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SUB-COMMITTEE ON SAFETY OF  
NAVIGATION  
53rd session  
Agenda item 3

NAV 53/3/5  
11 April 2007  
Original: ENGLISH

## ROUTEING OF SHIPS, SHIP REPORTING AND RELATED MATTERS

### Ship Reporting System for the Papahānaumokuākea Marine National Monument

Submitted by the United States

#### SUMMARY

**Executive summary:** This document sets forth a proposal for the establishment of a ship reporting system for the Papahānaumokuākea Marine National Monument, “CORAL SHIPREP”, which is recommendatory for ships transiting through the Monument, and is mandatory for ships entering or departing a United States port or place, for consideration and transmission to the Maritime Safety Committee for recognition. The objective of this system is to improve maritime safety where navigation is particularly hazardous, protect the fragile environment, preserve cultural resources and areas of cultural importance significant to Native Hawaiians, and facilitate the ability to respond to developing maritime emergencies

**Action to be taken:** Paragraph 13

**Related documents:** NAV 53/3/4 (ATBA proposal); MEPC 56/INF.2; MSC.43(64), as amended by MSC.111(73); MSC.189(79); A.851(20); SOLAS regulation V/11

#### Introduction

1 The United States proposes to establish a ship reporting system, which is recommendatory for ships in transit through Papahānaumokuākea Marine National Monument (the Monument) and mandatory for ships as a condition of entry to a United States port or place, in a 10 nautical mile wide band surrounding the recently designated Monument and in three areas through the Monument. The proposed system, “CORAL SHIPREP”, is set forth in the annex. A chartlet and geographical co-ordinates of the proposed reporting area are attached to the annex. This proposal is an integral part of the United States proposal for designation of this area as a Particularly Sensitive Sea Area (MEPC 56/8). It is one of three associated protective measures, the others being the six existing Areas To Be Avoided (ATBAs) and a proposal to amend and expand those ATBAs around the Northwestern Hawaiian Islands (NWHI) (NAV 53/3/4), which are under consideration by this Sub-Committee.

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2 The objective of this ship reporting system is to provide important protection for the fragile environment of the Papahānaumokuākea Marine National Monument and its cultural resources as it is an area of cultural importance significant to Native Hawaiians. As importantly, given the obstacles that make navigation hazardous in this area, this system will provide mariners with critical alerts and other important information to assist them in navigating safely through the area. Furthermore, it will increase knowledge of ship movements and facilitate a timely response to any developing maritime emergencies.

## **Background**

3 In accordance with resolution MSC.43(64) (Guidelines and Criteria for Ship Reporting Systems), as amended, the United States took into account several factors in addition to those required to be set forth in the annex to this proposal.

### *Environmental conditions and resources in the area*

4 The area proposed for the ship reporting system is a 10 nautical mile wide band surrounding the Monument and three areas through it. As set forth more fully in the United States proposal to amend and expand the six existing Areas To Be Avoided (NAV 53/3/4) and in the United States proposal for designation of the Papahānaumokuākea Marine National Monument as a Particularly Sensitive Sea Area (PSSA)(MEPC 56/8), the Monument area encompasses an approximately 1,200 mile stretch of small islands, atolls, banks, seamounts, pinnacles, shoals, and other emergent features located northwest of the main Hawaiian Islands.<sup>1</sup> This healthy, thriving, and integrated ecosystem is home to more than 7,000 marine species, including the critically endangered Hawaiian monk seal, the threatened green sea turtle, and the endangered hawksbill sea turtle. Additionally, the limited land areas of the NWHI serve as nesting areas for over 14 million seabirds and are the only home for four endangered land birds. Hundreds of documented archaeological sites have been found on two of the islands and there are areas of cultural importance significant to Native Hawaiians throughout this area. Native Hawaiians continue to maintain their strong ties to this area because they view it as a sacred place. Extensive biological, geological, historical, and cultural research is conducted in the NWHI. Records indicate that over 60 historic shipwrecks lie in waters surrounding the islands, many of them historically and archeologically significant.<sup>2</sup>

### *Traffic considerations*

5 Container ships, bulk carriers, and tankers regularly transit the waters surrounding the NWHI. Although due to its remoteness, the exact route of vessels through this area is unknown, it appears that most traffic passes to the north of the island chain, following the great circle routes to and from ports on the west coast of North America and East Asia. Other trans-Pacific ships traveling from ports in Hawaii transit at least 100 miles south of the NWHI. Occasionally, vessels transiting from the south pass within the boundaries of the recently-proclaimed Monument. A preliminary analysis of vessel traffic patterns within the NWHI was conducted based on data collected by the World Meteorological Organization's Voluntary Observing Ships scheme. Under this scheme, geo-referenced data is collected from

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<sup>1</sup> The term, "main Hawaiian Islands", is used throughout this proposal to refer to the islands of Hawaii, Maui, Oahu, Molokai, Nihau, Kauai, and Kahoolawe. These islands are the main populated islands of the Hawaiian Islands chain, with the exception of Kahoolawe, which is an uninhabited nature reserve. None of the main Hawaiian Islands are part of the Northwestern Hawaiian Islands.

<sup>2</sup> This figure does not include aircraft or vessels that were sunk in the Battle of Midway.

select non-research vessels that make frequent and regular crossings of all major ocean basins. While this scheme does not capture the all vessel traffic, during a 21-month study period in 2004 and 2005, approximately 132 vessels reported from within the proposed reporting area: 104 of these vessels were freighters, 8 were tankers, 4 were research vessels, 2 were passenger vessels, 2 were vessels used for educational purposes, 1 was a recreational vessel, 1 was a towing vessel with a 666 foot vessel in tow, and 10 were unidentified vessels. The 132 vessels were flagged in 23 different countries.

6 The most significant challenge to safe maritime navigation in the NWHI is the presence of seamounts, banks, shoals, and submerged and emerging coral reefs which pose significant hazards. Some features in the area create challenges for safe navigation due to their constantly changing size and shape and low elevations. In other islands, local magnetic disturbances have been observed with variations of as much as 33 degrees. Due to the isolation of the NWHI, little communication infrastructure exists and aids to navigation are limited to the area of Midway Atoll. Additionally, the area of the proposed PSSA is currently covered by mostly small scale charts, with the most recent surveys taking place since 2000 near known islands, reefs and atolls. Although modern hydrographic surveys by the University of Hawaii and satellite imagery of the area have allowed NOAA's Office of Coast Survey to correct the position of several of these features, many of the submerged banks and isolated features have yet to be updated or discovered. Establishing a ship reporting system will assist ships in navigating safely through this area.

