

State of Hawai'i
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Aquatic Resources
Honolulu, Hawai'i 96813

April 24, 2015

Board of Land and Natural Resources
Honolulu, Hawai'i

Request for Authorization and Approval to Issue a Papahānaumokuākea Marine National Monument Conservation and Management Permit to Dr. Frank Parrish and Ann Garrett, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, for Access to State Waters to Conduct Shark Removal Activities

The Division of Aquatic Resources (DAR) hereby submits a request for your authorization and approval for issuance of a Papahānaumokuākea Marine National Monument conservation and management permit to Applicants Dr. Frank Parrish, Chief of Protected Species Division, and Ann Garrett, Assistant Regional Administrator for Protected Resources, of the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service, pursuant to § 187A-6, Hawai'i Revised Statutes (HRS), chapter 13-60.5, Hawai'i Administrative Rules (HAR), and all other applicable laws and regulations.

The conservation and management permit, as described below, would allow entry and management activities to occur in Papahānaumokuākea Marine National Monument (Monument), including the NWHI State Marine Refuge and the waters (0-3 nautical miles) surrounding the following site:

- French Frigate Shoals

The activities covered under this permit would occur between May 15, 2015 and May 14, 2016.

The proposed activities are a continuation of work previously permitted and conducted in the Monument since 2010.

INTENDED ACTIVITIES

The Applicants propose to conduct management activities for the conservation of Hawaiian monk seals, include the removal of predatory sharks at selected pupping sites. The proposed activities would support the recovery of Papahānaumokuākea Marine National Monument's endangered Hawaiian monk seals by reducing the likelihood of shark predation on seal pups at French Frigate Shoals (FFS). This activity, when combined with other conservation efforts, would help address the problem of low juvenile seal survival, a factor identified as one of the main causes of Hawaiian monk seal population decline in the Monument. Increased survival of pups is necessary for the species' recovery. Monitoring of shark activity at FFS, to be conducted

to inform shark removals, is included within the Co-Trustee Conservation and Management permit, PMNM-2015-001.

Applicants aim to remove a maximum of eighteen (18) sharks between May 15, 2015 and May 14, 2016 within a 700-meter distance from shore and depths of approximately 25 feet. This depth is required for the efficiency of the bottomset and drum-line gear methods proposed. Shark removals would be limited to Galapagos sharks (*Carcharhinus galapagensis*), as they are the only shark species that staff of the Hawaiian Monk Seal Research Program (HMSRP) has positively identified pursuing, injuring or killing pups during observations over the last 10 years. Fishing efforts will focus on capturing Galapagos sharks displaying the unique predatory behavior of killing Hawaiian monk seal pups.

The Applicants propose to remove Galapagos sharks (tail length of 200 cm or greater) within 700 m of selected pupping sites. Sharks would be caught by the following methods: 1) hand line, 2) hand-held harpoon, 3) drum-line and/or 4) small 10 hook bottomset.

For all methods, hooked Galapagos sharks would be brought into shore, or alongside a small boat, tail roped and humanely killed with a bangstick. Shark carcasses would then be examined (gross necropsy), sampled on-site for future scientific analysis (isotope, fatty acid, genetic analysis) and any suitable shark tissue used as bait. Shark remains would be handled as deemed appropriate by members of the Native Hawaiian community and State of Hawai'i Office of Hawaiian Affairs. Current guidance is that remains not used as bait would be returned to the ocean outside the atoll (0.5 miles beyond the break reef from Tern Island).

The Applicants propose to use tuna heads, salvaged Hawaiian monk seal tissue (e.g., from seals that had previously died), and other bait previously approved for use in the Monument. Previously permitted fishing expeditions have shown there is a higher catch per unit of effort for Galapagos sharks when Hawaiian monk seal tissue was used as bait at FFS (2015 Parrish-Garrett application, Item F-1a).

Fishing will only occur during daylight hours and if Galapagos sharks exhibiting predatory behavior are nearby. Soak time for all bait would be limited to one to three hours.

