



**WESTERN
PACIFIC
REGIONAL
FISHERY
MANAGEMENT
COUNCIL**

Draft Supplemental Options Paper

Non-commercial Fishing Regulations in the Rose Atoll, Marianas Trench, and Pacific Remote Islands Marine National Monuments

Draft Amendments to the American Samoa Archipelago, Mariana Archipelago, Pacific Remote Island Areas, and Pacific Pelagics Fishery Ecosystem Plans

**153rd Council Meeting
March 5-9, 2012**

I. Introduction

In January 2009, former President George W. Bush established, by Presidential Proclamations, three Marine National Monuments (together, *Monuments*; singular *MNM*) in the Western Pacific Region. Proclamations 8335, 8336, 8337 (together *Proclamations*) establish the following: Rose Atoll MNM in American Samoa, Marianas Trench MNM in the Marianas Archipelago, the Pacific Remote Islands MNM in the U.S. Pacific Remote Island Areas (PRIA). In all three Proclamations, the Secretaries of Commerce and Interior (Secretaries) are instructed to prohibit commercial fishing within the boundaries of each Monument, while allowing certain non-commercial fishing activities to occur. Examples of allowable non-commercial fishing activities include sustenance, traditional indigenous and recreational fishing.

In designating the Rose Atoll MNM, Proclamation 8337 provides that the Secretaries may permit *non-commercial and sustenance fishing* and after consultation with the American Samoa government, may permit *traditional indigenous fishing* within the Rose Atoll MNM.

Proclamation 8335, which established the Marianas Trench MNM, instructed the Secretaries to prohibit commercial fishing in the Islands Unit and to ensure that any *sustenance, recreational, or traditional indigenous fishing* in the Islands Unit be managed as a sustainable activity. The proclamation also provides that Monument management plans shall provide for *traditional access by indigenous persons*, as identified by the Secretaries in consultation with the government of the Commonwealth of Northern Mariana Islands (CNMI), *for culturally significant subsistence, cultural and religious uses* within the Islands Unit.

Proclamation 8336, which established the Pacific Remote Islands Area MMN, states that *non-commercial fishing* may be permitted and directs that any *recreational fishing* be sustainable.

As identified in the Proclamations, the Secretary of Commerce (acting through NOAA) and in consultation with the Secretary of Interior, has primary management responsibility of fishery

related activities pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSA; 16 U.S.C. 1801 et seq.). In following the MSA to recommend fishing regulations for the Monuments, the Western Pacific Regional Fishery Management Council (Council) undertook a lengthy process beginning shortly after the Monuments were established in early 2009.

Beginning in March 2009 in American Samoa, the Council initiated its process to develop management recommendations and regulations for non-commercial fishing in the Monuments. Between March 2009 and June 2010, several public meetings were held in American Samoa, Guam, and CNMI to discuss potential management options as well as meetings of the Council's advisory panels, plan teams, and Regional Ecosystem Advisory Committees in each of these locations. The Council's Science and Statistical Committee also considered management options at its meetings between March 2009 and June 2010. At its 148th meeting, held June 28-July 1, 2010 in Honolulu, the Council took final action on fishery management measures for the Monuments and recommended amendments to its Marianas Archipelago Fishery Ecosystem Plan, American Samoa Archipelago Fishery Ecosystem Plan, Pacific Remote Island Areas Fishery Ecosystem Plan, and Pacific Pelagics Fishery Ecosystem Plan including associated proposed relations (See Appendices II and III for Council recommendations and proposed fishing regulations, respectively).

II. Purpose and Need

On September 28, 2011 (over a year after the Council provided NMFS its FEP amendments document for review), the Council received a letter (Appendix I) from Michael Tosatto, NMFS PIRO Regional Administrator, indicating that NOAA has reviewed the Council's Draft Fishery Ecosystem Plan (FEP) Amendments on Fishery Management Measures for the Rose Atoll, Marianas Trench, and Pacific Remote Island Area MNMs. The letter states, amongst other things, that the draft measures provide a basis for identifying customary exchange as important to traditional ingenious fishing in the region; however, the reviewed draft does not identify adequate safeguards to ensure that the practice of customary exchange does not blur the line of commercial fishing. The letter suggests that the Council consider revising the definition of customary exchange to exclude, or clearly limit, cost recovery of trip expenses as well as consider imposing bag limits for non-commercial fishing. Also the letter suggests that the Council may want to clarify the definition of "non-commercial" to specify that traditional indigenous fishing is limited to traditional and culturally significant fishing practices in existence within the fishing community of American Samoa and the Marianas Archipelago at the time the Proclamations were established. In addition, the letter expresses NMFS' concern that the Council's recommendations to establish 0-12 nm no-take (no-fishing) areas around the PRIA conflicts with the Proclamation. On this topic, NMFS has suggested that the Council consider making that clear in its recommendation that the no-take zones within the PRI Monument are subject to FWS authority to issue permits for non-commercial fishing in consultation with NOAA.

To address NMFS' letter, the Council is considering several supplemental options related to limits on cash reimbursements, bag limits¹, definitional timeframe for traditional indigenous fishing, and jurisdictional issues in the PRIMNM.

¹ Bag limits are often synonymous with trip harvest limits.

III. Maps of the Rose Atoll, Marianas Trench, and Pacific Remote Islands Monuments

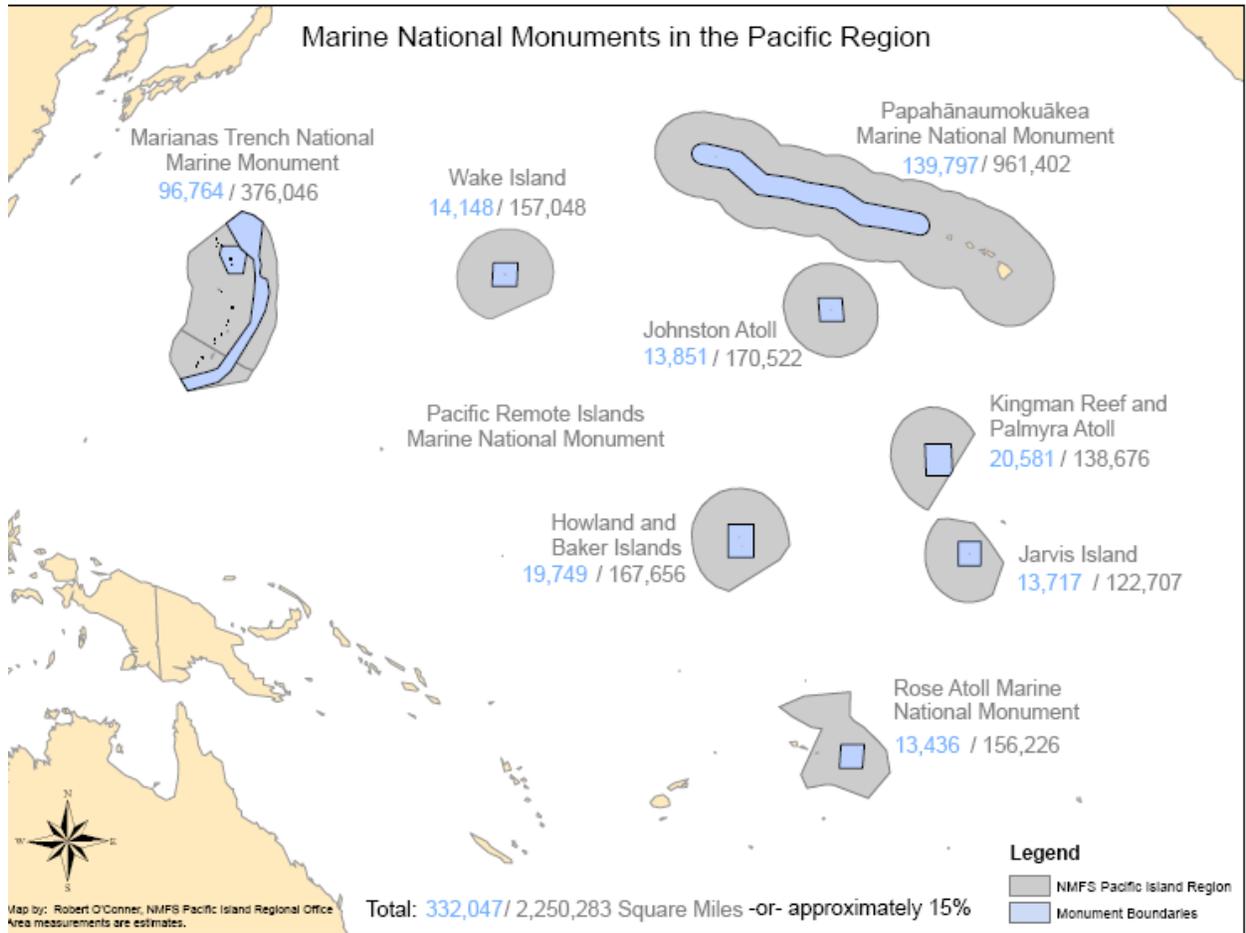


Figure 1: Marine National Monuments in the U.S. Pacific Islands Region

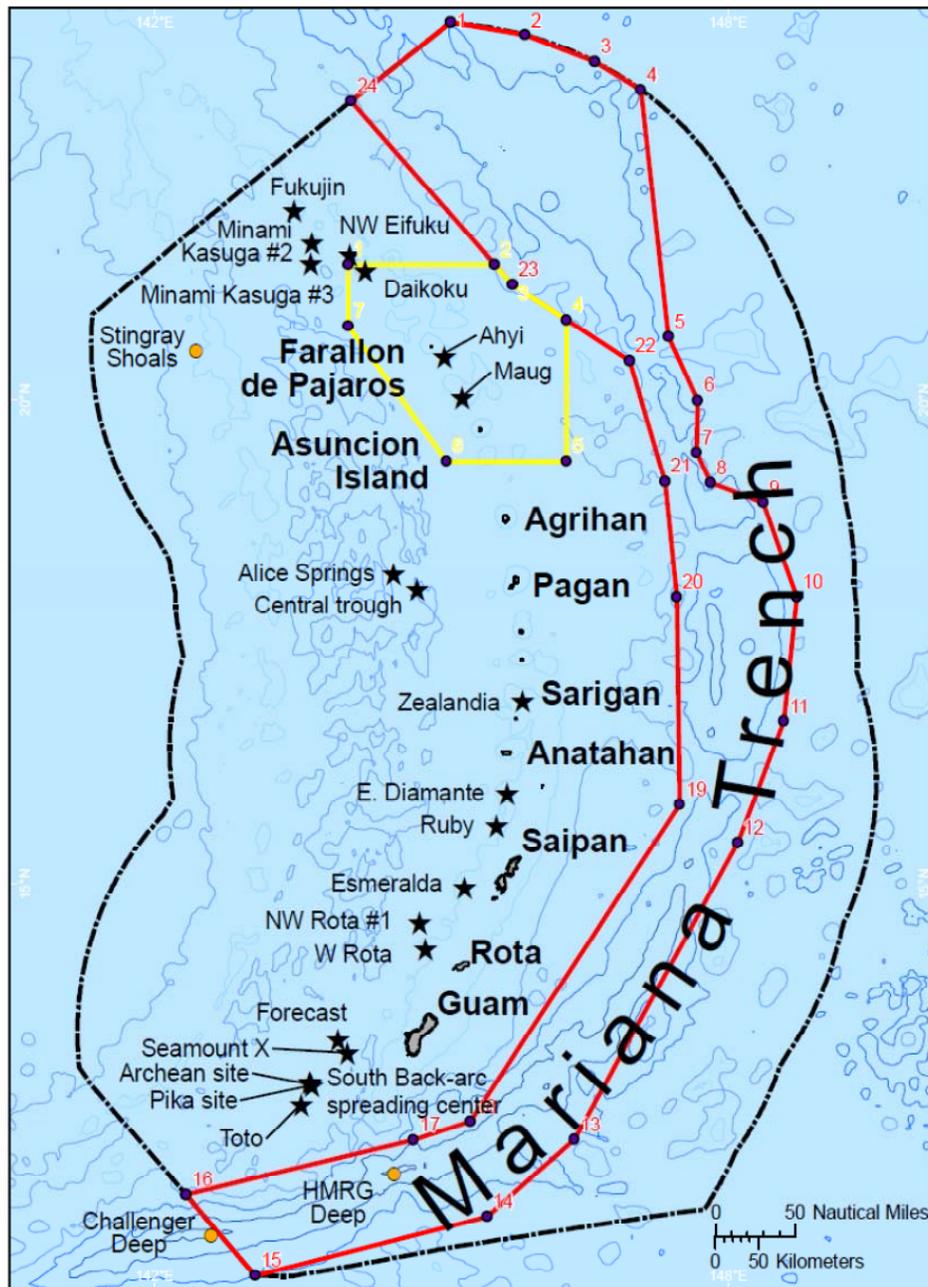


Figure 2: Map of Marianas Archipelago delineating Marianas Trench MNM

Note: Islands Unit shown in yellow. The distance from Saipan to Asuncion is approximately 260 nm; Saipan to Uracus/Farallon de Pajaros is approximately 315 nm.