#### *Hydrographical and meteorological elements*

7 The northeast trade winds prevail throughout the year, but westerly blows can be expected during the winter. The average velocity of the winds is 12 knots, with monthly averages of 16 knots in December and 9.5 knots in August. Gales have been experienced in July and September. Occasional heavy showers of short duration also occur, cutting visibility to about 2 miles. The NWHI experience annual high energy large wave events from five to over ten meters which approach largely from the northwest during the winter months. During this time, the average wave power increases substantially and extreme wave events of over ten meters pound the shallow water coral communities, thus posing a hazard to navigation.

#### *Summary of measures being taken*

8 This proposal for the establishment of a ship reporting system is an integral part of a proposal to identify the Papahānaumokuākea Marine National Monument as a PSSA. This ship reporting system, along with the United States proposal to amend and expand the six existing Areas To Be Avoided (NAV 53/3/4), constitute the associated protective measures to improve maritime safety, help to protect the area proposed for PSSA designation from the risk of damage by international shipping activities, preserve cultural resources and areas of cultural importance significant to Native Hawaiians, and facilitate the ability to respond to developing maritime emergencies. In preparing the PSSA proposal, the United States comprehensively reviewed the attributes of the proposed area, its vulnerability to damage by international shipping, and the most appropriate mechanism available through IMO to address the identified vulnerabilities. The establishment of this ship reporting system was determined to be an essential mechanism for achieving the objectives of PSSA designation. The United States submitted its PSSA proposal to the fifty-sixth session of the Marine Environment Protection Committee.

## **Proposal**

9 This proposal to establish the ship reporting system, “CORAL SHIPREP”, is critical to accomplishing the United States goals of improving maritime safety, protecting the fragile environment in this area, preserving cultural resources and areas of cultural importance significant to Native Hawaiians, and facilitating a timely response to developing maritime emergencies. Given the unique, sensitive, and vulnerable resources in this area, as well as the vast expanse of sea and hazards to navigation, this reporting system will provide an important mechanism to achieve these goals.

10 The proposed boundaries of the ship reporting system have been carefully delineated. The 10 nautical mile wide band surrounding the Papahānaumokuākea Marine National Monument and proposed PSSA is essential to remind vessels of the existence of this important area before they enter it. Additionally, vessels will be reminded of the IMO-adopted ATBAs so that they will have sufficient time to comfortably alter their course to comply with them. It is recognized, of course, that a ship reporting system recognized by IMO cannot direct a ship to alter course and that the ATBAs are of a recommendatory nature only. Since it is proposed that vessels report when they enter and leave the reporting area, a vessel that chooses to navigate through an ATBA will also be recommended to report when it leaves the reporting area and enters the ATBA. This will allow the vessel to be reminded of the hazardous nature of navigation in this area as well as provide a mechanism to ascertain the vessel’s approximate location, facilitating search, rescue, and response operations, if necessary. Thus, a vessel taking such route will be recommended to report four times: once when it enters the reporting area, once when it leaves the reporting area to enter the ATBA, once when it exits the ATBA and enters the reporting area on the other side of the ATBA, and once when it once again leaves the reporting area. The potential burden of reporting four times is justified by the navigation hazards that exist within the existing and proposed ATBAs. The reporting area also covers the three areas through the Monument that are not included within the ATBAs. The United States believes that these areas through the Monument provide the most preferable routes to transit the NWHI and thus the vessels using these areas will be recommended to report only twice, once when entering the reporting area and once when leaving.

11 In addition to the information on the existence and precise boundaries of the Papahānaumokuākea Marine National Monument (the proposed PSSA) and the ATBAs, the ship reporting system will also enable vessels to receive critical alerts and other important information about specific and urgent situations. Furthermore, it will result in increased knowledge of ship movements in the area, thus enhancing the safety of navigation by enabling a timely response to be launched to any developing maritime emergencies.

12 The attached annex contains the required elements to establish the ship reporting system, along with a chartlet and geographical co-ordinates of the proposed reporting area.

## **Action requested of the Sub-Committee**

13 The Sub-Committee is asked to consider this proposal for establishment of a ship reporting system for the Papahānaumokuākea Marine National Monument, “CORAL SHIPREP”, as set forth in the annex and forward the proposal to the Maritime Safety Committee for recognition. The effective date of implementation will be six months after recognition.

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**ANNEX**

**DRAFT RESOLUTION MSC.[.....](83)**

**(adopted on (...) October 2007)**

**ADOPTION OF THE NEW SHIP REPORTING SYSTEM FOR  
THE PAPAĪANAUMOKUĀKEA MARINE NATIONAL MONUMENT,  
“CORAL SHIPREP”**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO regulation V/11 of the International Convention for the Safety of Life at Sea, 1974 (SOLAS Convention), in relation to the adoption of ship reporting systems by the Organization,

RECALLING FURTHER resolution A.858(20) resolving that the function of adopting ship reporting systems shall be performed by the Committee on behalf of the Organization,

TAKING INTO ACCOUNT the guidelines and criteria for ship reporting systems adopted by resolution MSC.43(64), as amended by resolutions MSC.111(73) and MSC.189(79),

HAVING CONSIDERED the recommendations of the Sub-Committee on Safety of Navigation at its fifty-third session,

1. ADOPTS, in accordance with SOLAS regulation V/11, the new ship reporting system for the Papahānaumokuākea Marine National Monument, “CORAL SHIPREP”,
2. DECIDES that the ship reporting system, “CORAL SHIPREP”, will enter into force at [0000] hours UTC on [... April 2008], and
3. REQUESTS the Secretary-General to bring this resolution and its Annex to the attention of the Member Governments and SOLAS Contracting Governments to the 1974 SOLAS Convention.