The activities proposed by the Applicants directly support the Monument Management Plan's priority management need 3.2 - Conserving Wildlife and Habitats, 3.2.1 - Threatened and Endangered Species Action Plan, activity TES 1.6 - Reduce shark predation on monk seals. In addition, monitoring shark activity and removing sharks are both listed in the Hawaiian Monk Seal Recovery Plan (NMFS 2007) as necessary activities, critical to the species' recovery.

The activities described above may require the following regulated activities to occur in State waters:

- Removing, moving, taking, harvesting, possessing, injuring, disturbing, or damaging any living or nonliving Monument resource
- Drilling into, dredging, or otherwise altering the submerged lands other than by anchoring a vessel; or constructing, placing, or abandoning any structure, material, or other matter on the submerged lands

- Anchoring a vessel
- Discharging or depositing any material or matter into the Monument
- Possessing fishing gear except when stowed and not available for immediate use during passage without interruption through the Monument
- Attracting any living Monument resource

REVIEW PROCESS

The permit application was sent out for review and comment to the following scientific and cultural entities: Hawai'i Division of Aquatic Resources, Hawai'i Division of Forestry and Wildlife, Papahānaumokuākea Marine National Monument (NOAA/NOS), NOAA Pacific Islands Regional Office (NOAA-PIRO), United States Fish and Wildlife Service Hawaiian and Pacific Islands National Wildlife Refuge Complex Office, and the Office of Hawaiian Affairs (OHA).

The application was also sent to the PMNM Native Hawaiian Cultural Working Group (CWG) Permits Sub-Committee for comment. Comments received from the group are listed in the comments received from the Native Hawaiian community. We are mindful, however, that the standing position of the full membership of the CWG is that this issue not be brought back before them "until further notice", and remains in effect.

In addition, the permit application has been posted on the Monument Web site since February 20, 2015, giving the public an opportunity to comment. The application was posted within 40 days of its receipt, in accordance with the Monument's Public Notification Policy.

Comments received from the scientific community are summarized as follows:

Scientific reviews support the acceptance of this application.

On behalf of the applicants (NMFS PIFSC and PIRO), we offer the following responses to the PMNM permit reviewer questions and comments regarding application number PMNM-2015-009 Parrish/Garrett. Please note, however, that we believe that some of the questions and comments require more thorough consideration than possible within the deadline and broader perspective than available solely within NOAA. In particular, believe that further dialogue is needed to better understand and address some of the questions and comments which appeared to have originated from the CWG. We look forward to this dialogue at the reviewers' convenience.

The following questions were raised:

1. The permit application states (page 9) that the maximum number of Galapagos sharks targeted for removal to address predation on seals at FFS, is 20. This number was identified during a shark predation workshop in 2010.
 - a. In the five years that have passed since, has that number been reassessed and confirmed?

- b. If such a reassessment and confirmation has occurred, what data and references support it?
2. OHA understands the removal of the full number (20) of Galapagos sharks potentially equates to no additional seal deaths from predation.
 - a. Is there a “formula” for the specific number of seals that will (or are anticipated to) survive per one Galapagos shark removed?
 - b. In other words, would removal of ten sharks, cut the predation rate in half and so on?
 - c. Have the two sharks already removed resulted in a specific number of seals who have survived? If so-
 - d. Are there data to support this?

Joint response to 1 and 2:

We continue to monitor seal populations and track our shark removal efforts each year. We have thus updated and confirmed our information on shark predation and impacts to pup survival at French Frigate Shoals (FFS), however, we have not altered our removal goals since 2010. The quota number was determined in 2009 based on approximately 10 years of observation by NMFS. It has been maintained because incoming information since 2009 supports it. Specifically, the quota of 20 Galapagos sharks is based on the premise that a small subset of Galapagos sharks is predating on nursing and newly weaned pups in the shallows at FFS. This premise is supported by our direct and video observations. It is also supported by the work of Carl Meyer’s (University of Hawai’i) research on the number of tagged sharks that enter the shallows during the pupping season and the number of those that spend time near the pupping islets. If predation were to sharply decrease after some subset of sharks is removed, we would then pause fishing efforts and monitor. If no predation occurs over the course of a few years we would likely consider the effort successful and not request additional removals. However, if predation resumes we would continue to request the target quota.