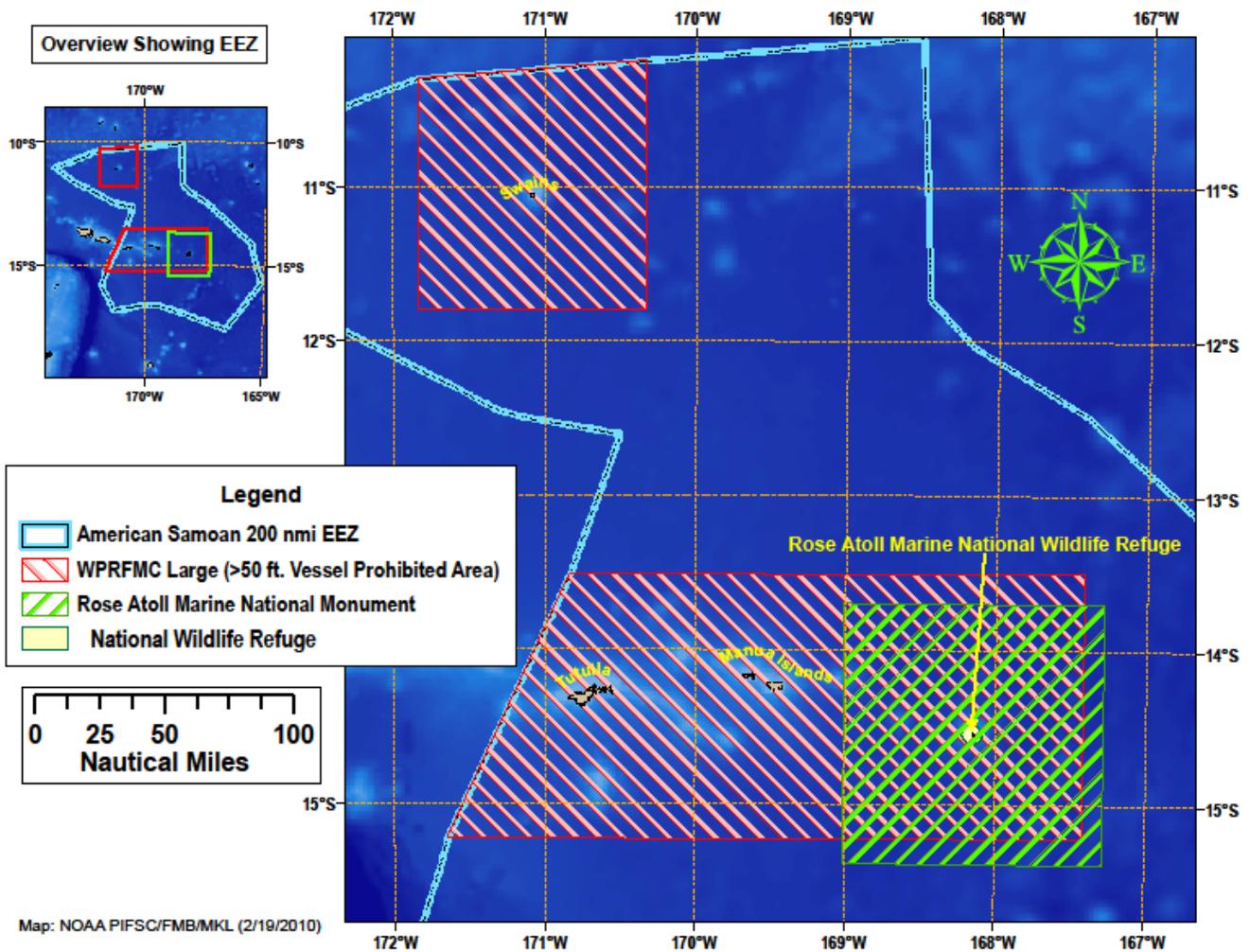


Figure 3: Map of American Samoa Archipelago showing Rose Atoll MNM and Large Vessel Prohibited Areas

Note: The distance from the Manua Islands to Rose Atoll is approximately 75 nm. Tutuila to Rose Atoll is approximately 145 nm.

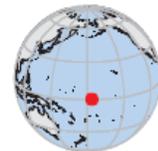
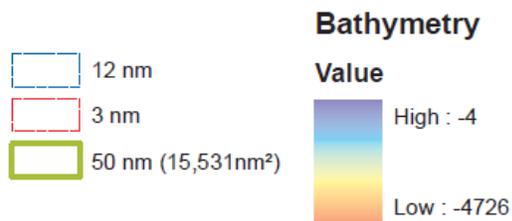
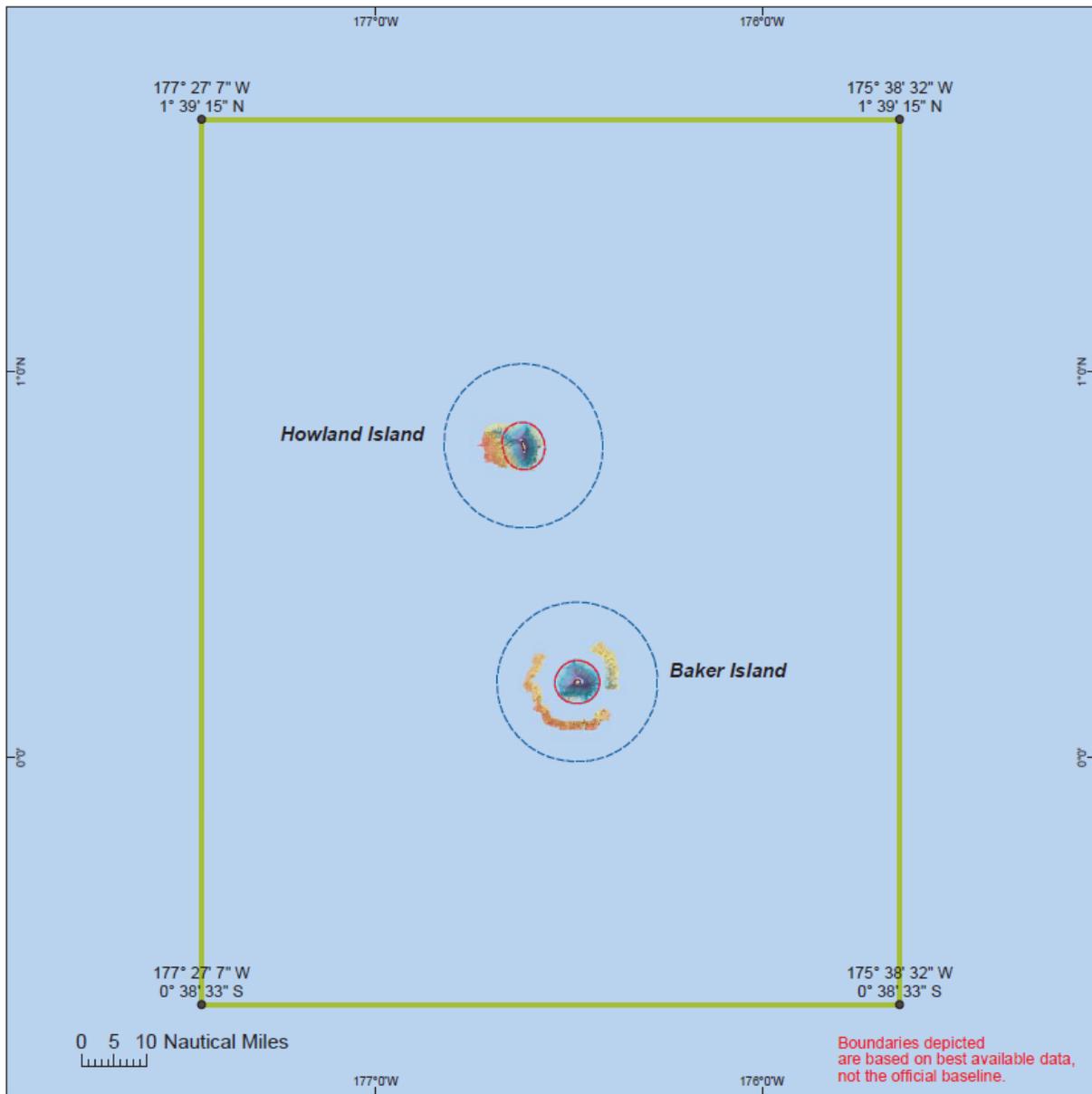


Figure 4: Map Howland and Baker Islands
 Note: green line delineates MNM boundary

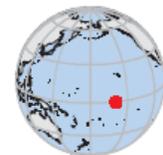
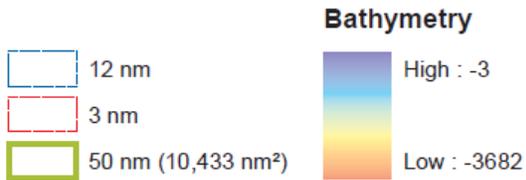
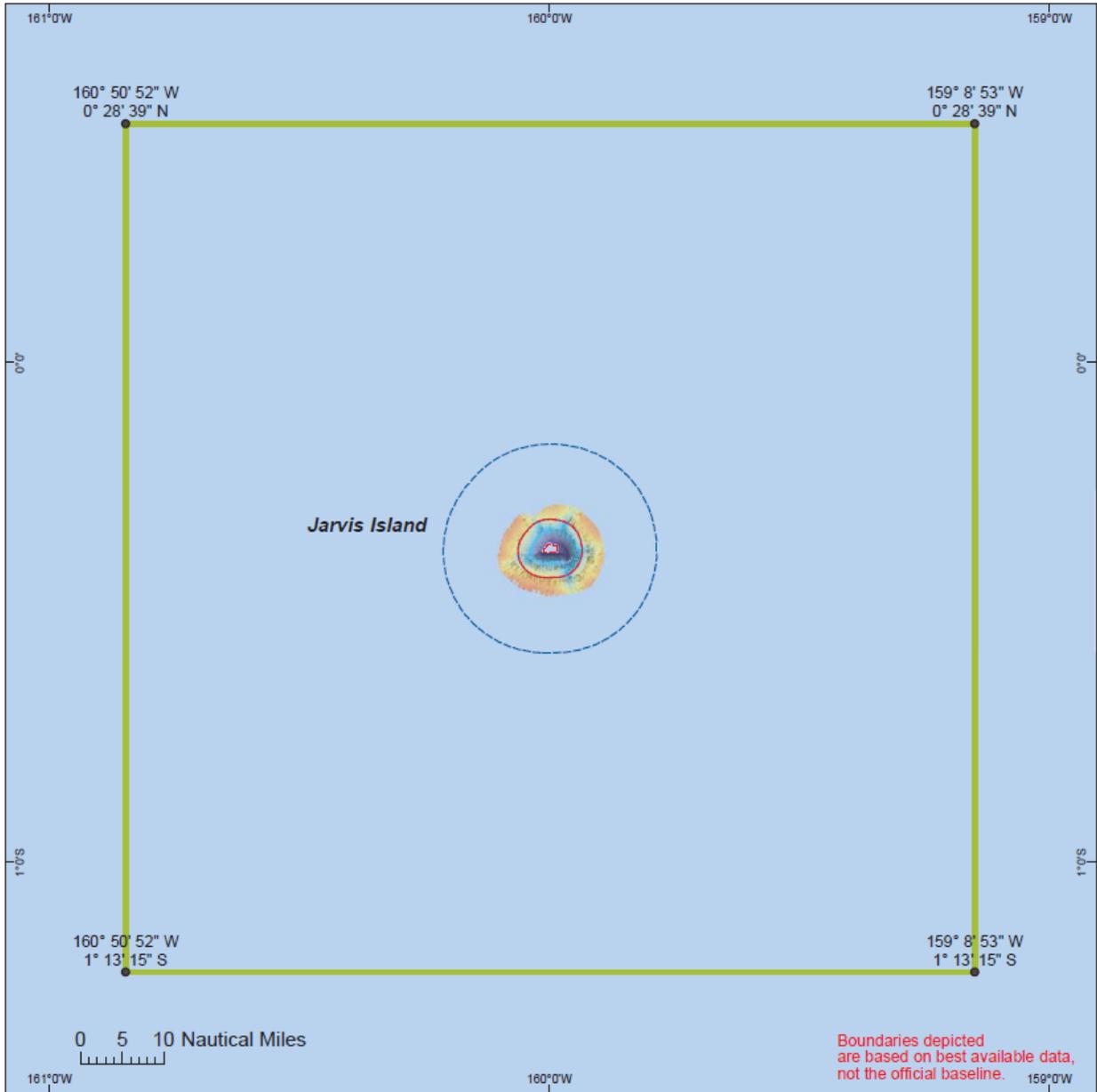
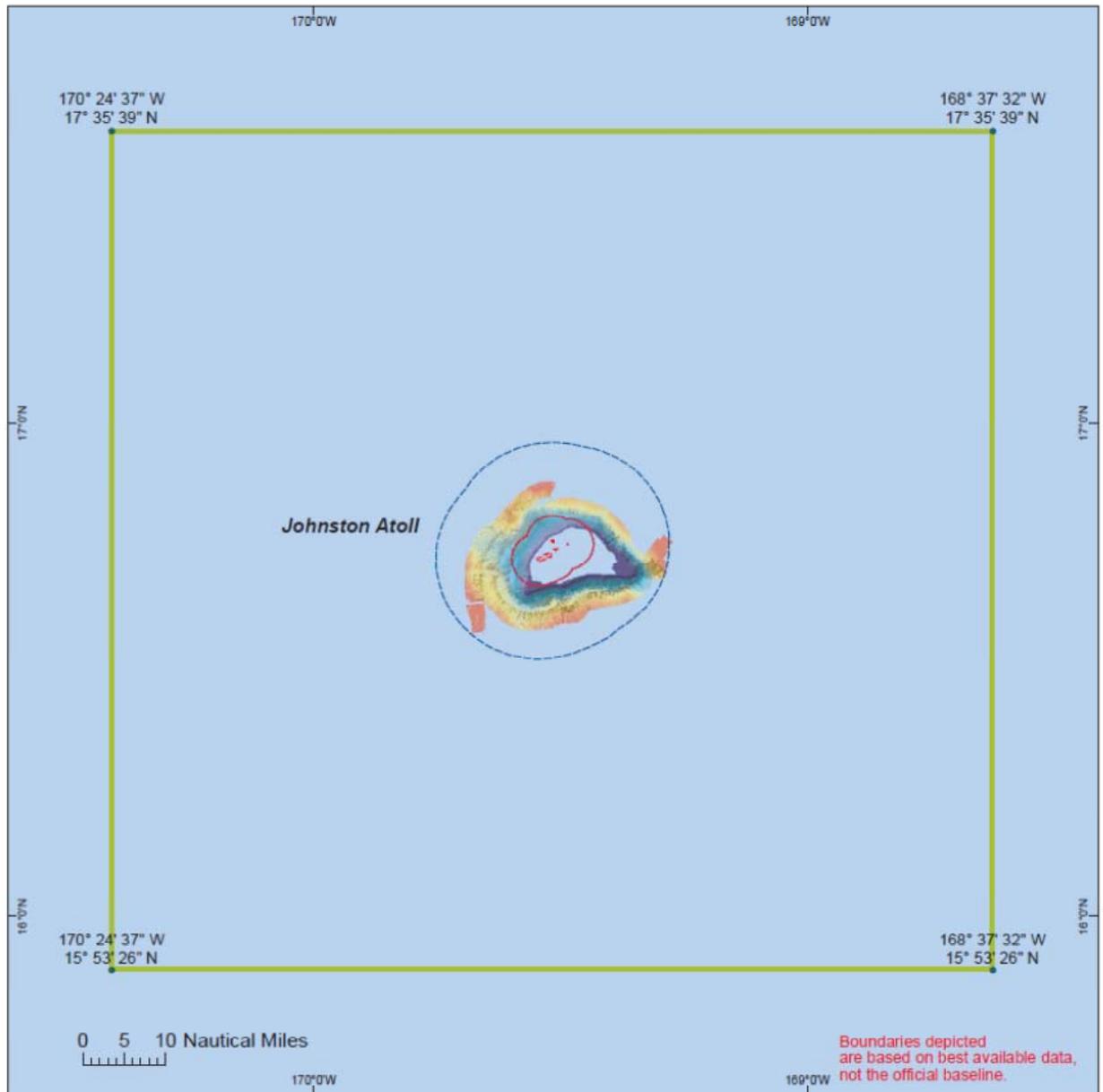