ANNEX

**SHIP REPORTING SYSTEM “CORAL SHIPREP”**

**1 Categories of ships**

**1.1 Ships required to participate in the system**

1.1.1 All ships 300 gross tonnage or greater and all ships in the event of a developing emergency, and that are in transit through the reporting area and as a condition of entry to a United States port or place are required to participate in CORAL SHIPREP, except for sovereign immune vessels which are exempt under SOLAS, Chapter V, regulation 1.

**1.2 Ships recommended to participate in the system**

1.2.1 All ships 300 gross tonnage or greater, fishing vessels, and all ships in the event of a developing emergency, and that are in transit through the reporting area are recommended to participate in CORAL SHIPREP.

**2 Geographical coverage of the system and the number and edition of the reference chart used for the delineation of the system**

2.1 The geographical coverage of CORAL SHIPREP is depicted in the chartlet in annex 1 and the precise geographical co-ordinates are set forth in annex 2.

2.2 The reference charts that include the ship reporting area are United States 19016, 2007 edition, 19019, 2007 edition, and 19022, 2007 edition. These charts are based on World Geodetic System 1984 Datum (WGS-84) and astronomic datum.

**3 Format, content of reports, times and geographical positions for submitting reports, authorities to whom reports should<sup>3</sup> be sent, available services**

*3.1 Format*

3.1.1 The ship report should be drafted in accordance with the format shown in paragraph 2 of the appendix to IMO resolution A.851(20).

*3.2 Content*

3.2.1 The report for a ship entering the system should contain the following information:

System identifier: CORAL SHIPREP

A	Name of the ship, call sign, or IMO identification number
B	Date and Time (UTC)
C or D	Position

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<sup>3</sup> For those ships that are required to report, the use of the word “should” in this annex is to be read as “shall.”

E or F	Course and speed of ship
I	Destination
L	Intended route through the reporting area
O	Vessel draft
P	General categories of hazardous cargo on board
Q or R	Defects or deficiencies, if relevant
T	Contact information of ship's agent or owner
U	Ship size and type (e.g., length, tonnage, and type)
W	Total number of persons on board

3.2.2 The report for a ship leaving the system should contain the following information:

System identifier: CORAL SHIPREP

A	Name of the ship, call sign, or IMO identification number
B	Date and Time (UTC)
C or D	Position

3.2.3 A ship may elect, for reasons of commercial confidentiality, to communicate that section of the report which provides information on general categories of hazardous cargo by non-verbal means prior to entering the reporting area.

### 3.3 *Geographical positions for submitting reports*

3.3.1 Each ship should submit a full report in accordance with paragraph 3.2.1 as soon as it crosses the boundary to enter the ship reporting system.

3.3.2 Each ship should submit a report in accordance with paragraph 3.2.2 as soon as it crosses the boundary to leave the ship reporting system.

3.3.3 Further reports should be made whenever there is a change in navigation status or circumstances, particularly in relation to item Q of the reporting format.

### 3.4 *Authority to whom reports should be sent*

3.4.1 The shore-based authority is the United States Coast Guard's Communication Area Master Station Pacific (CAMSPAC). For ships 300 gross tonnage and greater, an e-mail address to be used for reporting through INMARSAT-C will be provided in advance of implementation of this system through Notices to Mariners. In the event of a developing emergency, ships are urged to call the United States Coast Guard 14th District. Vessels unable to report in through INMARSAT-C should report to [nwhi.notification@noaa.gov](mailto:nwhi.notification@noaa.gov).

#### **4 Information to be provided to ship and procedures to be followed**

4.1 The CORAL SHIPREP Shore-based Authority will provide critical alerts and information to shipping about specific and urgent situations and other information that may affect safety of navigation within the IMO-adopted Areas To Be Avoided and the Papahānaumokuākea Marine National Monument<sup>4</sup>, as well as remind ships about the existence of the IMO-adopted Areas To Be Avoided [and necessity of navigating with extreme caution through the Particularly Sensitive Sea Area].<sup>5</sup>

4.2 Navigational warnings and emergency broadcasts will be issued as NAVTEX messages or specifically directed at GMDSS equipped vessels using INMARSAT-C.

#### **5 Communication required for the system and frequencies on which reports should be transmitted**

5.1 This system will be based on INMARSAT-C and an e-mail and ships equipped with such capabilities should report through INMARSAT-C.

5.2 In the event of a developing emergency, a ship is urged to call the United States Coast Guard 14th District at 808-541-2500 to request a response and assistance.

5.3 For vessels unable to communicate through INMARSAT-C, reports should be made prior to, during, or after transiting through the reporting area to [nwhi.notification@noaa.gov](mailto:nwhi.notification@noaa.gov).

5.4 Commercially sensitive information will be kept confidential and should be transmitted prior to entry into the reporting system. Such information may be sent to [nwhi.notification@noaa.gov](mailto:nwhi.notification@noaa.gov).

5.5 The language used for reports to the system should be English, employing the IMO *Standard Marine Communications Phrases*, where necessary.

5.6 Communications associated with CORAL SHIPREP are, in accordance with SOLAS Chapter V, regulation 11, free of charge to affected vessels.

#### **6 Rules and regulations in force in the area of the system**

##### *6.1 International actions*

6.1.1 The United States has taken appropriate action to implement the international conventions to which it is party including, where appropriate, enacting domestic legislation and promulgating regulations. Relevant laws in force include domestic legislation and regulations to implement the Convention on International Regulations for Preventing Collisions at Sea, 1972, as amended; the International Convention for the Safety of Life at Sea, 1974, as amended; the International Convention for the Prevention of Pollution from Ships, 1973/1978, as amended; the International Convention on Oil Pollution, Preparedness, Response and Co-operation 1990; the International Convention on Maritime Search and Rescue, 1979, as amended; and the Convention on the International Trade in Endangered Species of Wild Fauna and Flora, 1973.

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<sup>4</sup> The words “Particularly Sensitive Sea Area” should be added here after final action is taken by MEPC.

<sup>5</sup> This language will have to be updated after final action is taken by MEPC.