To clarify further, it is uncertain if this number of sharks removed in one season or over several will differently mitigate predation; it is also uncertain if new Galapagos sharks would move in and at what rate, given the movement habits of Galapagos sharks. Operating on a precautionary principle and in an adaptive management framework, NMFS believes that proceeding with a plan for a limited and highly selective removal program has the best chance of reducing seal pup mortalities.

Also, we have not correlated the previous shark removals with an improvement in pup survival because, as stated in the 2015 permit application (p 17), we do not expect an improvement in pup survival for 1-2 years after we have approached the quota of shark removals requested. The quota has yet to be reached, and the expected lag time has obviously not passed. Therefore, a formal analysis on shark removal impacts since 2010 is not possible.

3. OHA is interested in continuing discussions on how Hawaiian culture, values, resource management concepts, expertise, etc. can be institutionalized in the HMSRP. Of course, we are also interested in how conventional science can be integrated in the

aforementioned. If this integration can be successfully completed and implemented in HMSRP activities, it may potentially “bridge” the divide between views on this issue.

- a) Until the above is accomplished, if the instant permit application is approved, will any individual covered by it have a demonstrated understanding of Hawaiian culture, values, resource management concepts, expertise, etc.?

While none of our staff are Hawaiian cultural experts themselves, they are dedicated conservation scientists with an abiding respect for nature and they act with what we believe to be appropriate levels of solemnity and professionalism for this activity. They do not enjoy the activity of removing sharks and they endeavor to do so in the most humane and respectful way they can. Further, several of those involved in this permit activity include long-term returning staff with decades of combined experience and expertise in the proposed protocol and in wildlife research and resource management in the Monument and elsewhere. All NMFS monk seal field camp staff and volunteers who work at FFS (where the proposed activities occur) and throughout the Monument attend Hawaiian cultural awareness training by Monument staff before they depart for their fieldwork. We would be happy to discuss additional measures we could take to enhance our staff understanding of Hawaiian culture, values, resource management concepts, expertise, etc.

4. Request that the applicants notify PMNM if any Galapagos sharks tagged with spaghetti tags or internal Vemco acoustic tags are taken.

We will be happy to notify PMNM of any tagged sharks. We would be happy to return any tags found to the owners/investigators tracking them.

5. Please expand on the discussion related to the “taking” (killing) of one species for the sake (recovery/survival) of another (in this case endangered). From a conventional management view, it would be helpful to provide examples from elsewhere when such an approach (“managing the threat”) has been taken and the reasons behind that approach. If such examples exist- does the rationale (support) there apply here (to this activity proposal).
 - a. Additionally, a concern that OHA is mindful of (it was expressed at CWG meetings circa 2010-11), is that shark predation on seals is a “natural” occurrence. Man interfering on that occurrence can be viewed as an intrusion. The thought process that supports the removal of invasive plant species (intentionally or unintentionally introduced to Hawai‘i) to protect endemic plant species here does not apply. Because OHA is familiar with previous permit applications and discussion related to this proposed activity, we have a basic understanding of the justification that supports taking one indigenous species in favor of an endemic species. It would be helpful if the instant permit application (or an attachment) includes a detailed discussion on this issue.