Figure 3: Map of Jarvis Island
 Note: green line delineates MNM boundary



Buffer

- 12 nm
- 3 nm
- 50 nm (10,513 nm²)

Bathymetry



Figure 5: Map of Johnston Atoll
 Note: green line delineates MNM boundary

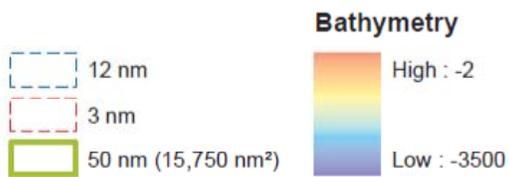
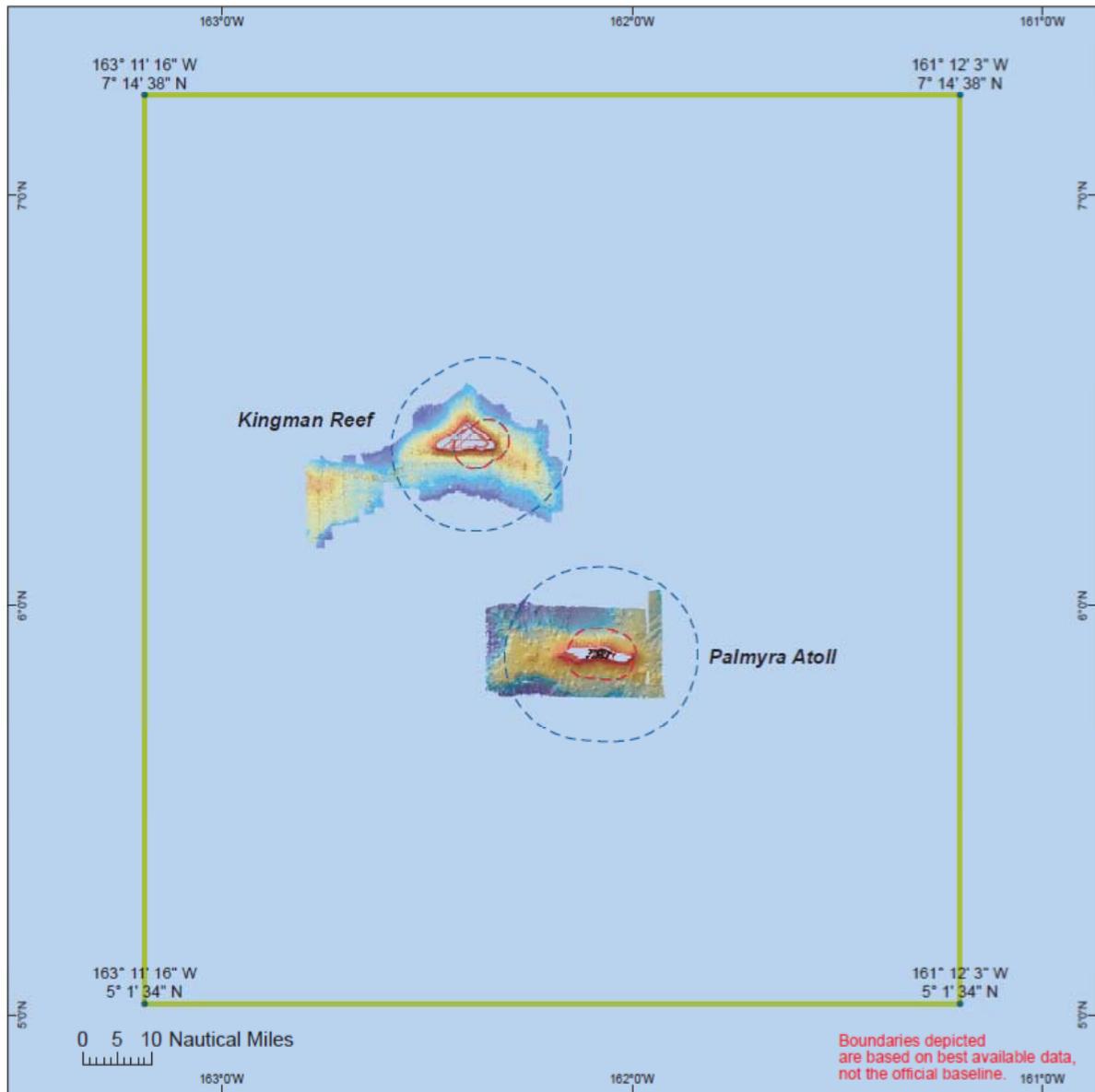


Figure 6: Map of Kingman Reef and Palmyra Atoll

Note: green line delineates MNM boundary

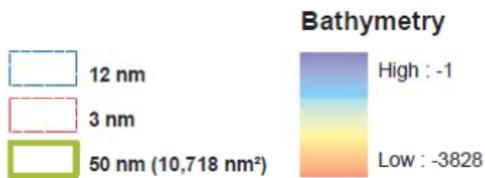
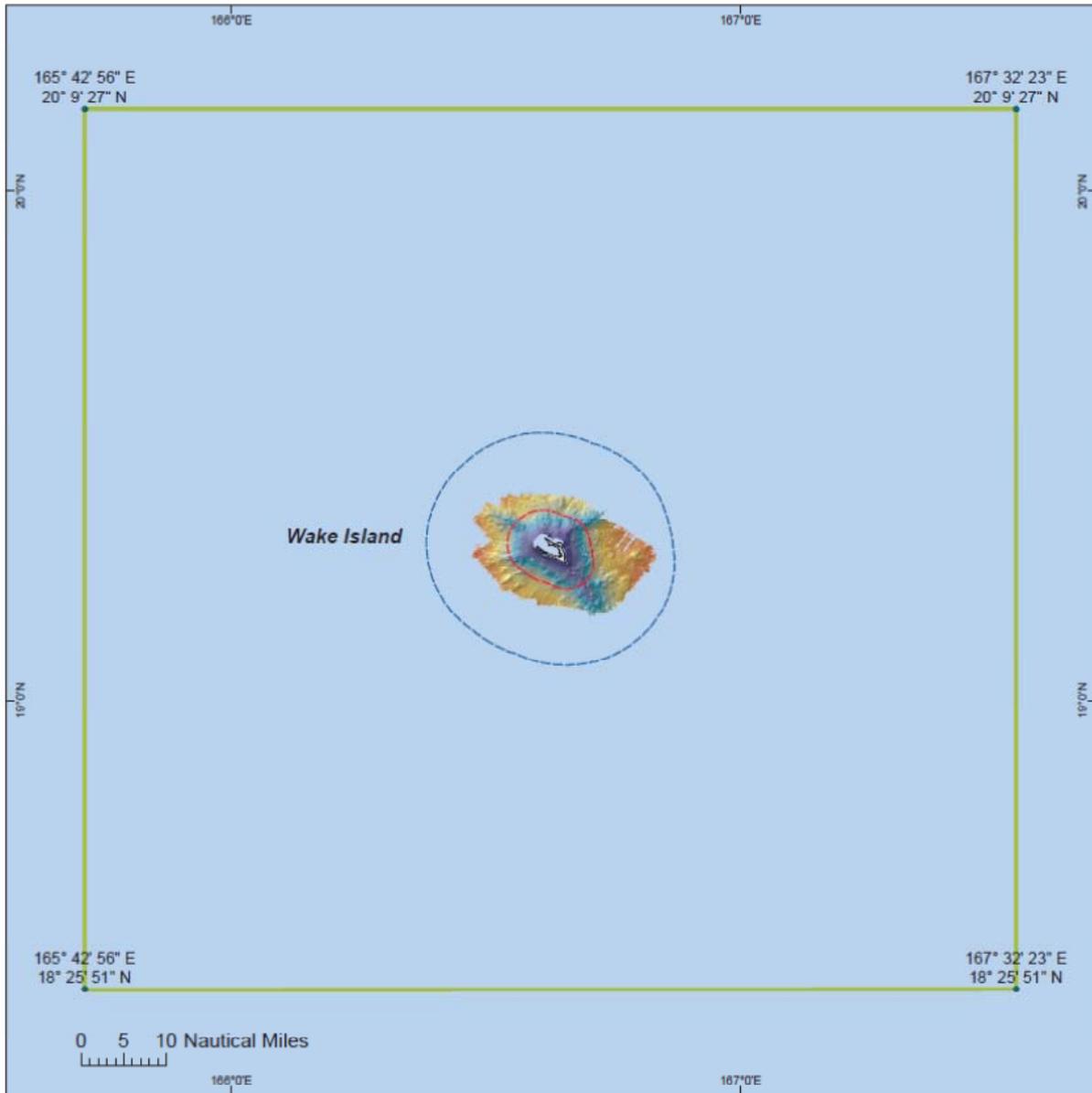


Figure 7: Map of Wake Island
 Note: green line delineates MNM boundary

IV. Options to be Considered

As described above, NMFS has recommended that the Council consider additional options related to trip cost reimbursement limits, bag limits, and consistency of 0-12 nm no-take areas with USFWS authority as provided in the Proclamation establishing the PRI MNM.

A) Trip cost reimbursement limits

Under the Council's recommendation to maintain the practice customary exchange of fish harvested by non-commercial fishermen in the Rose Atoll MNM and Islands Unit of the MTMNM, cash reimbursements for actual trip costs would be allowed (see Appendix II for more information). Trip costs were evaluated for non-commercial fishing in Rose Atoll MNM and the Islands Unit of the MTMNM, and based on distances between trip origination and Monuments, length of fishing trip, current fuel costs, bait cost, and food for crew (See Tables 1 -2 for more information). Based on estimated trip costs, the following options for Rose Atoll MNM and Marianas Trench MNM are provided below. PRIMNM trip costs are not evaluated as traditional indigenous fishing and customary exchange is not practiced in the PRIMNM.