6.1.2 In recognition of the fragile environment in this area and potential hazards to navigation, the IMO has adopted several Areas To Be Avoided to protect the Northwestern Hawaiian Islands [and has designated the area as a Particularly Sensitive Sea Areas where mariners should navigate with extreme caution].<sup>6</sup>

6.1.3 The United States applies its laws in accordance with international law, which includes navigational rights under customary international law as reflected in the United Nations Convention on the Law of the Sea. No restrictions shall apply to or be enforced against foreign flagged vessels unless in accordance with such law.

## 6.2 *Domestic Actions*

6.2.1 The United States has taken considerable action to ensure maritime safety and to protect the fragile environment and cultural resources and areas of cultural importance significant to Native Hawaiians in the NWHI. This area has been the subject of a variety of protective measures, beginning in 1909 when then President Theodore Roosevelt recognized the islands' importance as a seabird nesting ground. Most recently, in June 2006, President George Bush proclaimed this area as the Northwestern Hawaiian Islands Marine National Monument (subsequently renamed the Papahānaumokuākea Marine National Monument) in recognition of its fragility and to protect the many species of coral, fish, birds, marine mammals, and other flora and fauna, including the endangered Hawaiian monk seal, the threatened green sea turtle, and the endangered leatherback and hawksbill sea turtles as well as to protect historical and archaeological heritage resources, including cultural resources and areas of significant importance to Native Hawaiians.

6.2.2 The June 15, 2006 Presidential Proclamation and codifying regulations prohibit taking, possessing, injuring, or disturbing any resource; altering the seabed; anchoring or deserting a vessel; and possessing fishing gear unless stowed. All of these activities may be allowed by permit; however, permits cannot be issued for such things as releasing an introduced species. The Proclamation also prohibits such activities as discharging or depositing any material into the Monument, or discharging or depositing any material outside the Monument that subsequently injures Monument resources, except discharges incidental to vessel use, such as approved marine sanitation device effluent, cooling water, and engine exhaust. The Proclamation also requires the complete phase-out of commercial fishing in the Monument within five years. Subject to the international law point noted above in paragraph 6.1.3, the United States strictly regulates entry into the Monument and, for those vessels subject to United States jurisdiction, requires the mandatory use of vessel monitoring systems on those vessels that may be allowed into the Monument for specific purposes.

## 7 **Shore-based facilities to support operation of the system**

7.1 The shore-based authority is the United States Coast Guard's Communications Area Master Station Pacific (CAMSPAC). CAMSPAC provides maritime distress communication services and safety and weather broadcasts to commercial and recreational mariners, and also provides secure voice communications and record message delivery services for all United States Coast Guard cutters, aircraft, and shore units. Additionally, CAMSPAC is one of the United States Coast Guard's Pacific Area's (PACAREA) Continuity of Operations sites. CAMSPAC delivers contingency and interagency communication services for Incident Commanders by

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<sup>6</sup> This language will have to be updated after final action is taken by MEPC.

deploying a state-of-the-art transportable communications center. CAMSPAC is the Operational Commander of the United States Coast Guard's Pacific Area Communications System, consisting of communication stations in Honolulu Hawaii, Kodiak Alaska, and remote facilities in Guam. There are approximately 150 people assigned to CAMSPAC.

7.2 CORAL SHIPREP will use INMARSAT-C communications equipment. A computer server handles and sorts incoming reports and sends the return message. Incoming reports are text messages that arrive via either internet e-mail or telex. When the ship reporting system server receives a report, the server sends the ship a specific return message. Area coordinators will monitor and update the information to the server for inclusion in the outgoing message.

## **8 Alternative communication if the shore-based facilities fail**

8.1 NAVTEX Broadcast Notice to Mariners may be used to notify mariners of the temporary failure of the system and can provide mariners with basic information necessary to navigate safely through this area.

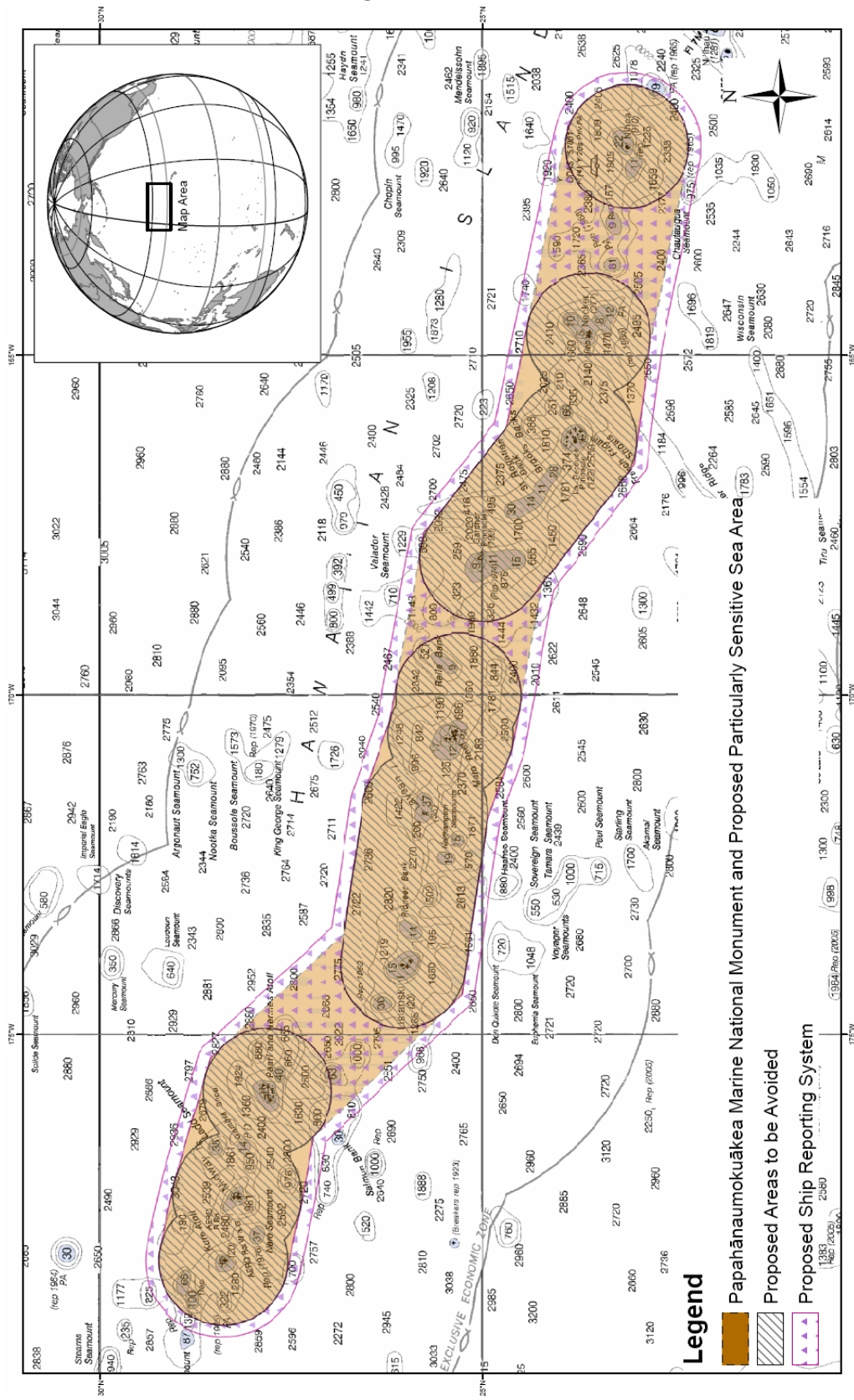
8.2 For those ships reporting through INMARSAT-C, the standard protocol now used for such systems will be used to re-route incoming and outgoing communications through an alternative address and it is expected that this will minimize the system's downtime, though a short delay may occur.