It is a weighty consideration for humans to intervene in nature by managing threats to one species at the expense of another. However, these types of hard decisions are actually common, and are part of well-established theory in the fields of wildlife management and endangered

species recovery, as exemplified in the paper “Control of abundant native vertebrates for conservation of endangered species” by Goodrich and others (1995). Other cases where such difficult action has been taken include the lethal removal of barred owls to preserve endangered populations of spotted owls in the Pacific Northwest, and in Hawai‘i the removal of pigs (while not necessarily native, a long established species with cultural significance) to protect habitat of threatened forest bird populations. In these cases the risk to endangered species was far greater than the impact to the population of the targeted species, there were specific plans and limited numbers and/or areas slated for removal of the targeted animals. These criteria apply to the current situation as well: monk seal recovery is being severely hindered by shark predation on pups, meanwhile our selective removal of only up to 20 sharks will have minimal impact on the population of this creature.

[Control of abundant native vertebrates for conservation of endangered species](#)

- JM Goodrich, [SW Buskirk](#) - Conservation Biology, 1995 -

6. Please expand on the additional consultation efforts with the Native Hawaiian community other than the CWG. Please note that we are not asking for the names of specific individuals, just more details and background on this additional consultation.

NMFS has made consultation and coordination with Native Hawaiian Communities and practitioners regarding monk seal conservation a high priority for at least the past 6 years. We were able to hire a full-time Native Hawaiian Community cultural liaison contractor, as well as part-time liaisons based on Kaua‘i, O‘ahu, and Maui, who worked for NMFS for two years (in 2010 and 2011) until severe funding cuts made this no longer possible. We believe these contractors made significant progress in making helpful connections between NMFS and Native Hawaiian Communities, but we knew more work was needed. In 2012 and 2013, we conducted a comprehensive Cultural Impact Assessment (CIA) and NHPA Section 106 compliance process in associated with our application for a new permit for Hawaiian monk seal recovery actions. The CIA and National Historic Preservation Act (NHPA) Section 106 processes entailed numerous community meetings on all the main Hawaiian Islands except Ni‘ihau and Kaho‘olawe.

Most recently, we have convened a new Hawaiian monk seal recovery team that includes at least 6 members with strong ties to Hawaiian culture, traditions and practices. This new team has met twice since it was established about one year ago and has begun a productive dialogue regarding a variety of important topics. We expect that the team will place emphasis integration with, and perpetuation of, Hawaiian culture related to monk seal conservation and sustainable marine resource use.

There are other examples of how we have prioritized consultation and coordination with Native Hawaiian Communities, but it is important to note that this engagement included a variety of topics related to Hawaiian monk seals in addition to the specific topic of our shark predation mitigation activities at French Frigate Shoals. We have provided relatively extensive descriptions of our consultations and engagement with Native Hawaiian Communities specific to the shark predation mitigation activities in previous permit applications and did not include these descriptions in the most recent application for the sake of brevity. We would be happy to work

with the permit reviewers to make sure they have access to these descriptions, but in very brief summary, we have discussed the activities with the Cultural Working group on two different occasions, have sponsored a native Hawaiian cultural practitioner to join a trip aboard our research vessel to experience the field camps in the Monument, and engaged in numerous talk story sessions regarding the admittedly challenging topic with many Hawaiian community leaders and practitioners with whom we have gained trust and support.

7. Because OHA is familiar with previous permit applications and discussion related to this proposed activity, we have a basic understanding of why seal flesh will be used as bait. This permit application mentions the use of seal flesh as bait but does not include a specific discussion (supported by scientific evidence/expert analysis) on why it will be used. The lack of this discussion is disadvantageous for those who are unfamiliar with previous permit applications or discussions. It would be helpful to have the discussion in the instant permit application.

We agree additional background would be helpful. This is included in addressing comment #10 which also expressed concerns about seal tissue as bait.

8. As discussed previously between OHA and the HMSRP, there is a larger need across the Hawaiian Archipelago to develop long-term relationships with communities that continue to strengthen overall seal recovery activities. Please take this into consideration and OHA is always willing to continue discussions.

We too appreciate the need to continue to build on and augment the relationships with Native Hawaiian Communities that we have already established (please see response to #6 above). We look forward to strengthening our relationship with OHA as our willing partners in this endeavor. We appreciate the support!