A.1 Options for trip cost reimbursement limits for Rose Atoll MNM

- A.1(a): 1-day trip originating from Manua Islands = \$ 205
- A.1(b): 3-day trip originating from the Manua Islands = \$ 1267
- A.1(c): 5-day trip originating from Tutuila = \$ 2096
- A.1(d): trip cost reimbursement limit as a percentage of trip costs (e.g. 50 %)
- A.1(e): do not establish trip cost reimbursement limit

A.2 Options for trip cost reimbursement limits for Islands Unit of the MTMNM

- A.2(f): 5-day trip originating from Saipan to Asuncion only = \$ 5350
- A.2(g): 7-day trip originating from Saipan to Uracus = \$ 6400
- A.2(h): trip cost reimbursement limit as a percentage of trip costs (e.g. 50 %)
- A.2(i): do not establish trip cost reimbursement limit

Table 1: Estimated Trip Costs from fishing in Rose Atoll MNM

Vessel size	Distance (one way measure in nm)	Length of Trip	Gallons of Fuel Used	Price Per Gallon	Total Fuel Cost	Ice Costs	Bait Costs	Food Costs (3 person crew)	Total Trip Costs
27 ft alia vessel from Manua Islands	25 nm = one way distance to outer boundary of Rose Atoll MNM nm	1 day	20	\$ 6.00	\$120	\$ 20	\$ 20	\$ 45 for	\$ 205
49 ft vessel from Tutuila	95 nm = one way distance to outer boundary of Rose Atoll MNM	3 days	180	\$ 4.57	\$ 822	250	\$ 60	\$ 135	\$ 1267
	145 nm = one way distance from Tutuila to Rose Atoll	5 days	300	\$ 4.57	\$ 1371	\$ 400	\$ 100	\$ 225	\$ 2096

- Notes:** 1) The table above assumes that only pelagic trolling would occur due to Council recommendation to establish 0-12 nm no-fishing zone around Rose Atoll.
 2) Estimates of price per gallon vary by island and fuel type. Alia vessels in the Manua Islands use gasoline. A 49ft vessel from Tutuila would likely use diesel fuel.
 3) Price per gallon estimates were provided on February 7, 2012 by Fini Aitaoto, Council AS Island Coordinator.
 4) Fuel consumption estimates provided by Sean Martin, Council member, owner and manager of several longline vessels.

Table 2: Estimated Trip Cost for 65 ft fishing vessel from Saipan to Islands Unit of the Marianas Trench MNM

Vessel Size	Distance (nautical miles one way)	Length of trip	Gallons of Diesel Fuel Used	Price Per Gallon	Total Fuel Costs	Ice Costs	Bait costs	Food (5 person crew)	Total Trip Costs
65 ft	260 nm = distance from Saipan to Asuncion	5 days	750	\$ 5.00	\$ 3750	\$ 700	\$ 400	\$ 500	\$ 5350
65 ft	315 nm = distance from Saipan to Uracas	7 days	900	\$ 5.00	\$ 4500	\$ 800	\$ 450	\$ 650	\$ 6400

- Notes:** 1)The table above assumes fishing activity would involve pelagic trolling, bottomfishing, and fishing for coral reef species.
 2) Price per gallon estimates were provided on February 7, 2012 by Jack Ogumoro, Council CNMI Island Coordinator
 3) Fuel consumption estimates provided by Sean Martin, Council member, owner and manager of several longline vessels.

B) Bag limits

When considering bag limits, it is important to keep in mind the Council's existing recommendations specific to Rose Atoll MNM and Marianas Trench MNM Islands Unit.

Rose Atoll

- 0-12 nm no-fishing area around Rose Atoll
- Thus, only pelagic species (e.g. skipjack, yellowfin, mahimahi) would be harvested from the Monument

Marianas Trench Islands Unit

- No no-fishing areas recommended, therefore coral reef, bottomfish, and pelagic species could be harvest from within the Monument

PRI MNM

- 0-12 nm no-fishing area around Rose Atoll
- Thus, only pelagic species (e.g. skipjack, yellowfin, mahimahi) would be harvested from the Monument

The use of non-commercial bag limits in the fishery manager's tool box is typically used for two reasons: 1) when the status of the resource is unknown or believed to be in decline or depleted, and/or 2) to provide limit on non-commercial harvests that can be used for assessment purposes when logbooks are not required.

Even though non-commercial fishing logbooks would be required under the Council's recommendation, NOAA is suggesting that the Council consider bag limits as a safeguard to prevent commercial fishing. However, it is important to note that there is no record of commercial fishing in the Rose Atoll and Marianas Trench (Islands Unit) Monuments in the last 10 years. Nonetheless, options for bag limits are provided below.

B.1 Bag limit Options for Rose Atoll MNM

As stated above, the Councils existing recommendation would allow for pelagic fishing only, as there would be a 0-12 nm no-fishing zone around Rose Atoll. Common pelagic management unit species caught using trolling gear include: skipjack and yellowfin tuna, mahimahi, wahoo, and billfish (blue marlin and sailfish). The following options for bag limits of individual species are provided below:

B.1(a): 5 skipjack, 5 yellowfin, 5 mahimahi, 5 wahoo, 5 billfish per vessel

B.1(b): 10 skipjack, 10 yellowfin, 10 mahimahi, 10 wahoo, 10 billfish per vessel

B.1(c): 20 skipjack, 20 yellowfin, 20 mahimahi, 20 wahoo, 20 billfish per vessel

Alternatively, the Council could consider setting non-commercial bag limits based on estimated weights. The 5-yr average catch per unit effort for troll vessels catch pelagic species in American Samoa is 267 lbs/day (33.4 lbs/hr/8hrs; 2010 Pelagics Annual Report). Using this average as a

baseline, a range of trip limits that would include the total weight of yellowfin, skipjack, mahimahi, wahoo, and billfish caught combined per day. These species are chosen because they are the only species that appear in the data for troll caught pelagic species in American Samoa.

B.1(d): 267 lbs daily limit per vessel

B.1(e): 500 lbs daily limit per vessel

B.1(f): 1,000 lbs daily limit per vessel

B.1(g): no bag limits for non-commercial fishing

The species listed above are considered highly migratory fish stocks, and stock assessments have only been conducted for skipjack and yellowfin tuna. Catch limits listed under options (d-f) above represent infinitesimally small fractions of MSY values associated with skipjack and yellowfin tuna. Therefore, comparing these bag limits to MSY levels would offer little in terms of evaluation as they relate to sustainability.

Alternatively, an evaluative approach using average annual fisheries production of these species in the EEZ around American Samoa to that of the Rose Atoll MNM waters can be used. To do this, we calculated the 5-yr average fishery production in pounds/nm² of the American Samoa EEZ by longline and troll gear for these species and multiplied those numbers by the area of the Rose Atoll MNM. See table 1 below.

Table 3: Average pelagic species production (lbs) in the AS EEZ (2006-2010) and potential production in the Rose Atoll MNM

Species	Average LL landings	Average troll landings	Total Average lbs/yr	EEZ area (nm ²)	Catch per area (lbs)/(nm ²)	Rose Atoll area (nm ²)	Rose Atoll yield/yr (lbs/yr)
Yellowfin	1,017,978	8,611	1,026,589	118,343	8.67	13,451	116,683
Wahoo	392,422	362.8	392,785	118,343	3.31	13,451	44,644
Skipjack	356,822	9,281	366,104	118,343	3.09	13,451	41,611
Mahi	32,599	578	33,177	118,343	0.28	13,451	3770
Blue Marlin	81,415	40.8	81,455	118,343	0.68	13,451	9,258
Sailfish	4,924	29.6	4,953	118,343	0.04	13451	563
							Total= 216,530

Note: The table above only considers pelagic species caught by troll vessels in American Samoa. The longline fishery in American Samoa lands albacore tuna at levels around 3,000 -6,000 mt per year. If albacore was included in the table, the potential annual production estimates would be substantially higher.

For evaluative purposes, this analysis assumes that only two, single-day trips per week (8 per month) would originate from the Manua Islands and only four, 5-day trips (3 days fishing in the Monument) originating from Tutuila per year would occur. Carrying these assumptions forward,

options (g-f) would result in the following percentages of potential annual production of commonly troll caught pelagic species from the Rose Atoll MNM:

B.1(d): 287 lbs daily limit per vessel

Manua (2,296lbs/month x 12 months = 27,552 lbs/year) + Tutuila (3204 lbs/yr) = 30,756 lbs
30,756 lbs / 216,530 lbs potential annual production = 14 % potential annual production

B.1(e): 500 lbs daily limit per vessel

Manua (4,000lbs/month x 12 months = 48,000 lbs/year) + Tutuila (6,000 lbs/yr) = 54,000 lbs
54,000 lbs / 216,530 lbs potential annual production = 25 % potential annual production

B.1(f): 1,000 lbs daily limit per vessel

Manua (8,000 lbs/month x 12 months = 96,000 lbs/year) + Tutuila (12,000 lbs/yr) = 108,000lbs
108,000 lbs / 216,530 potential annual production = 50 % potential annual production

It is important to remember that the percentage of potential annual production has no relationship to MSY levels on a stock wide basis to these species. However, these values can be used a simple proxy for sustainability as the abundance of these species have generated at such catch levels in the American Samoa EEZ since the mid-90's and have not shown decline.

B.2 Bag limits for Marianas Trench MNM Islands Unit

As mentioned above, the Councils' recommendation would allow for the harvest of coral reef, bottomfish, and pelagic species in the Islands Unit. The following options for bag limits of groups of species are provided below:

B.2(a): 5 coral reef species, 5 bottomfish, 5 pelagic species

B.2(b): 10 coral reef species, 10 bottomfish, 10 pelagic species

B.2(c): 20 coral reef species, 20 bottomfish, 20 pelagic species

MSY estimates for families of coral reef species per each island of Islands Unit (Uracus, Maug, Asuncion) are provided below. These values are conservatively estimated assuming low natural mortality levels and that these are unfished stocks. (See Appendix III for more information).

Uracus Coral Reef Species Combined MSY = 12,861 lbs

Maug Coral Reef Species Combined MSY = 13,939 lbs

Asuncion Coral Reef Species Combined MSY = 23,786 lbs

For evaluative purposes, this analysis assumes that 4 trips per year would occur from Saipan to the Islands Unit. Given this assumption, varying coral reef harvest levels at each island of Islands Unit can be assessed against estimated MSY levels.

For each of the options below, coral reef species bag limits would be established for each of the three islands in the Islands Unit as a percentage of total combined MSY.

B.2(d): 5 % MSY/ island/ per trip (4 trips/yr would result in total annual harvests of up 20% MSY)

Uracus= 643 lbs
Maug = 697 lbs
Asuncion= 1189 lbs

B.2(e): 10 % MSY/island/trip (4 trips/yr would result in total harvests of up 40% MSY)

Uracus= 1286 lbs
Maug = 1393 lbs
Asuncion= 2378 lbs

B.2(f): 25 % MSY/island/trip (4 trips/yr would result in total annual harvests of up 100% MSY)

Uracus= 3215 lbs
Maug = 3484 lbs
Asuncion= 5946 lbs

B.2(g): no bag limits for non-commercial fishing of coral reef species

B.2.2 Bag Limits for Bottomfish Species in the Islands Unit

According to the NMFS PIFSC Essential Fish Habitat 5 year review report²,Uracus, Maug, and Asuncion have the following MSY levels for the deep and shallow-water bottomfish complex combined:

Uracus bottomfish MSY: 1,298 lbs

Maug bottomfish MSY: 2,377 lbs

Asuncion bottomfish MSY: 2,550 lbs

Applying the same approach as was done for coral reef harvest limits as a percentage of MSY, the following options are provided:

B.2(e): 5 % of MSY/ island/ per trip (4 trips/yr would result in total annual harvests of up 20% MSY)

Uracus = 65 lbs
Maug = 119 lbs
Asuncion= 127 lbs

² NMFS PIFSC Draft 5 year EFH Report. January 9, 2012.

B.2(f): 10 % of MSY/island/trip (4 trips/yr would result in total annual harvests of up 40% MSY)

Uracus= 129

Maug = 237

Asuncion = 255 lbs

B.2(g): 25 % of MSY/island/trip (4 trips/yr would result in total annual harvests of up 100% MSY)

Uracus= 324 lbs

Maug = 594 lbs

Asuncion= 637 lbs

B.2(h): no bag limits for non-commercial fishing of bottomfish

B.2.3 Bag limits for Pelagic Species in the Islands Unit of the MTMNM

In 2010, there were 31 small vessels making commercial landings of pelagic species (2010 Annual Report). The 2006-2010 average catch rate of such small troll vessels was 24.3 lbs/hr of pelagic species combined. Assuming day trips involve 8 hours of trolling, the average daily trip catch is approximately 194 lbs/per/day.

The options for daily pelagic bag limits are as follows:

B.2(h): 194 lbs daily limit per vessel

B.2(i): 500 lbs daily limit per vessel

B.2(j): 1,000 lbs daily limit per vessel

B.2(k): no bag limits for non-commercial fishing of pelagic species

Without the presence of any current or historical industrial scale commercial pelagic fisheries (e.g. longline; purse seine) in the EEZ around CNMI, it is not possible to evaluate the options as a percentage of historical production per square nautical mile of area within the Islands Unit. However, it is possible to evaluate these limits in relation to estimated production levels of pelagic species occurring in the EEZ around CNMI. For example, the Secretariat of the Pacific Community's (1998) fisheries assessment report indicates that the EEZ around CNMI can produce approximately to 13,900 mt of skipjack per year.³ Skipjack is the largest component of catches made by troll vessels in CNMI, at around 70 % of total catches (2010 Pelagics Annual Report). Thus, we can use the skipjack production estimate as an index of productivity for others species. Taking the ratio of non-skipjack catch by troll vessels and applying that to 13,900 mt of potential skipjack production, suggests that approximately 19,857 mt of pelagic species could be produce annually in the EEZ around CNMI. The area of the EEZ around CNMI is 376,046 nm²

³ Secretariat of the Pacific Community. 1998. Marianas Islands Pelagic Fisheries Assessment. Oceanic Fisheries Programme Country Report No. 12. Oceanic Fisheries Programme. SPC. Noumea, New Caledonia.

and area of the Islands Unit is 9,342 nm². Using these figures, options (h-j) can be evaluated as a percentage of potential annual production from the Islands Unit. Further, we assume that each fishing trip to the Islands Unit will result in 5 days of pelagic trolling within the Islands Unit. The following calculations prove the estimated potential annual production of commonly caught pelagic species in the EEZ around CNMI.

