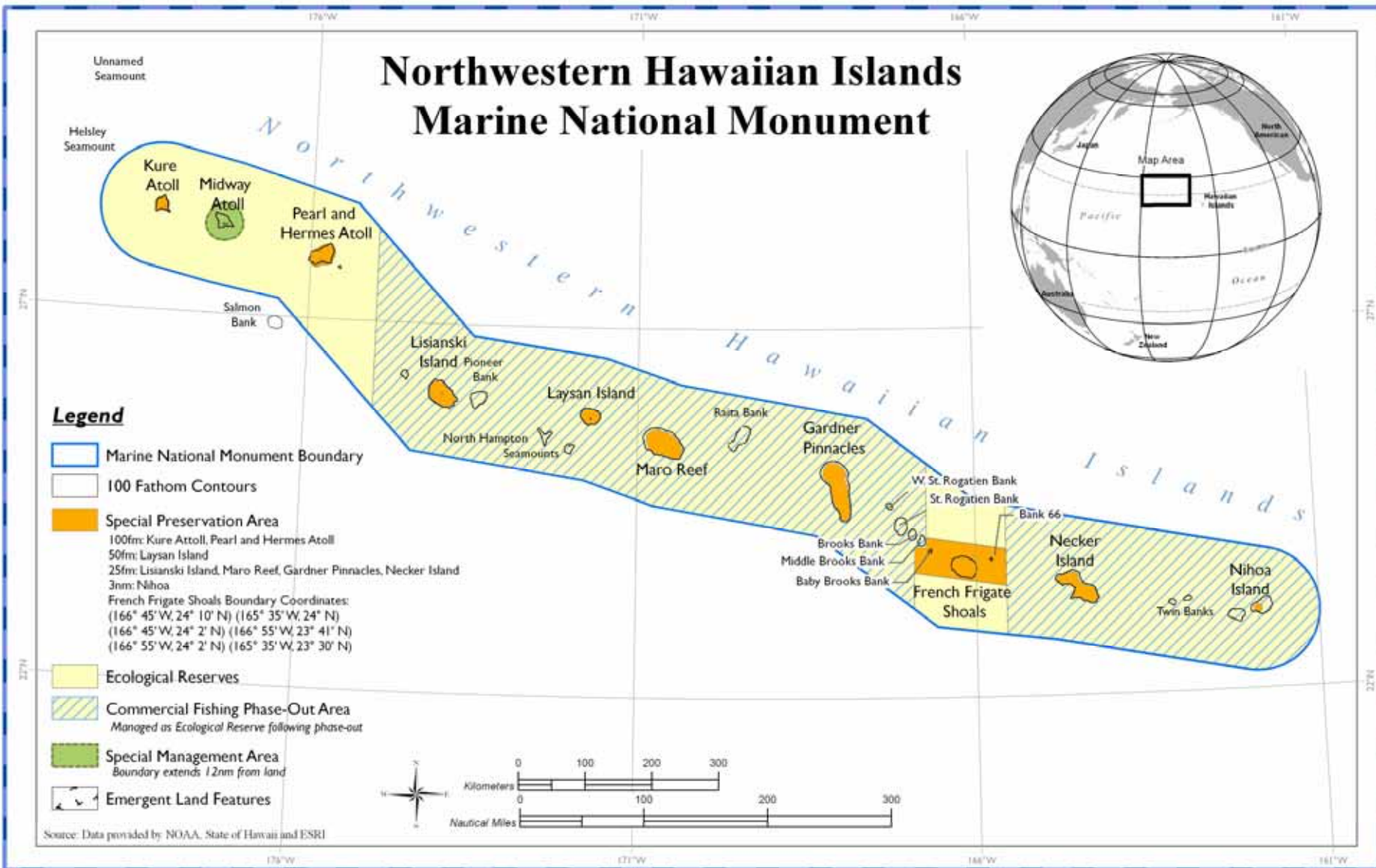
- An interesting phenomenon in the recent years is the designation of certain area of the sea not very far from the coast as “MPA”.
- A recent study shows that there are already more than 1,300 such designated areas in the world.