9. We appreciate NMFS's presentation offered to our agency, and the efforts to support each other's mission of the natural resources within PMNM.

Comments received from the Native Hawaiian community are summarized as follows:

1. How does this approach support the ecological integrity of the Monument? And how do you define ecological integrity? How do you define cultural integrity?

NMFS is charged with conservation of the Hawaiian monk seal. Maintaining monk seals as a functioning element of the Monument ecosystem is absolutely critical to the ecological integrity of the Monument. A type of shark predation, that is potentially a response to historical human activities in the Monument, is occurring at an unsustainable level at FFS and has contributed to the continued dramatic decline of the seal population at that atoll. Mitigation of this predation in the way proposed will potentially have a significant benefit to the Hawaiian monk seal population while leaving a robust and functioning Galapagos shark population. Thus, mitigating this source of mortality is absolutely consistent with supporting the integrity of the Monument ecosystem.

We do not presume to be qualified to define cultural integrity. However, given our limited understanding of cultural integrity as a way of describing cultural wholeness and having the best intentions while dealing with situations that affect the Native Hawaiian community/culture, it is our view that cultural integrity also benefits from a resilient monk seal population. We would appreciate further discussion on the meaning of cultural integrity, as well as linkages between cultural and ecological integrity.

2. Why are sharks euthanized in the manner described?

Sharks will be euthanized with a .44 caliber bang stick because this is a tool specialized for quick and humane euthanasia while minimizing risk to people and non-target wildlife. These tools fire on contact with the target, thus eliminating dangers associated with any alternative method, and maximizing a quick and humane kill of the target while minimizing chances of missed shots or non-target hits. HMSRP has established bangstick training and safety protocols and conduct an annual Operational Risk Management (ORM) for shark fishing operations.

3. Please expand on the cultural significance of the affected species and the background research that was completed:

- a. What is the cultural significance of sharks to Native Hawaiian cultural practice and beliefs?
- b. What is the cultural significance of seals to Native Hawaiian cultural practice and beliefs?
- c. What potential cultural impacts may occur from the removal of the sharks? How do you propose to mitigate if there are any impacts?
- d. What potential cultural impacts may occur from an increase in the monk seal population across the pae‘āina? How do you propose to mitigate if there are any impacts?

The Hawaiian monk seal program has demonstrated a dedication to working with Native Hawaiian Communities and incorporating cultural considerations in our seal management, research, and recovery actions. We have conducted thorough and participatory assessments of monk seals' role in Hawaiian culture, as well as cultural impacts of seal recovery (reflected in our Programmatic Environmental Impact Statement, links below). Additionally we are currently working with a diverse group including cultural practitioners on our Hawaiian Monk Seal Recovery Team. As mentioned in the introductory paragraph, we recognize that marine species, such as sharks and monk seals, as well as acts that cause "take" of these species, have significance in Hawaiian culture. We would be appreciative of gaining additional insight and guidance, including input from OHA and the CWG. We look forward to further dialogue on cultural issues with OHA, the CWG, and other relevant parties. We would be interested in working with Native Hawaiian Communities and cultural practitioners to support access to the Monument and further involvement in our activities there if such opportunities are available in the future.

PEIS Appendix J: Significance of Monk Seals in Hawaiian Culture

http://www.nmfs.noaa.gov/pr/pdfs/hawaiianmonkseal_recovery_actions_peis/appendix_j.pdf

PEIS Appendix K: Cultural Impact Assessment

http://www.nmfs.noaa.gov/pr/pdfs/hawaiianmonkseal_recovery_actions_peis/appendix_k.pdf