$23,640 \text{ mt} \times 2204 \text{ lbs/mt} = 43,765,140 \text{ lbs} / 376,046 \text{ nm}^2 = 116 \text{ lbs/nm}^2 \times 9,342 \text{ nm}^2 = 1,087,244 \text{ lbs}$

B.2.(h) 194 lbs daily limit per vessel
(5 days x 194lbs x 4 trips) (1,087,244 lbs) = 0.35 % of Islands Unit potential annual production

B.2.(i) 500 lbs daily limit per vessel
(5 days x 500lbs x 4 trips) / 1,087,244 lbs = 0.92 % of Islands Unit potential annual production

B.2.(j) 1,000 lbs daily limit per vessel
(5 days x 1000 lb x 4 trips) / 1,087,244 lbs = 1.84 % of Islands Unit potential annual production

B.2.4 Bag limits for Pelagic Species in the Pacific Remote Islands MNM

For consistency with the bag limit options considered for the other Monuments, the following options are provided:

B.2(l): 5 skipjack, 5 yellowfin, 5 mahimahi, 5 wahoo, 5 billfish per vessel per day

B.2(m): 10 skipjack, 10 yellowfin, 10 mahimahi, 10 wahoo, 10 billfish per vessel per day

B.2(n): 20 skipjack, 20 yellowfin, 20 mahimahi, 20 wahoo, 20 billfish per vessel per day

B.2(o): 250 lbs daily limit per vessel per

B.2(p): 500 lbs daily limit per vessel

B.2(q): 1,000 lbs daily limit per vessel

B.2(r): no bag limits for non-commercial fishing

Annual catch statistics have been compiled for US purse seine and the Hawaii longline fisheries fishing in the PRIA since 1990. Using the same methodology as was used earlier, the bag limit options can be evaluated against average annual production of pelagic species in the PRIA. However, because some of the PRIA are subtropical islands (Wake and Johnston) and the others are equatorial, the level of catch and effort by US purse seine fisheries (targeting skipjack and yellowfin) and US longline fisheries (targeting bigeye tuna) are different. Furthermore, because recreational troll fisheries, which would be allowed in the PRIMNM under the Council's recommendations, rarely catch bigeye tuna for example, the estimated potential annual production of such species from the longline data set was adjusted accordingly by removing species in the longline data set that typically would not be caught in a troll fishery (e.g. bigeye tuna, opah, sharks, etc). Purse seine fisheries catch primarily skipjack, yellowfin and incidentally catch bigeye tuna while fishing on FADs (bigeye tuna represents approximately 4% of total US

purse seine catch in 2005-2009). Therefore, the potential annual production estimates using purse seine data were adjusted to remove bigeye production that otherwise would not typically be harvested in the recreational troll fishery.

Using data from the Hawaii longline fishery, the estimated average (2000-2007) annual production of yellowfin, skipjack, mahimahi, wahoo, and billfish (marlins) is 216,978 lbs/yr in the EEZ around Johnston Island. Catch information for Wake Islands is not available, so that the average annual production for Johnston Island is used as a proxy for Wake Atoll, as both areas are located in the sub-tropical region above 15 degrees N and have similar size EEZs. For the remaining PRIA, catch data from the US purse fishery in Jarvis Island and Howland and Baker Islands is used as well as catch data from the Hawaii logline fishery from fishing in the EEZ around Kingman Reef/Palmyra Atoll. This adjusted potential annual production of yellowfin, skipjack, mahimahi, wahoo, and billfish (marlins) is estimated to be 17,590,840 lbs.

The area of the EEZ around each of the PRIA followed by the area within the PRIMNM by island is provided below:

Wake Island: 157,048 nm² (14,148 nm²)
Johnston Atoll: 179,522 nm² (13,851 nm²)
Kingman Reef/Palmyra Atoll = 122,707nm² (20,581 nm²)
Howland and Baker Islands = 167,656 nm² (19,749 nm²)
Jarvis Island = 156,226 nm² (13,436 nm²)

For the PRIA except Wake and Palmyra it is assumed that one, 5-day trip per year would occur in each of these PRIA by charter for hire vessels or by cruising yachts. For Wake, which has resident population of 130, it is assumed that four, 1-day trips per month would occur. For Palmyra, which has small resident population of field staff and researchers, as well as guests of The Nature Conservancy, it is assumed that one, 1-day pelagic trolling trip will be taken every month.

Working with the assumptions described above, options (l-n) can be evaluated as a percentage of annual potential production by island area.

B.2(0): 250 lbs daily limit per vessel

Wake Atoll

$216,978 \text{ lbs} / 157,048 \text{ nm}^2 = 1.38 \text{ lbs/nm}^2 \times 14,148 \text{ nm}^2 = 19,547 \text{ lbs/nm}^2$
 $(1 \text{ day} \times 250 \text{ lbs} \times 4 \text{ trips/month} \times 12) / 19,537 \text{ lbs/nm}^2 = 61 \%$

Johnston Island

$216,978 \text{ lbs} / 179,522 \text{ nm}^2 = 1.20 \text{ lbs/nm}^2 \times 13,851 \text{ nm}^2 = 16,740 \text{ lbs/nm}^2$
 $(250 \text{ lbs} \times 5 \text{ days/yr}) / 16,740 \text{ lb/nm}^2 = 7.5 \%$

Kingman Reef/Palmyra Atoll

$17,590,840 \text{ lbs} / 122,707 \text{ nm}^2 = 143.3 \text{ lbs/nm}^2 \times 20,581 \text{ nm}^2 = 2,950,419 \text{ lbs/nm}^2$
 $(250 \text{ lbs} \times 1 \text{ trip/month} \times 12) / 2,950,419 \text{ lbs/nm}^2 = 0.10 \%$

Howland and Baker Islands

$17,590,840 \text{ lbs} / 167,656 \text{ nm}^2 = 104.9 \text{ lbs/nm}^2 \times 19,749 \text{ nm}^2 = 2,072,108 \text{ lbs/nm}^2$
 $(250 \text{ lbs} \times 5 \text{ days/yr}) / 2,072,108 \text{ lbs/nm}^2 = 0.06 \%$

Jarvis Island

$17,590,840 \text{ lbs} / 156,226 \text{ nm}^2 = 112.5 \text{ lbs/nm}^2 \times 13,436 \text{ nm}^2 = 1,511,550 \text{ lbs/nm}^2$
 $(250 \text{ lbs} \times 5 \text{ days/yr}) / 1,511,550 \text{ lbs/nm}^2 = 0.08 \%$

B.2(p): 500 lbs daily limit per vessel

Wake Atoll

$216,978 \text{ lbs} / 157,048 \text{ nm}^2 = 1.38 \text{ lbs/nm}^2 \times 14,148 \text{ nm}^2 = 19,547 \text{ lbs/nm}^2$
 $(1 \text{ day} \times 250 \text{ lbs} \times 4 \text{ trips/month} \times 12) / 19,537 \text{ lbs/nm}^2 = 122 \%$

Johnston Island

$216,978 \text{ lbs} / 179,522 \text{ nm}^2 = 1.20 \text{ lbs/nm}^2 \times 13,851 \text{ nm}^2 = 16,740 \text{ lbs/nm}^2$
 $(250 \text{ lbs} \times 5 \text{ days/yr}) / 16,740 \text{ lb/nm}^2 = 15 \%$

Kingman Reef/Palmyra Atoll

$17,590,840 \text{ lbs} / 122,707 \text{ nm}^2 = 143.3 \text{ lbs/nm}^2 \times 20,581 \text{ nm}^2 = 2,950,419 \text{ lbs/nm}^2$
 $(250 \text{ lbs} \times 1 \text{ trip/month} \times 12) / 2,950,419 \text{ lbs/nm}^2 = 0.20 \%$

Howland and Baker Islands

$17,590,840 \text{ lbs} / 167,656 \text{ nm}^2 = 104.9 \text{ lbs/nm}^2 \times 19,749 \text{ nm}^2 = 2,072,108 \text{ lbs/nm}^2$
 $(250 \text{ lbs} \times 5 \text{ days/yr}) / 2,072,108 \text{ lbs/nm}^2 = 0.12 \%$

Jarvis Island

$17,590,840 \text{ lbs} / 156,226 \text{ nm}^2 = 112.5 \text{ lbs/nm}^2 \times 13,436 \text{ nm}^2 = 1,511,550 \text{ lbs/nm}^2$
 $(250 \text{ lbs} \times 5 \text{ days/yr}) / 1,511,550 \text{ lbs/nm}^2 = 0.16 \%$

B.2(o): 1,000 lbs daily limit per vessel

Wake Atoll

$216,978 \text{ lbs} / 157,048 \text{ nm}^2 = 1.38 \text{ lbs/nm}^2 \times 14,148 \text{ nm}^2 = 19,547 \text{ lbs/nm}^2$
 $(1 \text{ day} \times 250 \text{ lbs} \times 4 \text{ trips/month} \times 12) / 19,537 \text{ lbs/nm}^2 = 244 \%$

Johnston Island

$216,978 \text{ lbs} / 179,522 \text{ nm}^2 = 1.20 \text{ lbs/nm}^2 \times 13,851 \text{ nm}^2 = 16,740 \text{ lbs/nm}^2$
 $(250 \text{ lbs} \times 5 \text{ days/yr}) / 16,740 \text{ lb/nm}^2 = 30 \%$

Kingman Reef/Palmyra Atoll

$17,590,840 \text{ lbs} / 122,707 \text{ nm}^2 = 143.3 \text{ lbs/nm}^2 \times 20,581 \text{ nm}^2 = 2,950,419 \text{ lbs/nm}^2$
 $(250 \text{ lbs} \times 1 \text{ trip/month} \times 12) / 2,950,419 \text{ lbs/nm}^2 = 0.40 \%$

Howland and Baker Islands

$17,590,840 \text{ lbs} / 167,656 \text{ nm}^2 = 104.9 \text{ lbs/nm}^2 \times 19,749 \text{ nm}^2 = 2,072,108 \text{ lbs/nm}^2$
 $(250 \text{ lbs} \times 5 \text{ days/yr}) / 2,072,108 \text{ lbs/nm}^2 = 0.24 \%$

Jarvis Island

$17,590,840 \text{ lbs} / 156,226 \text{ nm}^2 = 112.5 \text{ lbs/nm}^2 \times 13,436 \text{ nm}^2 = 1,511,550 \text{ lbs/nm}^2$
 $(250 \text{ lbs} \times 5 \text{ days/yr}) / 1,511,550 \text{ lbs/nm}^2 = 0.32 \%$

C. Establish bag limits for the Monuments consistent with US Fish and Wildlife Service (FWS) policies for pelagic fishing in Midway Special Management Area (SMA) and Palmyra National Wildlife Refuge (NWR)

Options under this category are as follows:

C(a): establish bag limits that mirror FWS policy on sustenance fishing in the Midway Atoll Special Management Area = 300 pelagic fish per year within Midway SMA

The above policy can be found at Appendix VI or at:

http://www.papahanaumokuakea.gov/resource/support/sustenance_fishing_policy_final.pdf. The compatibility determination for this amount of fishing indicates that 300 fish per year could result in 15,000 lbs (using 50 lb per fish) of fish harvested annually from the SMA. Following the methodology used earlier, 15,000 lbs/yr divided by the area of the SMA (692 nm^2) = $21.4 \text{ lbs/nm}^2/\text{yr}$.

For example, $21.4 \text{ lbs/nm}^2/\text{yr} \times 14,148 \text{ nm}^2$ (Wake Atoll MNM) = 302,767 lbs year

$302,676 \text{ lbs} / 50 \text{ lbs per fish} = 6055 \text{ fish per year}$

$6055 \text{ fish/yr} / 48 \text{ trips} = 126 \text{ fish per trip}$

Using the same methodology, trip limits could be formulated for each of the Monuments; however, for brevity, respective iterations are not provided herein. The FWS has established a policy that limits the number of pelagic fish harvested to 300/yr or 15,000 lbs/yr in the SMA, which has a square area much smaller than the Monuments. It is assumed that FWS deemed such levels as sustainable; therefore, the same 21.4 lbs/nm^2 could be used a proxy for other Monuments.

C(b): establish fishing regulations that mirror the FWS pelagic fishing policy at Palmyra NWR such that pelagic fishing is limited to 8 people per trip, with no more than 2 boats at a time, with up to 3 trips per day

FWS' recreational fishing policy at Palmyra can be found at Appendix VII and at the following website: <http://www.fws.gov/palmyraatoll/recreation.html>. FWS does not have daily bag limits for recreational fishing at Palmyra Atoll, but does require trip reports. A request for catch and effort information has been provided to FWS related to pelagic fishing at Palmyra Atoll, but requested information to date has yet to be received. The Council has also requested information from the USFWS and The Nature Conservancy⁴ related to payments received for opportunities to conduct recreational fishing at Palmyra Atoll.

⁴ In 2000, The Nature Conservancy bought Palmyra Atoll from the Fullard-Leo family.