## **9 Measures to be taken if a ship does not report**

9.1.1 The primary objective of the system is to increase maritime safety, protect the environment, preserve cultural resources and areas of cultural importance significant to Native Hawaiians, and facilitate the ability to respond to developing maritime emergencies. All means will be used to encourage and promote the full participation of the ships recommended to submit reports.

9.1.2 If reports are not submitted by those ships required to report and the ship can be positively identified, appropriate action will be taken – including interaction with the flag State – in accordance with customary international law as reflected in the 1982 United Nations Convention on the Law of the Sea.

ANNEX 1  
CHARTLET



ANNEX 2

**GEOGRAPHICAL CO-ORDINATES**

**SHIP REPORTING SYSTEM**

(Reference chart: United States 19016, 2007 edition; 19019, 2007 edition; 19022, 2007 edition. These charts are based on World Geodetic System 1984 (Datum (WGS-84) and astronomic datum.)

**1 Outer Boundary**

Point	LATITUDE	LONGITUDE
1	29°25'.47 N	178°16'.97 W
2	28°43'.73 N	175°13'.84 W
3	27°00'.77 N	173°25'.78 W
4	26°44'.91 N	171°28'.07 W
5	26°24'.23 N	170°20'.59 W
6	25°56'.43 N	167°32'.10 W
7	24°50'.20 N	165°58'.69 W
8	24°05'.52 N	161°56'.86 W
9	24°05'.29 N	161°56'.62 W
10	24°04'.37 N	161°51'.53 W
11	24°03'.44 N	161°46'.45 W
12	24°02'.41 N	161°41'.39 W
13	24°01'.31 N	161°36'.35 W
14	23°59'.68 N	161°31'.55 W
15	23°57'.85 N	161°26'.85 W
16	23°55'.54 N	161°22'.31 W
17	23°52'.96 N	161°17'.92 W
18	23°50'.12 N	161°13'.72 W
19	23°46'.94 N	161°10'.08 W
20	23°43'.49 N	161°06'.47 W
21	23°39'.71 N	161°03'.09 W
22	23°35'.72 N	161°00'.14 W
23	23°31'.59 N	160°57'.46 W
24	23°27'.32 N	160°55'.23 W
25	23°22'.74 N	160°53'.71 W
26	23°18'.29 N	160°52'.17 W
27	23°13'.57 N	160°51'.04 W
28	23°08'.68 N	160°50'.46 W
29	23°03'.70 N	160°50'.17 W
30	22°58'.67 N	160°50'.35 W
31	22°53'.84 N	160°51'.04 W
32	22°49'.11 N	160°52'.20 W
33	22°44'.46 N	160°53'.56 W
34	22°40'.03 N	160°55'.52 W
35	22°35'.73 N	160°57'.68 W
36	22°31'.54 N	161°00'.25 W
37	22°27'.57 N	161°03'.23 W

38	22°23'.76 N	161°06'.64 W
39	22°20'.24 N	161°10'.23 W
40	22°17'.02 N	161°14'.13 W
41	22°14'.04 N	161°18'.34 W
42	22°11'.35 N	161°22'.80 W
43	22°09'.19 N	161°27'.45 W
44	22°07'.29 N	161°32'.11 W
45	22°05'.87 N	161°36'.94 W
46	22°04'.62 N	161°41'.89 W
47	22°03'.94 N	161°47'.09 W
48	22°03'.41 N	161°52'.36 W
49	22°03'.41 N	161°57'.51 W
50	22°03'.82 N	162°02'.83 W
51	22°04'.49 N	162°08'.04 W
52	22°05'.43 N	162°13'.12 W
53	22°05'.97 N	162°16'.41 W
54	22°06'.29 N	162°16'.85 W
55	22°34'.57 N	164°47'.27 W
56	22°47'.60 N	166°38'.23 W
57	24°03'.82 N	168°27'.91 W
58	24°25'.76 N	170°45'.39 W
59	24°46'.54 N	171°53'.03 W
60	25°07'.60 N	174°28'.71 W
61	27°05'.82 N	176°35'.51 W
62	27°27'.32 N	178°38'.66 W
63	27°28'.93 N	178°43'.56 W
64	27°30'.64 N	178°48'.40 W
65	27°32'.74 N	178°52'.96 W
66	27°35'.06 N	178°57'.30 W
67	27°37'.89 N	179°01'.49 W
68	27°40'.90 N	179°05'.60 W
69	27°44'.17 N	179°09'.41 W
70	27°47'.74 N	179°12'.85 W
71	27°51'.45 N	179°16'.00 W
72	27°55'.32 N	179°18'.82 W