GBR Marine Park



The World's Largest MPA

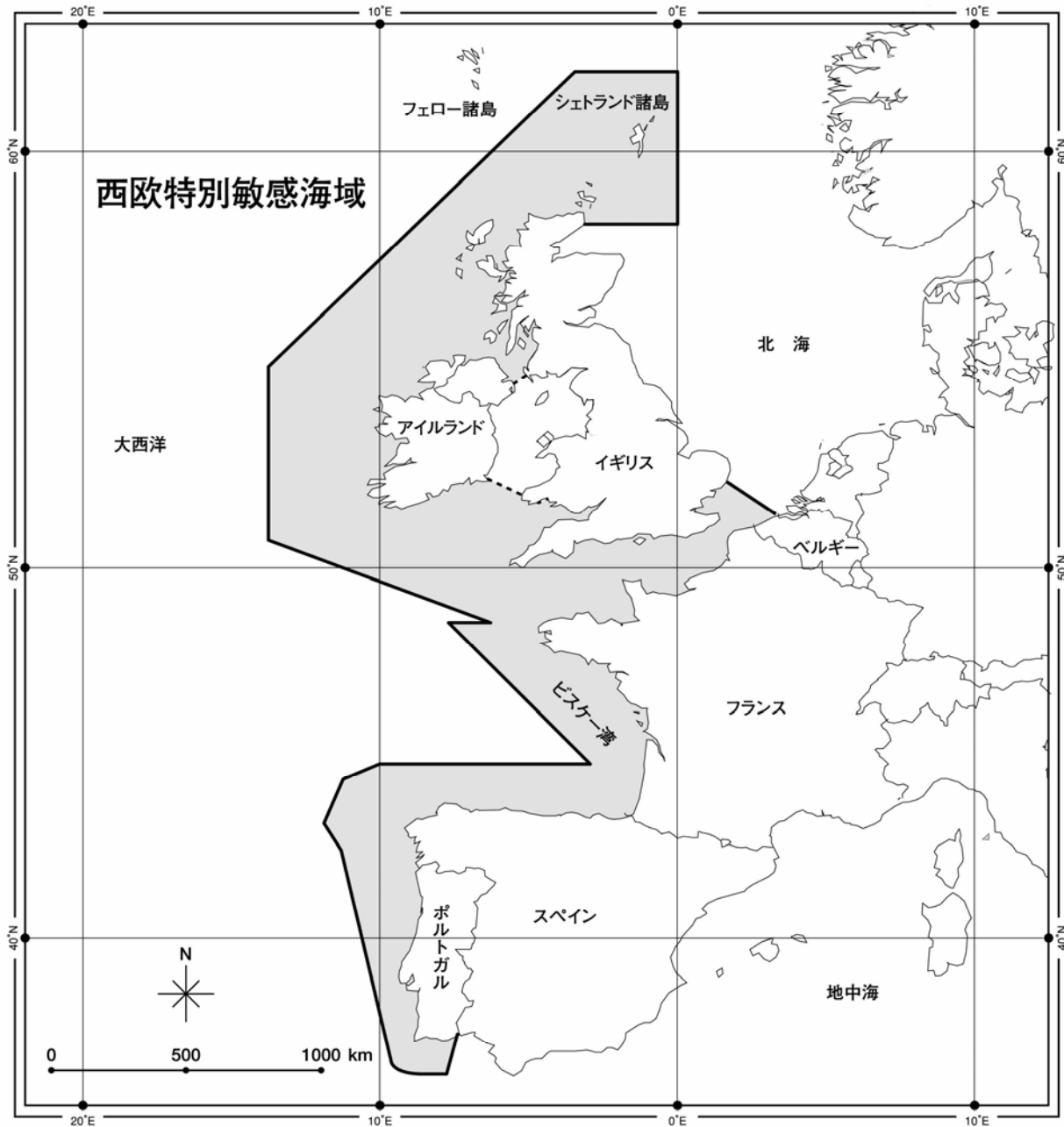
Northwestern Hawaiian Islands Marine National Monument



Particular Sensitive Sea Areas (PSSA)

- IMO adopted a resolution in 1991, allowing the designation of “PSSA”.
- In such designated special area of the sea, the coastal States may possibly restrict free navigation of foreign vessels for environmental considerations.

Western European Waters PSSA



PSSA in the World



- ① グレートバリアリーフ(オーストラリア、1990年9月)：義務的水先、義務的通報(2005年7月にトレス海峡まで拡大し、対面航路が導入された)
- ② サバナカマゲイ群島(キューバ、1997年9月)：分離通航帯、避航水域、排出禁止
- ③ マルペロ島(コロンビア、2002年3月)：避航水域
- ④ フロリダキース(米国、2002年3月)：避航水域(4カ所)、投錨禁止区域(3カ所)
- ⑤ ワッデン海(オランダ・デンマーク・ドイツ、2002年10月)：既存の保護措置(新規措置無し)義務的通報及び交通監視、分離通航帯、深水深航路、勧告的及び義務的水先、MARPOL条約の特別海域
- ⑥ パラカス国立保護区(ペルー、2003年7月)：避航水域(ばら積み炭化水素及び有害液体物質を積載する200総トン以上の船舶を対象)
- ⑦ 西ヨーロッパ(ベルギー・フランス・アイルランド・ポルトガル・スペイン・英国、2004年10月)：重油燃料を積載するシングルハルトンカーの通報義務
- ⑧ カナリア諸島(スペイン、2005年7月)：5カ所の避航水域、2カ所の勧告的航路、義務的通報
- ⑨ バルト海区域(デンマーク・エストニア・フィンランド・ドイツ・ラトビア・リトアニア・ポーランド・スウェーデン、2005年7月)：(新規及び既存のものを修正した)分離通航帯、深水深航路、既存の航路指定に追加される避航水域、水先制度及びMARPOL条約の特別海域及びSO_x排出規制区域
- ⑩ ガラバゴス群島(エクアドル、2005年7月)：避航水域

Proposal of the “Notification without Authorization”

- The “notification without authorization” scheme might be one of the acceptable solutions.
- Such a scheme seems to strike a fairer balance between the interests of navigation, on the one hand, and those of the protection of the marine and coastal environment, on the other.