D. Definitional Timeframe for Traditional Indigenous Fishing

The September 28, 2011 letter from PIRO also suggested that the Council may want to clarify the definition of “non-commercial” to specify that traditional indigenous fishing is limited to traditional and culturally significant fishing practices in existence within the fishing community of American Samoa and the Marianas Archipelago at the time the Proclamations were established. Options addressing this issue are as follows:

D(a): Do not recommend that traditional indigenous fishing is limited to traditional and culturally significant fishing practices in existence within the fishing community of American Samoa and the Marianas Archipelago at the time the Proclamations were established (January 2009)

D(b): recommend that traditional indigenous fishing is limited to traditional and culturally significant fishing practices in existence within the fishing community of American Samoa and the Marianas Archipelago at the time the Proclamations were established (January 2009)

E. Jurisdictional Issues in the Pacific Remote Islands MNM

As mentioned, the September 28, 2011 NMFS letter expresses concern that the Council’s recommendations to establish 0-12 nm no-take (no-fishing) areas around the PRIA conflicts with the Proclamation. NMFS has suggested that the Council consider making it clear in its recommendation that the no-take zones within the PRI Monument are subject to FWS authority to issue permits for non-commercial fishing in consultation with NOAA. To this end, the following options are provided:

E(a): Do not recommend that the no-take zones within the PRI Monument are subject to FWS authority to issue permits for non-commercial fishing in consultation with NOAA

E(b): Recommend that the no-take zones within the PRI Monument are subject to FWS authority to issue permits for non-commercial fishing in consultation with NOAA



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
1601 Kapiolani Blvd., Suite 1110
Honolulu, Hawaii 96814-4700
(808) 944-2200 • Fax: (808) 973-2941

September 28, 2011

Kitty Simonds
Executive Director
Western Pacific Fishery Management Council
1164 Bishop St., Suite 1400
Honolulu, HI 96813

Dear Kitty,

This letter is regarding the Western Pacific Fisheries Management Council's Draft Amendment containing fisheries management measures for the Rose Atoll, Marianas Trench and Pacific Remote Islands Marine National Monuments (August 13, 2010 version).

The Council's draft fishery management measures, among other things, ban commercial fishing in the Monuments as required by the Proclamations but also provides for "customary exchange" of fish obtained through noncommercial fishing in the Monuments. The Council defines customary exchange as "the non-market exchange of marine resources between fishers and community residents for goods, services and/or social support for cultural, social or religious reasons, and may include cost recovery through monetary reimbursements and other means for actual trip expenses." The draft measures also establish no-take zones from the low water mark out 12 nautical miles in the Rose Atoll and the Pacific Remote Islands Monuments. I regret the delay in reviewing this draft amendment. I hope you can appreciate that this review was necessary and that with the guidance that Sustainable Fisheries staff and NOAA General Counsel have previously provided and the guidance provided here, we can continue to assist Council staff in developing the draft amendment and regulations that would implement the monument proclamations move forward again.

In short, the record for the draft measures appears to provide a basis for identifying customary exchange as an important element of traditional indigenous fishing practices in the Western Pacific. However, as currently drafted, the proposal does not identify adequate safeguards to ensure that the practice of customary exchange does not blur the line with commercial fishing, such that commercial fishing is conducted in violation of the Proclamations. In addition, we are concerned that the Pacific Remote Islands no-take zones, as currently drafted, are inconsistent with the Proclamations, particularly with respect to Palmyra Atoll where noncommercial fishing currently permitted by the Fish and Wildlife Service is specifically authorized in the proclamation.



Customary exchange: The draft Amendment sets forth a historical and sociological research that customary exchange of fish is an important element of traditional indigenous fishing practices in the region. However, to ensure compliance with the express prohibition on commercial fishing in the Monuments, management measures must include adequate safeguards to ensure that authorized noncommercial fishing does not provide a foothold for commercial fishing in the monuments. We are concerned that by allowing cash reimbursement for trip expenses as an element of customary exchange, the proposal potentially opens the door to the conduct of commercial fishing. We recognize that the Council has proposed restrictions intended to prevent such abuse (eligibility criteria, logbooks and receipt retention). However, these restrictions alone may not be sufficient to prevent customary exchange from being conducted in a manner and on a scale that circumvents the ban on commercial fishing. We recommend that Council consider more specific safeguards that would allow customary exchange as it traditionally has been practiced while avoiding expansion to commercial levels.

In this regard, the Council may want to consider revising the definition of "customary exchange" to exclude, or at least clearly limit, cost recovery of trip expenses. In addition, the Council may wish to clarify the definition of "non-commercial fishing" to specify that traditional indigenous fishing is limited to traditional and culturally significant fishing practices in existence within the fishing communities of American Samoa and the Marianas Archipelago at the time the Monuments were established. The Council may also want to reconsider its decision not to impose bag limits for noncommercial fishing. We emphasize that these are recommended considerations, not to foreclose other measures that the Council, in its discretion, may choose to evaluate. In short, we urge the Council to consider additional measures that would provide a clear basis for enforcing the distinction between commercial and noncommercial fishing.

No-take areas: We are concerned that the Council's action to establish no-take areas around the Pacific Remote Islands conflicts with the Proclamation. In particular, the Proclamation provides the Department of Interior with management authority out to 12 nautical miles within the Monument, while the Secretary of Commerce exercises management authority over fishery-related activities from 12-50 nautical miles. In light of the express Proclamation language providing that noncommercial fishing opportunities currently allowed by the Fish and Wildlife Service at Palmyra Atoll may continue unless the Secretary of the Interior determines that such fishing would be incompatible with the purposes of the Palmyra Atoll National Wildlife Refuge, the no-take area there is inconsistent with the provision of this Proclamation. As an alternative that would be consistent with the Proclamation, the Council could make clear that the no-take zones in the PRI Monument are subject to FWS authority to issue permits for noncommercial fishing, in consultation with NOAA.

I look forward to addressing these issues and moving forward with this important action. Please contact me if you have any questions about the information provided.

Sincerely


Michael D. Tosatto
Regional Administrator

Appendix II: List of Final Recommendations in the Draft FEP Amendments (June 2010)

Regarding General Definitions for the Monuments, the Council:

1. Defines “customary exchange” as the non-market exchange of marine resources between fishers and community residents for goods, services and/or social support for cultural, social, or religious reasons, and may include cost recovery through monetary reimbursements and other means, for actual trip expenses (e.g. ice, bait, food, fuel) that may be necessary to participate in fisheries in the Western Pacific Region.
2. Defines “non-commercial fishing” as fishing that does not meet the MSA definition of commercial fishing and includes, but is not limited to sustenance, subsistence, traditional indigenous, and recreational fishing.
3. Defines “recreational fishing” as fishing conducted for sport or pleasure including for-hire charter fishing and recommends that recreational fishing be allowed in the Marine National Monuments, but the catch cannot be sold, bartered, or traded nor included in customary exchange.

Regarding the Rose Atoll Marine National Monument, the Council:

1. Recommends that commercial fishing be prohibited within the Rose Atoll MNM.
2. Recommends a no-take/no-fishing area from 0-12 nautical miles around Rose Atoll with the Council to review the no-take regulations after three years.
3. Recommends that non-commercial fishing (see definition above) be allowed seaward of the outer boundary of the 0-12 nm no-fishing zone within in the Rose Atoll MNM.
4. Recommends that the customary exchange of fish harvested by non-commercial fishermen be allowed, except for the fish harvested by recreational fishermen whose primary motivation is to fish for sport or pleasure.
5. Recommends fishery participants conducting customary exchange not be required to report monetary reimbursements nor trip expenses due to anticipated behavioral modifications that would impact cultural practices related to the motivations of customary exchange.
6. Recommends that eligibility for non-commercial fishing permits be limited to residents of the American Samoa Fishing Community.
7. Recommends customary exchange of fish harvested within the Rose Atoll MNM be allowed to include family and friends of residents of American Samoa Fishing Community.

8. Recommends that non-commercial fishing permits be required for the owner and operator of a vessel fishing in the Rose Atoll MNM and that the valid permit must be carried on board the vessel.
9. Recommends that the permitted operator of a vessel fishing in the Rose Atoll MNM be required to fill out a fishing logbook and that the both the permitted owner and operator are required to ensure that logbooks for all fishing conducted on the vessel used to fish in the Monument is submitted within 30 days to NMFS/AS DMWR.
10. Recommends that the American Samoa Department of Marine and Wildlife Resources (DMWR) be included in the administration and monitoring of the permits and logbooks.
11. Recommends that separate permit and logbook requirements be established for recreational charter for-hire fishing to monitor the sustainability of this type of fishing as well as potentially limit the number of participants.
12. Recommends that eligibility for recreational charter for-hire fishing permits be limited to owners and operators of charter businesses be legally established in the American Samoa Fishing Community.
13. Recommends all non-commercial permits be valid for one year after issuance.

Regarding the Marianas Trench Marine National Monument, the Council:

1. Recommends that commercial fishing be prohibited within the Islands Unit of the Marianas Trench MNM.
2. Recommends that non-commercial fishing (see definition above) be allowed within the Islands Unit of the Marianas Marine National Monument.
3. Recommends that the customary exchange of fish by non-commercial fishermen be allowed, except for the fish harvested by recreational fishermen whose primary motivation is to fish for sport or pleasure.
4. Recommends fishery participants conducting customary exchange not be required to report monetary reimbursements nor trip expenses due to anticipated behavioral modifications that would impact cultural practices related to the motivations of customary exchange.
5. Recommends customary exchange of fish harvested within the Islands Unit of the Marianas Trench MNM be allowed to include family and friends of residents of CNMI and Guam Fishing Communities.

6. Recommends that non-commercial fishing permits be required for the owner and operator of vessels fishing in the Islands Unit of the Marianas Trench MNM and that the valid permit must be carried on board the vessel.
7. Recommends that the permitted operator of a vessel fishing in the Islands Unit of the Marianas Trench MNM be required to fill out a fishing logbook and that the both the permitted owner and operator both be required to ensure that logbooks for all fishing conducted on the vessel used to fish in the Monument are submitted within 30 days to NMFS/CNMI Division of Aquatic Resources.
8. Recommends that the CNMI Department of Land and Natural Resources be included in the administration and monitoring of the permits and logbooks.
9. Recommends that eligibility for non-commercial fishing permits be limited to residents of Guam and CNMI fishing communities only.
10. Recommends that separate permit and logbook requirements be established for recreational charter for-hire fishing to monitor the sustainability of this type of fishing as well as potentially limit the number of participants.
11. Recommends that eligibility for recreational charter for-hire permits be limited to owners and operators of a charter business legally established in either the CNMI or Guam fishing community.
12. Recommends that all non-commercial permits be valid for one year after issuance.
13. Recommends that the Marianas Trench Marine National Monument Advisory Council include representation from Guam as an observer.

Regarding the Pacific Remote Islands Marine National Monument, the Council:

1. Recommends that commercial fishing be prohibited in Pacific Remote Island MNM.
2. Recommends no-take/no-fishing marine protected areas from 0-12 nautical miles be established around Baker, Howland and Jarvis Islands, Kingman Reef and Johnston, Palmyra and Wake atolls.
3. Recommends that non-commercial fishing be allowed in the Pacific Remote Islands MNM.
4. Recommends that recreational charter for-hire fishing be allowed, but that the catch cannot be marketed for sale, barter, or trade and the customary exchange of the catch is prohibited.

5. Recommends that separate permit and logbook requirements be established for for-hire fishing in to monitor the sustainability of this type of fishing as well as potentially limit the number of participants.
6. Recommends that existing federal permit and logbook requirements be maintained for fishery participants targeting pelagic species and that the U.S. FWS should, for purposes of consistency, adopt or continue these permit and reporting requirements for areas under their jurisdiction.
7. Recommends NMFS and USFWS work on a comprehensive outreach, education and compliance program for potential fishermen, visitors and researchers that spend time in the PRIMNM.

Appendix III- Draft Proposed Fishing Regulations in Draft FEP Amendments

I. Regarding Subpart B- American Samoa Fisheries, the following sub-sections are either added or revised:

§ 665.99 (Area Restrictions) is revised as follows: Fishing is prohibited in all no-take MPAs. The following U.S. EEZ waters around American Samoa are no-take MPAs: ~~Landward of the 50 fm (91.5 m) curve~~ Seaward from the low water mark to 12 nautical miles around Rose Atoll as defined by the following coordinates:

[list coordinates]

§ 665.170 Rose Atoll Marine National Monument [reserved]

[list coordinates]

§ 665.171 (Definitions) is added as follows:

Customary exchange means the non-market exchange of marine resources between fishers and community residents for goods, services and/or social support for cultural, social, or religious reasons and may include cost recovery through monetary reimbursements and other means for actual trip expenses.

Non-commercial fishing means fishing that includes sustenance, subsistence, traditional indigenous and recreational fishing and whereby the fish harvested, either in whole or in part, cannot be intended to enter commerce or enter commerce through sale, barter, or trade.

Recreational fishing means fishing conducted for sport or pleasure and whereby the fish harvested, either in whole or in part, cannot be intended to enter commerce or enter commerce through sale, barter, or trade nor included in customary exchange.

§ 665.172 (Permits) is added as follows:

(a) *Permits.*

(1) *Rose Atoll Marine National Monument Non-commercial fishing permit.* The owner and operator of a vessel that is used for non-commercial fishing to fish for, take, retain, or possess any MUS in the Rose Atoll Marine National Monument are required to obtain a non-commercial permit issued under this section.