4. How does this approach address the anthropogenic practices that initiated this interaction?

We are aware of several ideas or “hypotheses” put forth by various people regarding anthropogenic practices or other factors that may have some causal relation to the unique predatory interaction of Galapagos sharks focused on nursing monk seal pups at French Frigate Shoals. For example cast-off bait from previous fisheries is hypothesized to have artificially enlarged the shark populations. Another possibility is that the disappearance of some islets in the atoll led to concentration of pups that attracted sharks to remaining beaches. Most likely a complex confluence of events and environmental conditions has led to the current situation, and we have no evidence supporting any causal hypothesis enough to develop any feasible remedy. While previous anthropogenic factors such as fishing or baiting that may have contributed to the behavior have stopped, the sharks that have developed seal-focused predatory behavior remain. We have identified the most practical and feasible approach to address the monk seal problem most immediately at hand and it is our responsibility under the ESA and the Monument’s management plan to implement this approach take this action.

5. Why is the offer of remains to the Hawaiian community secondary to the scientific use of the carcass?

All requests for shark remains will be equally weighted and honored to the best of our ability under any constraints of logistics, MMB, and State Land Board permissions. Research samples were specifically mentioned because we have specific requests from researchers for particular shark tissues. We have worked with OHA in the past to provide shark teeth and skin for Hawaiian cultural use and we are happy to discuss continuing this practice in the future.

6. When does shark culling stop? Will this activity continue to be requested in Papahānaumokuākea if zero sharks are caught again?

We will always consider the best course of action for monk seal recovery, while maintaining overall ecosystem integrity, based on information such as the number of pups lost to predation and the number of sharks removed. If the number of sharks removed in 2015 approximates 18, and no improvement in the proportion of pre-weaned and newly weaned pups lost to sharks (confirmed and inferred mortalities) is detectable within 1-2 years, then the idea of any additional shark removals will require careful consideration. If shark removal does not approximate 18 individual then it is unlikely that we will see a substantial decrease in shark predation and improvement in survivorship of young seals and future requests for the activity will continue. If predation ceases, then future requests for this activity are unlikely.

7. I did not find any of the scientific papers that were cited in this permit. Is it possible to make sure they are included for the whole permit review committee? Perhaps I do not know where to look, forgive me if I am missing something.

PIFSC can compile a folder of pdf’s if desired.

8. Are there plans to do science to determine the success of this endeavor? Are there plans to do science to show that the removal of the G. Sharks is supporting Monk Seal recovery. Again please forgive me if I am missing something.

As per p16 of the application: The ultimate goal of the proposed conservation and management activity is to reduce the threat of shark predation to pre-weaned and newly weaned monk seal pups at FFS. The proximate goals are to monitor shark activity and remove up to 18 additional Galapagos sharks within 700m of shore of Trig, Round, Gin and Little Gin islets. We will consider the activity to have been successful if the proximate goals are achieved in 2015 and the ultimate goal is apparently met within 1- 2 years thereafter.

In terms of success, we define success in the short-term as safely executing the mission to monitor and remove up to 18 adult Galapagos sharks near pupping sites and translocate weaned pups to safe islets. Per annum, this may translate to less than 18 sharks removed because CPUE has proven to be exceedingly low near the islets. In the long-term success is defined as first, achieving the proximate goal and then after an expected lag time (e.g. 1-2 years), meeting the ultimate goal.

These measures of success will be scientifically evaluated as part of our long-term monitoring activities in the NWHI. Pup survival and causes of mortality will be tracked based on seal tagging and observations, survival at FFS will be compared to observations at other sites in the NWHI, and rates will be assessed in context of shark removal activities as well as other observed risk factors.

9. On page 10 under Historic Preservation I believe you are referring to the National Historic Preservation Act as amended (NHPA). You have claimed that no NHPA resources will be affected but I do not see any analysis of the “tangible and intangible traditional and cultural properties and /or resources” found in the National Historic Preservation Act under Bulletin 38. Bulletin 38 is to be included in Section 106 and takes into account cultural resources that are not necessarily physical in nature but equally important culturally (i.e. the bodily forms of Kanaloa). Both are required to be taken into account under NHPA. To learn more you can look up Bulletin 38 by Dr. Thomas King)

We will take this under consideration and are willing to discuss this further.