73	27°59'.33 N	179°21'.13 W
74	28°03'.49 N	179°23'.15 W
75	28°07'.82 N	179°24'.76 W
76	28°12'.31 N	179°26'.18 W
77	28°16'.95 N	179°27'.05 W
78	28°21'.61 N	179°27'.63 W
79	28°26'.18 N	179°27'.77 W
80	28°30'.87 N	179°27'.48 W
81	28°35'.61 N	179°26'.95 W
82	28°40'.09 N	179°25'.75 W
83	28°44'.46 N	179°24'.31 W
84	28°48'.70 N	179°22'.50 W
85	28°52'.81 N	179°20'.43 W
86	28°56'.71 N	179°17'.77 W

87	29°00'.58 N	179°14'.92 W
88	29°04'.18 N	179°11'.69 W
89	29°07'.62 N	179°08'.20 W
90	29°10'.86 N	179°04'.37 W
91	29°13'.76 N	179°00'.21 W
92	29°16'.24 N	178°55'.78 W
93	29°18'.51 N	178°51'.26 W
94	29°20'.45 N	178°46'.50 W
95	29°22'.26 N	178°41'.67 W
96	29°23'.52 N	178°36'.64 W
97	29°24'.53 N	178°31'.54 W
98	29°25'.16 N	178°26'.31 W
99	29°25'.42 N	178°20'.92 W
100	29°25'.29 N	178°16'.70 W

## 2 Inner Boundary Around Kure Atoll, Midway Atoll, and Pearl and Hermes Atoll

Point	LATITUDE	LONGITUDE
1	27°14'.76 N	176°29'.87 W
2	27°24'.95 N	177°33'.31 W
3	27°35'.87 N	178°29'.90 W
4	27°36'.64 N	178°33'.93 W
5	27°37'.53 N	178°37'.32 W
6	27°38'.60 N	178°40'.65 W
7	27°39'.85 N	178°43'.90 W
8	27°41'.28 N	178°47'.05 W
9	27°42'.89 N	178°50'.10 W
10	27°44'.66 N	178°53'.03 W
11	27°46'.59 N	178°55'.83 W
12	27°48'.67 N	178°58'.49 W
13	27°50'.89 N	179°01'.00 W
14	27°53'.22 N	179°03'.39 W
15	27°55'.69 N	179°05'.61 W
16	27°58'.29 N	179°07'.61 W
17	28°01'.01 N	179°09'.47 W
18	28°03'.81 N	179°11'.10 W
19	28°06'.71 N	179°12'.53 W
20	28°09'.67 N	179°13'.75 W
21	28°12'.70 N	179°14'.75 W
22	28°15'.78 N	179°15'.54 W
23	28°18'.91 N	179°16'.11 W
24	28°22'.04 N	179°16'.45 W
25	28°24'.72 N	179°16'.56 W
26	28°25'.20 N	179°16'.57 W
27	28°25'.81 N	179°16'.56 W
28	28°28'.35 N	179°16'.44 W
29	28°31'.49 N	179°16'.10 W
30	28°34'.61 N	179°15'.54 W

31	28°37'.69 N	179°14'.75 W
32	28°40'.71 N	179°13'.74 W
33	28°43'.68 N	179°12'.54 W
34	28°46'.58 N	179°11'.13 W
35	28°49'.39 N	179°09'.52 W
36	28°52'.11 N	179°07'.70 W
37	28°54'.72 N	179°05'.70 W
38	28°57'.21 N	179°03'.51 W
39	28°59'.58 N	179°01'.15 W
40	29°01'.81 N	178°58'.62 W
41	29°03'.90 N	178°55'.93 W
42	29°05'.83 N	178°53'.10 W
43	29°07'.60 N	178°50'.13 W
44	29°09'.21 N	178°47'.04 W
45	29°10'.64 N	178°43'.84 W
46	29°11'.89 N	178°40'.54 W
47	29°12'.95 N	178°37'.16 W
48	29°13'.82 N	178°33'.71 W
49	29°14'.50 N	178°30'.21 W
50	29°14'.99 N	178°26'.66 W
51	29°15'.28 N	178°23'.08 W
52	29°15'.36 N	178°19'.49 W
53	29°15'.25 N	178°15'.90 W
54	29°14'.94 N	178°12'.32 W
55	29°14'.43 N	178°08'.78 W
56	29°03'.47 N	177°12'.07 W
57	29°02'.55 N	177°07'.29 W
58	28°38'.96 N	175°35'.47 W
59	28°38'.67 N	175°34'.35 W

60	28°34'.91 N	175°19'.74 W
61	28°26'.24 N	175°10'.65 W
62	28°24'.61 N	175°08'.95 W
63	28°24'.53 N	175°09'.04 W
64	28°20'.09 N	175°04'.91 W
65	28°16'.05 N	175°01'.92 W
66	28°11'.78 N	174°59'.33 W
67	28°07'.29 N	174°57'.23 W
68	28°02'.63 N	174°55'.68 W
69	27°57'.84 N	174°54'.62 W
70	27°53'.01 N	174°54'.05 W
71	27°48'.12 N	174°54'.05 W
72	27°43'.28 N	174°54'.62 W
73	27°38'.48 N	174°55'.71 W
74	27°33'.81 N	174°57'.32 W
75	27°29'.30 N	174°59'.43 W
76	27°25'.00 N	175°02'.03 W
77	27°20'.93 N	175°05'.07 W

78	27°17'.18 N	175°08'.59 W
79	27°13'.73 N	175°12'.47 W
80	27°10'.59 N	175°16'.67 W
81	27°07'.88 N	175°21'.25 W
82	27°05'.57 N	175°26'.09 W
83	27°03'.66 N	175°31'.15 W
84	27°02'.22 N	175°36'.40 W
85	27°01'.29 N	175°41'.78 W
86	27°00'.73 N	175°47'.22 W
87	27°00'.68 N	175°52'.74 W
88	27°01'.09 N	175°58'.16 W
89	27°01'.99 N	176°03'.53 W
90	27°03'.34 N	176°08'.81 W
91	27°05'.12 N	176°13'.91 W
92	27°07'.37 N	176°18'.79 W
93	27°09'.98 N	176°23'.40 W
94	27°13'.02 N	176°27'.74 W
95	27°13'.77 N	176°28'.70 W