Permit Eligibility Criteria. (i) To be eligible for a permit, applicants must residents of the American Samoa fishing community.

Terms and conditions.

(i) To fish in the Rose Atoll MNM with non-commercial fishing permit, all applicants must sign an affirmative statement in the permit application that no fish harvested in the MNM is intended to, either in whole or in part, enter commerce or enter commerce through sale, barter, or trade.

(ii) Non-commercial fishing permit holders are allowed to use the fish harvested in the MNM for the purposes of customary exchange as defined in § 665.171, except those conducting recreational fishing which is also defined in this § 665.171.

(iii) Monetary reimbursements are allowed under customary exchange for actual fishing trip expenses related to ice, bait, fuel, or food.

(iv) If any monetary reimbursements are accepted under customary exchange for actual trip expenses, permit holders are required to keep records of fishing trip expenses and shall be able to provide them to NMFS for inspection.

(2) *Rose Atoll Marine National Monument recreational charter for-hire fishing permit.* The owner and operator of a recreational charter vessel used for carrying a passenger for hire to fish for, take, retain, or possess any MUS in the MNM is required to obtain a recreational charter permit.

(A) *Permit Eligibility Criteria.* (i) To be eligible for a permit, the charter for-hire business must be a legally established business in American Samoa.

(B) *Terms and conditions.*

(i) To fish in the Rose Atoll MNM with a charter fishing permit, all permit applicants must sign an affirmative statement in the permit application that no fish harvested in the MNM is intended to, either in whole or in part, enter commerce or enter commerce through sale, barter, or trade.

(ii) Fish harvested under a Rose Atoll MNM charter permit cannot be used for the purposes of customary exchange.

(c) *Permit Application.*

(1) A Rose Atoll MNM non-commercial fishing permit application can be obtained from NMFS PIRO or the American Samoa Department of Marine and Wildlife Resources (DMWR). The completed application must be submitted to PIRO. In no case shall PIRO accept an application that is not on the Western Pacific Federal fisheries permit application form.

(2) A Rose Atoll MNM recreational charter for-hire fishing permit application can be obtained from NMFS PIRO or the American Samoa Department of Marine and Wildlife Resources (DMWR). The completed application must be submitted to PIRO. In no case shall PIRO accept an application that is not on the Western Pacific Federal fisheries permit application form.

(d) *Issuance.* After receiving a complete application submitted under paragraph (c) of this section, the Regional Administrator will issue a permit to an applicant who is eligible under this part, as appropriate.

(e) *Fees.* (1) PIRO will charge a fee for a permit issued under this section.

(g) *Expiration.* Permits issued under this section are valid for 1 year.

(h) *Replacement.* Replacement permits may be issued, without charge, to replace lost or mutilated permits. An application for a replacement permit is not considered a new application.

(i) *Transfer.* Permits cannot be transferred.

(j) *Alteration.* Any permit that has been altered, erased, or mutilated is invalid.

(k) *Display.*

(1) A Rose Atoll MNM non-commercial fishing permit is under this subpart, or a facsimile of such permit, must be carried on the vessel on board the fishing vessel at all times while conducting non-commercial fishing for, taking, retaining, possessing, or landing MUS in the Rose Atoll MNM. Any permit issued under this section must be displayed for inspection upon request of an authorized officer.

(2) A Rose Atoll MNM charter for hire permit issued under this subpart facsimile of such permit, must be on board the vessel at all times while the vessel is fishing for, taking, retaining, possessing, or landing MUS in the Rose Atoll MNM. Any permit issued under this section must be displayed for inspection upon request of an authorized officer.

§ 665.173 (Prohibitions) is added as follows:

In addition to the general prohibitions specified in §600.725 of this chapter and §665.15, it is unlawful for any person to do any of the following:

(a) Fish for or retain any MUS caught within the Rose Atoll Marine National Monument in which the fish harvested, either in whole or in part, are intended to enter commerce or enter commerce through sale, barter, or trade.

(b) Conduct non-commercial fishing within the Rose Atoll Marine National Monument without a valid Rose Atoll MNM non-commercial fishing permit registered as required under Section 665.172 of this subpart.

(c) Fish within the coordinates of a 0-12 nautical as listed in §665.99.

(d) Conduct charter fishing within the Rose Atoll Marine National Monument without a valid Rose Atoll Marine National Monument recreational charter for-hire permit as required under Section 665.172 of this subpart.

(e) Transfer or alter any permit issued under Section 665.172 of this subpart.

(f) Fail to properly display any permit issued under Section 665.172 and in violation of Section 665.172(k) of this subpart.

Regarding Subpart D- Mariana Archipelago Fisheries, the following subsections are added:

§ 665.470 Marianas Trench Marine National Monument [reserved]

§ 665.471 (Definitions) is added to include:

Customary exchange means the non-market exchange of marine resources between fishers and community residents for goods, services and/or social support for cultural, social, or religious reasons and may include cost recovery through monetary reimbursements and other means for actual trip expenses.

Non-commercial fishing means fishing that includes sustenance, subsistence, traditional indigenous and recreational fishing and whereby the fish harvested, either in whole or in part, cannot be intended to enter commerce or enter commerce through sale, barter, or trade.

Recreational fishing means fishing conducted for sport or pleasure and whereby the fish harvested, either in whole or in part, cannot be intended to enter commerce or enter commerce through sale, barter, or trade nor included in customary exchange.

§ 665.472 (Management subareas)

The Marianas Trench Marine National Monument is divided into three sub-management areas with the following designations and boundaries [list coordinates]:

Islands Unit

Volcanic Unit

Trench Unit

§ 665.473 (Permits) is added to include:

(1) *Marianas Trench Marine National Monument Islands Unit Non-commercial fishing permit.* The owner and operator of a vessel that is used for non-commercial fishing to fish for, take, retain, or possess any MUS in the Islands Unit is required to obtain a non-commercial permit issued under this section.

(A) *Permit Eligibility Criteria.* (i) To be eligible for a permit, the applicant must be a resident of either Guam or CNMI fishing communities.

Terms and conditions.

(i) To fish in the Islands Unit with a non-commercial fishing permit, all applicants must sign an affirmative statement in the permit application that no fish harvested in the MNM is intended to, either in whole or in part, enter commerce or enter commerce through sale, barter, or trade.

(ii) Non-commercial fishing permit holders are allowed to use the fish harvested in the Islands Unit for the purposes of customary exchange as defined in § 665.171, except those conducting recreational fishing which is also defined in this § 665.171.

(iii) Monetary reimbursements are allowed under customary exchange for actual fishing trip expenses related to ice, bait, fuel, or food.

Marianas Trench Marine National Monument Islands Unit recreational charter for-hire fishing permit. The owner and operator of a charter vessel used for carrying a passenger for hire to fish for, take, retain, or possess any MUS in the Islands Unit is required to obtain a recreational charter for-hire permit.

(A) *Permit Eligibility Criteria.* (i) *To be eligible for a permit, the charter fishing business must be a legally established business in Guam or CNMI.*

(B) *Terms and conditions.*

(i) To fish in the Islands Unit with a recreational charter for-hire permit, all permit applicants must sign an affirmative statement in the permit application that no fish harvested in the MNM is intended to, either in whole or in part, enter commerce or enter commerce through sale, barter, or trade.

(ii) Fish harvested under an Islands Unit charter permit cannot be used for the purposes of customary exchange.

(c) *Permit Application.*

(1) A Islands Unit non-commercial fishing permit application can be obtained from NMFS PIRO or the Commonwealth of Northern Marianas Islands Department of Land and Natural Resource's Division of Fish and Wildlife (DFW). The completed application must be submitted to PIRO. In no case shall PIRO accept an application that is not on the Western Pacific Federal fisheries permit application form.

(2) A Islands Unit recreational charter for-hire permit application can be obtained from NMFS PIRO or the Commonwealth of Northern Marianas Islands Department of Land and Natural Resource's Division of Fish and Wildlife (DFW). The completed application must be submitted to PIRO. In no case shall PIRO accept an application that is not on the Western Pacific Federal fisheries permit application form.

(d) *Issuance.* After receiving a complete application submitted under paragraph (c) of this section, the Regional Administrator will issue a permit to an applicant who is eligible under this part, as appropriate.

(e) *Fees.* (1) PIRO will charge a fee for a permit issued under this section.

(g) *Expiration.* Permits issued under this section are valid for 1 year.

(h) *Replacement.* Replacement permits may be issued, without charge, to replace lost or mutilated permits. An application for a replacement permit is not considered a new application.

(i) *Transfer.* Permits cannot be transferred.

(j) *Alteration.* Any permit that has been altered, erased, or mutilated is invalid.

(k) *Display.*

(1) An Islands Unit non-commercial fishing permit is under this subpart, or a facsimile of such permit, must be possessed on board the fishing vessel at all times while conducting non-commercial fishing for, taking, retaining, possessing, or landing MUS in the Islands Unit. Any permit issued under this section must be displayed for inspection upon request of an authorized officer.

(2) An Island Unit recreational charter for-hire permit issued under this subpart facsimile of such permit, must be on board the vessel at all times while the vessel is fishing for, taking, retaining, possessing, or landing MUS in the Islands Unit. Any permit issued under this section must be displayed for inspection upon request of an authorized officer.

§ 665.474 (Prohibitions) is added to include:

In addition to the general prohibitions specified in §600.725 of this chapter and §665.15, it is unlawful for any person to do any of the following:

(a) Fish for or retain any MUS caught within the Islands Unit in which the fish harvested, either in whole or in part, are intended to enter commerce or enter commerce through sale, barter, or trade.

(b) Conduct non-commercial fishing within the Island Unit without a valid Islands Unit non-commercial fishing permit registered as required under Section 665.473 of this subpart.

(c) Conduct charter fishing within the Islands Unit without a valid Islands Unit charter permit as required under Section 665.473 of this subpart.

(d) Transfer or alter any permit issued under Section 665.473 of this subpart.

(e) Fail to properly display any permit issued under Section 666.473 and in violation of Section 665.172(k) of this subpart.

Regarding Subpart E- Pacific Remote Islands Areas Fisheries, the following subsections are either revised or added as follows:

§ 665.599 (Area restrictions) is revised as follows:

(a) Fishing is prohibited in all no-take MPAs. The following U.S. EEZ waters are no-take MPAs: ~~Landward of the 50 fathom (fm) (91.5 m) curve at~~ Seaward of the low water mark to 12 nautical miles around Jarvis, Howland Baker and Wake Islands, Johnston and Palmyra Atolls and Kingman Reef; as depicted on National Ocean Survey Chart Numbers 83116 and 83153.

[list coordinates]

~~(b) Low use MPAs. The following U.S. EEZ waters in the Western Pacific Region are low use MPAs: All waters between the shoreline and the 50 fm (91.5 m) curve around Johnston Atoll, Palmyra Atoll and Wake Island as depicted on National Ocean Survey Chart Numbers 83637, 83157 and 81664.~~

§ 665.670 (Pacific Remote Islands Marine National Monument [reserved])

§ 665.671 (Management Subareas) is added as follows:

The Pacific Remote Islands Marine National Monument is divided into [6 or 7] sub-management areas with the following designations and boundaries [define boundaries]:

Jarvis Island
Howland
Baker Island
Wake Island
Johnston Atoll
Palmyra Atoll
Kingman Reef

§ 665.672 (Permits) is added as follows:

(a) *Pacific Remote Islands Marine National Monument recreational fishing permit.* The owner and operator of a vessel used to fish for, take, retain, or possess any MUS in the Pacific Remote Islands National Monument is required to obtain a recreational fishing permit issued under this section.

(b) *Pacific Remote Islands Marine National Monument recreational charter for-hire fishing permit.* The owner and operator of a recreational charter for-hire vessel used for carrying a passenger for hire to fish for, take, retain, or possess any MUS in the Islands Unit is required to obtain a charter permit.

§ 665.673 (Prohibitions) is added as follows

In addition to the general prohibitions specified in §600.725 of this chapter and §665.15, it is unlawful for any person to do any of the following:

(a) Fish for or retain any MUS caught within the Pacific Remote Islands Marine National Monument in which the fish harvested, either in whole or in part, are intended to enter commerce or enter commerce through sale, barter, or trade.

(b) Conduct for-hire charter fishing within the Pacific Remote Islands Marine National Monument without a valid Pacific Remote Islands Marine National Monument recreational charter for-hire permit registered for use with a vessel used to conduct the fishing.

Appendix IV: Data Tables for Calculating Potential Annual Production of Pelagic Species in the Rose Atoll MNM

Yellowfin

year	LL landings	troll landings	Average lbs/yr	EEZ area (nm ²)	Catch per area (lbs)/(nm ²)	Rose atoll area (nm ²)	Rose yield/yr (lbs/yr)
2006	1,095,952	9,106	1,026,589	118,343	8.67	13,451	116,683
2007	1,396,331	9,023					
2008	749,825	20,089					
2009	866,522	2,785					
2010	981,258	2,052					

Wahoo

year	LL landings	troll landings	Average lbs/yr	EEZ area (nm ²)	Catch per area (lbs)/(nm ²)	Rose atoll area (nm ²)	Rose yield/yr (lbs/yr)
2006	630,329	696	392,785	118,343	3.31	13,451	44,644
2007	436,921	889					
2008	299,481	165					
2009	305,835	0					
2010	289,545	64					

Skipjack

year	LL landings	troll landings	Average lbs/yr	EEZ area (nm ²)	Catch per area (lbs)/(nm ²)	Rose atoll area (nm ²)	Rose yield/yr (lbs/yr)
2006	470,166	13,040	366,104	118,343	3.09	13,451	41,611
2007	365,220	12,255					
2008	359,568	16,294					
2009	343,586	2,775					
2010	245,572	2,043					

Blue Marlin

year	LL landings	troll landings	Average lbs/yr	EEZ area (nm ²)	Catch per area (lbs)/(nm ²)	Rose atoll area (nm ²)	Rose yield/yr (lbs/yr)
2006	56,047	0	81,455	118,343	0.68	13451	9,258
2007	84,970	204					
2008	76,297	0					
2009	91,753	0					
2010	98,006	0					

Sailfish

year	LL landings	troll landings	Average lbs/yr	EEZ area (nm ²)	Catch per area (lbs)/(nm ²)	Rose atoll area (nm ²)	Rose yield/yr (lbs/yr)
2006	12,933	0	4,853	118,343	0.04	13,451	563
2007	2,167	0					
2008	1,931	148					
2009	4,184	0					
2010	3,404	0					

Appendix V: MSY estimates of Coral Reef Species Families in the Islands Unit

Uracas/Farallon de Pajaros

*Current catch set to zero

Family	Biomass (Bc)	Current catch	Recent Catch (Yc)	M	MSY (lbs)	Ratio (in %)			
						MSY : Bc	Ycl : MSY	Ycl : Bc	Yc : MSY
Acanthuridae	20,005	0	0	0.2	2,001	10.0	0.0	0.0	0.0
Lutjanidae	21,930	0	0	0.2	2,193	10.0	0.0	0.0	0.0
Mullidae	484	0	0	0.2	48	10.0	0.0	0.0	0.0
Shark	46262	0	0	0.2	4,626	10.0	0.0	0.0	0.0
Carangidae	3,289	0	0	0.2	329	10.0	0.0	0.0	0.0
Lethrinidae	1,519	0	0	0.2	152	10.0	0.0	0.0	0.0
Scaridae	1,607	0	0	0.2	161	10.0	0.0	0.0	0.0
Serranidae	4,205	0	0	0.2	421	10.0	0.0	0.0	0.0
Holocentridae	2269	0	0	0.2	227	10.0	0.0	0.0	0.0
Kyphosidae	1321	0	0	0.2	132	10.0	0.0	0.0	0.0
Labridae	1493	0	0	0.2	149	10.0	0.0	0.0	0.0
Others	24228	0	0	0.2	2,423	10.0	0.0	0.0	0.0
TOTALS	128,612	-	-	-	12,861	-	-	-	-

Sources: biomass estimates (Luck and Dalzell (2011) which used data from Williams (2010)
 Methodology for MSY using $M = 0.2 + \text{biomass data}$ (Garcia et. al 1989)

Maug

*Current catch set to zero

Family	Biomass (Bc)	Current catch	Recent Catch (Yc)	M	MSY (lbs)	Ratio (in %)			
						MSY : Bc	Ycl : MSY	Ycl : Bc	Yc : MSY
Acanthuridae	33,533	0	0	0.2	3,353	10.0	0.0	0.0	0.0
Lutjanidae	24,385	0	0	0.2	2,439	10.0	0.0	0.0	0.0
Mullidae	1,327	0	0	0.2	133	10.0	0.0	0.0	0.0
Shark	3678	0	0	0.2	368	10.0	0.0	0.0	0.0
Carangidae	4,121	0	0	0.2	412	10.0	0.0	0.0	0.0
Lethrinidae	2,083	0	0	0.2	208	10.0	0.0	0.0	0.0
Scaridae	14,215	0	0	0.2	1,422	10.0	0.0	0.0	0.0
Serranidae	9,664	0	0	0.2	966	10.0	0.0	0.0	0.0
Holocentridae	10079	0	0	0.2	1,008	10.0	0.0	0.0	0.0
Kyphosidae	10239	0	0	0.2	1,024	10.0	0.0	0.0	0.0
Labridae	3884	0	0	0.2	388	10.0	0.0	0.0	0.0
Others	22179	0	0	0.2	2,218	10.0	0.0	0.0	0.0
TOTALs	139,387	-			13,939				

Sources: biomass estimates (Luck and Dalzell (2011) which used data from Williams (2010)
 Methodology for MSY using M = 0.2 + biomass data (Garcia et. al 1989)

Asuncion

*Current catch set to zero

Family	Biomass (Bc)	Current catch	Recent Catch (Yc)	M	MSY (lbs)	Ratio (in %)			
						MSY : Bc	Ycl : MSY	Ycl : Bc	Yc : MSY
Acanthuridae	56,036	0	0	0.2	5,604	10.0	0.0	0.0	0.0
Lutjanidae	49,903	0	0	0.2	4,990	10.0	0.0	0.0	0.0
Mullidae	2,502	0	0	0.2	250	10.0	0.0	0.0	0.0
Shark	47335	0	0	0.2	4,734	10.0	0.0	0.0	0.0
Carangidae	6,652	0	0	0.2	665	10.0	0.0	0.0	0.0
Lethrinidae	2,194	0	0	0.2	219	10.0	0.0	0.0	0.0
Scaridae	13,302	0	0	0.2	1,330	10.0	0.0	0.0	0.0
Serranidae	15,229	0	0	0.2	1,523	10.0	0.0	0.0	0.0
Holocentridae	6038	0	0	0.2	604	10.0	0.0	0.0	0.0
Kyphosidae	11802	0	0	0.2	1,180	10.0	0.0	0.0	0.0
Labridae	4126	0	0	0.2	413	10.0	0.0	0.0	0.0
Others	22740	0	0	0.2	2,274	10.0	0.0	0.0	0.0

TOTALs **237,859** - **23,786**

Sources: biomass estimates (Luck and Dalzell (2011) which used data from Williams (2010)
 Methodology for MSY using M = 0.2 + biomass data (Garcia et. al 1989)

Appendix VI: **Monument Management Board Policy on Sustenance Fishing in
Papahānaumokuākea Marine National Monument**

March 4, 2010

Proclamation 8031 (“Proclamation”) provides for sustenance fishing within Papahānaumokuākea. As defined in the Proclamation “sustenance fishing means fishing for bottomfish or pelagic species that are consumed within the monument, and is incidental to an activity permitted under this proclamation.” The Proclamation also states “The Secretaries may not permit sustenance fishing in the Midway Atoll Special Management Area unless the activity has been determined by the Director of the United States Fish and Wildlife Service or his or her designee to be compatible with the purposes for which the Midway Atoll National Wildlife Refuge was established.” In December 2008, U.S. Fish and Wildlife Service Managers determined sustenance fishing to be a compatible activity with certain stipulations.¹

From June 15, 2006, when the Monument was established, to the end of 2009, sustenance fishing outside of Midway Atoll was a permitted activity on 17 permits. The combined catch over those 3 ½ years totaled 323 fish (only one fishing log from 2009 is still outstanding). Over the past year, during which fishing was allowed within Midway Atoll, catch at the atoll has totaled 37 fish.

Beginning March 4, 2010 the following Papahānaumokuākea-wide policy will go into effect:

State waters

Sustenance fishing in State waters will continue to be prohibited.²

Federal waters (outside of Midway Atoll Special Management Area)

Sustenance fishing will no longer be allowed by permit, except when requested and approved in conjunction with a Native Hawaiian Practices permit.

Midway Atoll Special Management Area

Sustenance fishing will be permitted within the Midway Atoll Special Management Area with the following conditions:

- All fishing will be conducted for sustenance of Midway or vessel communities at the common table.^{3 4}

¹ USFWS Monument Management Plan Compatibility Determinations Dec. 12, 2008. Available at <http://www.fws.gov/pacific/planning/main/docs/HI-PI/Papahana/Compatibility%20Determinations.pdf> Midway Atoll Sustenance Fishing at pp. 136-144.

² Subsistence fishing may be permitted as authorized under State law for subsistence, traditional and customary practices by Native Hawaiians.

³ Common Table for Midway means the Midway galley, such as the “Clipper House.” Common Table for Government vessel-based agency employees, volunteers, and contractors means the ship’s galley. Common Table for other permittees on their own vessel is the Midway galley.

- The quantity of fish taken will not exceed what can be consumed by Midway residents or visiting vessel occupants within that 2-day period. No fish will be frozen.
- Total allowable take is a maximum of 300 fish per year⁵:
 - 208 by Midway Atoll residents.⁶ They may take 26 boat trips per year with up to 6 people aboard, and may catch up to 4 fish per week.
 - 92 by visiting vessels.⁷ They may catch up to 4 fish per day. NOAA ships *Oscar Elton Sette* and *Hi'ialakai*, up to 15 private vessels (e.g., sailboats), and 5 FWS contract vessels (e.g., barges) may troll for fish, en route to or from Midway, but within Midway waters, each year.
- Sustenance fishing will be conducted by deploying 2- 4 lines as vessels transit Midway waters.
- Only artificial lures will be used. Lures will be trolled in a water depth of at least 200 feet, and at a speed of at least 7 knots.⁸
- Use of wire line, down-riggers, planers, and heavy weights is not allowed.
- Fishing for bottom fish is not allowed.
- Vessels are required to navigate around aggregations of foraging (fishing) or resting seabirds, rather than navigate through them.
- Fishing lines will be tended at all times and fish will be brought into the boat as quickly as possible.
- Caught fish will be bled so the blood does not enter the ocean and attract sharks during the fishing activity.
- All fish other than 'ahi (yellowfin tuna, *Thunnus albacares*), mahimahi (dolphinfish, *Coryphaena bippurus*), and ono (wahoo, *Acanthocybiurn solandri*) will be released unharmed.
- All fishing gear will be cleaned using a mild bleach solution before use in the Monument and must also be cleaned according to Monument quarantine procedures. The bleach solution will be disposed of properly.
- Fishing is only allowed during daylight hours to guard for human safety.
- A fishing report must be submitted to the Refuge Manager after each fishing trip.⁹
- All catch data will be summarized quarterly by Midway Refuge Manager and reported annually to Monument managers to determine if catch levels are acceptable and the activity remains compatible.

⁴ Although a limit on the number of fish allowed is stipulated here, if sufficient poundage of fish is caught to provide for the common table before the number limit of fish is reached; fishing will cease.

⁵ Conservatively this may equate to 15,000 pounds of fish, or 6.8 t when Residents are at carrying capacity.

⁶ For the purposes of this sustenance fishing policy, Midway residents are defined as permanent island residents such as FWS staff, their families, and contract employees. All fishing for Midway residents will be conducted from a federally owned, shore-based, power boat operated by an agency-certified boat operator.

⁷ Visiting vessels are defined as any permitted vessel that comes into the Midway SMA. Sustenance fishing must be listed on the permitted activities for any visiting vessel.

⁸ Speeds of at least 7 knots prevent hooking albatrosses, boobies, and other seabirds that follow fishing boats. Seabirds are able to ingest lures trolled at slower speeds.

⁹ Reporting requirements: After each trip trained personnel will record all fish catch (including species, weights, lengths, and GPS location of catch), fishing effort, by-catch (including accidental catch of or interactions with seabirds, seals, turtles, sharks, nontarget fish, and other wildlife), and date of activity.

Appendix VII:



Palmyra Atoll National Wildlife Refuge

Pacific Region

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[Wildlife & Habitat](#)

[Recreation](#)

[Management](#)

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Recreation

Wildlife Observation through Diving and Snorkeling

Up to 12 visitors at any one time are allowed to participate in recreational diving and snorkeling programs. Two groups of up to 4 divers or snorkelers are allowed per boat at lagoon, channel or ocean reef sites at any given time. An additional 4 snorkelers are allowed using a third small skiff near the lagoon or channel area. Thus, the total capacity is a combination of up to 12 snorkelers and divers.

Bonefishing and Blue Water (Offshore) Fishing

Recreational bonefishing is conducted at Palmyra on a catch-and-release basis with artificial flies and barbless hooks. A total of eight anglers are allowed in the lagoons at one time, with no more than 2 fishing outings permitted per day. Catch rates are monitored through daily logs and tagging studies in order to assure sustainable fishery conditions.

The offshore sport fishing program at Palmyra allows visitors access to pelagic game-fish, including tuna (ahi), wahoo (ono), and mahi-mahi. Fishing is limited to 8 people per trip, with no more than 2 boats at a time, with up to 3 trips per day. Fishing logs are required for each trip. Only pelagic species are permitted to be kept for on-island consumption.

No sportfish of any kind are permitted to be shipped off the atoll for any reason. No bottom fish or reef fish are allowed to be targeted, and any that are accidentally caught are to be immediately released. Jacks can be fished on a catch-and-release basis, and none are permitted to be consumed or retained for any reason.

Sailing and Motorboating

With prior approval by the USFWS, privately owned vessels are permitted access to the atoll for up to 7 days to see and enjoy the natural resources of the refuge. A maximum of 2 vessels are allowed at one time and up to 6 yachts may visit in a month. Private vessels must have U.S. Coast Guard (USCG) approved holding tanks for sewage and an appropriate and current USCG inspection certificate. Additional precautions include the need for visiting yachts and ships to have clean hulls free of fouling organisms prior to entering the reefs and West Lagoon at Palmyra.

Last updated: April 5, 2011

Appendix VIII: References

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