### 3 Inner Boundary Around Lisianski Island, Laysan Island, Maro Reef, and Raita Bank

Point	LATITUDE	LONGITUDE
1	26°50'.89 N	173°30'.79 W
2	26°36'.00 N	171°37'.70 W
3	26°35'.49 N	171°33'.84 W
4	26°35'.10 N	171°30'.84 W
5	26°34'.07 N	171°27'.50 W
6	26°33'.35 N	171°25'.16 W
7	26°14'.26 N	170°23'.04 W
8	26°08'.69 N	169°48'.96 W
9	26°08'.36 N	169°49'.03 W
10	26°07'.62 N	169°45'.83 W
11	26°06'.03 N	169°40'.57 W
12	26°03'.97 N	169°35'.64 W
13	26°01'.51 N	169°30'.91 W
14	25°58'.65 N	169°26'.45 W
15	25°55'.32 N	169°22'.34 W
16	25°51'.67 N	169°18'.60 W
17	25°47'.78 N	169°15'.19 W
18	25°43'.54 N	169°12'.34 W
19	25°39'.05 N	169°09'.93 W
20	25°34'.37 N	169°08'.08 W
21	25°29'.54 N	169°06'.76 W
22	25°24'.61 N	169°05'.93 W
23	25°19'.63 N	169°05'.64 W
24	25°14'.65 N	169°05'.93 W

25	25°09'.69 N	169°06'.66 W
26	25°04'.85 N	169°08'.02 W
27	25°00'.17 N	169°09'.96 W
28	24°55'.66 N	169°12'.35 W
29	24°51'.35 N	169°15'.14 W
30	24°47'.37 N	169°18'.48 W
31	24°43'.69 N	169°22'.22 W
32	24°40'.34 N	169°26'.31 W
33	24°37'.42 N	169°30'.78 W
34	24°35'.00 N	169°35'.64 W
35	24°33'.02 N	169°40'.66 W
36	24°31'.34 N	169°45'.88 W
37	24°30'.31 N	169°51'.08 W
38	24°29'.68 N	169°56'.53 W
39	24°29'.56 N	170°01'.81 W
40	24°29'.61 N	170°04'.57 W
41	24°35'.77 N	170°44'.39 W
42	24°36'.29 N	170°47'.58 W
43	24°37'.18 N	170°50'.37 W
44	24°37'.76 N	170°52'.17 W
45	24°56'.23 N	171°50'.19 W
46	25°16'.61 N	174°24'.84 W
47	25°29'.56 N	174°38'.45 W
48	25°33'.28 N	174°42'.03 W
49	25°37'.33 N	174°45'.20 W

50	25°41'.68 N	174°47'.84 W
51	25°46'.23 N	174°50'.05 W
52	25°50'.93 N	174°51'.77 W
53	25°55'.80 N	174°52'.91 W
54	26°00'.71 N	174°53'.47 W
55	26°05'.67 N	174°53'.61 W
56	26°10'.59 N	174°53'.07 W
57	26°15'.46 N	174°52'.08 W
58	26°20'.20 N	174°50'.57 W
59	26°24'.75 N	174°48'.44 W
60	26°29'.15 N	174°45'.94 W
61	26°33'.26 N	174°42'.96 W
62	26°37'.11 N	174°39'.49 W
63	26°40'.60 N	174°35'.63 W
64	26°43'.75 N	174°31'.43 W

65	26°46'.49 N	174°26'.87 W
66	26°48'.90 N	174°22'.09 W
67	26°50'.79 N	174°17'.03 W
68	26°52'.20 N	174°11'.79 W
69	26°53'.21 N	174°06'.43 W
70	26°53'.74 N	174°00'.98 W
71	26°53'.74 N	173°55'.48 W
72	26°53'.29 N	173°50'.02 W
73	26°52'.56 N	173°44'.58 W
74	26°51'.85 N	173°39'.14 W
75	26°51'.13 N	173°33'.69 W
76	26°50'.75 N	173°30'.87 W

**4 Inner Boundary Around Gardner Pinnacles, French Frigate Shoals, and Necker Island**

Point	LATITUDE	LONGITUDE
1	25°49'.64 N	167°52'.66 W
2	25°49'.70 N	167°52'.65 W
3	25°48'.99 N	167°48'.35 W
4	25°47'.09 N	167°36'.72 W
5	25°39'.84 N	167°26'.48 W
6	25°35'.10 N	167°19'.79 W
7	25°10'.43 N	166°45'.00 W
8	24°40'.91 N	166°03'.36 W
9	24°35'.64 N	165°34'.99 W
10	24°23'.78 N	164°31'.12 W
11	24°23'.59 N	164°31'.14 W
12	24°23'.31 N	164°29'.74 W
13	24°21'.85 N	164°24'.52 W
14	24°20'.10 N	164°19'.39 W
15	24°17'.75 N	164°14'.56 W
16	24°14'.99 N	164°09'.97 W
17	24°11'.86 N	164°05'.69 W
18	24°08'.30 N	164°01'.80 W
19	24°04'.48 N	163°58'.23 W
20	24°00'.27 N	163°55'.22 W
21	23°55'.85 N	163°52'.59 W
22	23°51'.17 N	163°50'.56 W
23	23°46'.33 N	163°48'.98 W
24	23°41'.37 N	163°47'.99 W
25	23°36'.34 N	163°47'.56 W
26	23°31'.27 N	163°47'.60 W
27	23°26'.27 N	163°48'.28 W
28	23°21'.34 N	163°49'.50 W

29	23°16'.53 N	163°51'.14 W
30	23°11'.96 N	163°53'.47 W
31	23°07'.54 N	163°56'.15 W
32	23°03'.46 N	163°59'.38 W
33	22°59'.65 N	164°03'.01 W
34	22°56'.27 N	164°07'.10 W
35	22°53'.22 N	164°11'.49 W
36	22°50'.60 N	164°16'.18 W
37	22°48'.48 N	164°21'.16 W
38	22°46'.73 N	164°26'.28 W
39	22°45'.49 N	164°31'.60 W
40	22°44'.83 N	164°37'.03 W
41	22°44'.65 N	164°42'.51 W
42	22°44'.92 N	164°47'.99 W
43	22°45'.11 N	164°49'.52 W
44	22°45'.39 N	164°51'.48 W
45	22°45'.17 N	164°51'.53 W
46	22°50'.26 N	165°34'.99 W
47	22°55'.50 N	166°19'.63 W
48	22°55'.93 N	166°23'.32 W
49	22°57'.41 N	166°36'.00 W
50	23°03'.75 N	166°45'.00 W
51	23°05'.48 N	166°47'.45 W
52	24°12'.70 N	168°22'.86 W
53	24°12'.88 N	168°22'.78 W
54	24°16'.05 N	168°27'.28 W
55	24°19'.15 N	168°31'.66 W

56	24°22'.27 N	168°35'.95 W
57	24°25'.71 N	168°39'.94 W
58	24°29'.51 N	168°43'.55 W
59	24°33'.67 N	168°46'.63 W
60	24°38'.06 N	168°49'.29 W
61	24°42'.68 N	168°51'.46 W
62	24°47'.45 N	168°53'.12 W
63	24°52'.34 N	168°54'.28 W
64	24°57'.32 N	168°54'.82 W
65	25°02'.32 N	168°54'.95 W
66	25°07'.30 N	168°54'.43 W
67	25°12'.19 N	168°53'.32 W
68	25°16'.99 N	168°51'.76 W

69	25°21'.57 N	168°49'.60 W
70	25°25'.94 N	168°46'.93 W
71	25°30'.09 N	168°43'.86 W
72	25°33'.89 N	168°40'.42 W
73	25°37'.37 N	168°36'.52 W
74	25°40'.49 N	168°32'.24 W
75	25°43'.24 N	168°27'.68 W
76	25°45'.57 N	168°22'.82 W
77	25°47'.43 N	168°17'.76 W
78	25°48'.79 N	168°12'.47 W
79	25°49'.72 N	168°07'.09 W
80	25°50'.11 N	168°01'.62 W
81	25°50'.18 N	168°00'.09 W

## 5 Inner Boundary Around Nihoa Island

Point	LATITUDE	LONGITUDE
1	23°52'.82 N	161°44'.54 W
2	23°52'.10 N	161°41'.20 W
3	23°51'.18 N	161°37'.92 W
4	23°50'.08 N	161°34'.71 W
5	23°48'.79 N	161°31'.58 W
6	23°47'.33 N	161°28'.55 W
7	23°45'.69 N	161°25'.62 W
8	23°43'.88 N	161°22'.81 W
9	23°41'.92 N	161°20'.13 W
10	23°39'.80 N	161°17'.60 W
11	23°37'.54 N	161°15'.21 W
12	23°35'.14 N	161°12'.99 W
13	23°32'.62 N	161°10'.93 W
14	23°29'.99 N	161°09'.05 W
15	23°27'.25 N	161°07'.35 W
16	23°24'.42 N	161°05'.85 W
17	23°21'.51 N	161°04'.54 W
18	23°18'.52 N	161°03'.43 W
19	23°15'.48 N	161°02'.53 W
20	23°12'.39 N	161°01'.84 W
21	23°09'.27 N	161°01'.35 W
22	23°06'.13 N	161°01'.09 W
23	23°02'.97 N	161°01'.03 W
24	22°59'.82 N	161°01'.19 W
25	22°56'.69 N	161°01'.57 W
26	22°53'.58 N	161°02'.15 W
27	22°50'.51 N	161°02'.95 W
28	22°47'.50 N	161°03'.95 W
29	22°44'.55 N	161°05'.15 W
30	22°41'.67 N	161°06'.54 W

31	22°38'.88 N	161°08'.13 W
32	22°36'.19 N	161°09'.90 W
33	22°33'.61 N	161°11'.85 W
34	22°31'.14 N	161°13'.97 W
35	22°28'.81 N	161°16'.25 W
36	22°26'.61 N	161°18'.69 W
37	22°24'.56 N	161°21'.26 W
38	22°22'.66 N	161°23'.97 W
39	22°20'.92 N	161°26'.80 W
40	22°19'.35 N	161°29'.74 W
41	22°17'.95 N	161°32'.78 W
42	22°16'.73 N	161°35'.90 W
43	22°15'.70 N	161°39'.10 W
44	22°14'.85 N	161°42'.37 W
45	22°14'.20 N	161°45'.68 W
46	22°13'.73 N	161°49'.03 W
47	22°13'.47 N	161°52'.41 W
48	22°13'.40 N	161°55'.80 W
49	22°13'.53 N	161°59'.18 W
50	22°13'.85 N	162°02'.55 W
51	22°14'.31 N	162°05'.45 W
52	22°14'.37 N	162°05'.89 W
53	22°14'.59 N	162°06'.88 W
54	22°15'.87 N	162°12'.18 W
55	22°17'.70 N	162°17'.31 W
56	22°19'.97 N	162°22'.20 W
57	22°22'.73 N	162°26'.84 W
58	22°25'.88 N	162°31'.15 W
59	22°29'.41 N	162°35'.09 W



60	22°33'.28 N	162°38'.61 W
61	22°37'.47 N	162°41'.72 W
62	22°41'.93 N	162°44'.34 W
63	22°46'.63 N	162°46'.47 W
64	22°51'.48 N	162°48'.05 W
65	22°56'.46 N	162°49'.09 W
66	23°01'.50 N	162°49'.58 W
67	23°06'.58 N	162°49'.49 W
68	23°11'.61 N	162°48'.89 W
69	23°16'.57 N	162°47'.70 W
70	23°21'.36 N	162°45'.98 W
71	23°26'.02 N	162°43'.75 W
72	23°30'.40 N	162°41'.01 W

73	23°34'.51 N	162°37'.83 W
74	23°38'.26 N	162°34'.18 W
75	23°41'.69 N	162°30'.18 W
76	23°44'.72 N	162°25'.79 W
77	23°47'.36 N	162°21'.11 W
78	23°49'.55 N	162°16'.16 W
79	23°51'.24 N	162°10'.99 W
80	23°52'.44 N	162°05'.63 W
81	23°53'.14 N	162°00'.25 W
82	23°53'.36 N	161°54'.75 W
83	23°53'.09 N	161°49'.28 W
84	23°52'.82 N	161°47'.09 W
85	23°52'.39 N	161°44'.67 W

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