10. I am *strongly* opposed to using Monk Seal flesh to attract G. Sharks (see P. 10). Again while I acknowledge that all knowledge does not come from one school or house of learning, I can firmly say that within my own house of learning every good fisher child knows not to feed sharks that come after your fish because it will habituate them to you and your future fish. This practice will certainly habituate them to the taste of seal, which is the problem you are trying to overcome. I am strongly opposed to this practice of using seal flesh to attract the G. Shark for killing and would offer as an alternative that it would be better to use food you would like them to be habituated to and not what you are working to overcome!

We recognize both the cultural and biological concerns brought up by the use of tissue from deceased seals in baiting predatory sharks. We have put careful consideration into both of these

areas. To offer more clarification, we are not planning to feed any sharks, nor are we using seal tissue as a bait in the form of “chum” or palu to attract sharks. The only seal tissue in the water will be securely baited to fish hooks. We believe the chances of habituating sharks to come after monk seals (more so than they already are) will be quite low, because the only way for a shark to get the seal tissue bait is for it to take the hook as well, and there is generally no positive reinforcement promoting habituation for any shark when it takes a hook.

In 2013 with the addition of seal tissue as bait, we were encouraged by the State of Hawai‘i Board of Land and Natural Resources to communicate with, and be responsive to, stakeholders regarding this activity. We alerted approximately 35 organizations and individuals about our field activities during the 2013 field season (including shark fishing) and updated them on our plans for the 2014 season. To date, none of these entities has expressed questions or concerns.

We also undertook consultations regarding the use of tissue from previously deceased monk seals as bait with several Native Hawaiians with whom we have been working with on other monk seal issues. In this regard, we have held one-on-one discussions with several individuals (cultural practitioners, partners, and/or advisors). Input we received during these one-on-one discussions ranged from full support and understanding to acceptance without expressed support. The overarching sentiment we have heard has been that as long as the seals would be dead of a cause beyond our control (which would be the case), using their bodies to try to save a still living seal, while admittedly difficult to consider or undertake, would be a reasonable effort in light of the endangered status of the monk seal population.

The biological premise for baiting sharks with seal tissue is that this will be the bait most appropriate to lure sharks already attracted to seal tissue. Because our fishing techniques are highly targeted, we would not be provisioning sharks with seal tissue, and would expect dangers of habituation to be minimal (particularly as those target animals caught with seal tissue bait will be euthanized and no longer in the population to display habituation). Regarding our selective handline fishing procedures, small bait sizes should be effective, and the probability of bycatch (non-targeted sharks) should be low because the hook will not be dropped and left to passively fish. It will instead be actively worked close to shore where staff will be able to see the baited hooked. The gear will be pulled when potential bycatch are seen close and/or are showing interest in our baited gear. Thus, the food source can be removed from non-target animals ensuring that they do not feed on seal tissue, thus avoiding dangers of habituation. We should be able to use small bait pieces with no bycatch and maximum effectiveness in terms of target shark removal.

11. Throughout your report you refer to Native Hawaiians as Stake Holders. Native Hawaiians are considered Right-Holders, that is, they are the ones that the laws and constitutional protections were specifically written to protect. The reason this is important is because Stakeholder may have an interest but they do not hold the same interest and hence rights as Right Holders. This should be reflected in your reports in the future and in the Monument paperwork overall as well.

We will take this under consideration and are willing to discuss further.

Comments received from the public are summarized as follows:

No comments were received from the public on this application.

Additional reviews and permit history:

Are there other relevant/necessary permits or environmental reviews that have or will be issued with regard to this project? (e.g., MMPA, ESA, EA) Yes No

If so, please list or explain:

- NMFS ESA/MMPA Research and Enhancement Permit 10137-7.
- A request for an informal consultation pursuant to Section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. §1531 *et seq.*) is underway to analyze the effects of proposed activities within the Monument on protected species and designated monk seal critical habitat. The outcome of this consultation may require the applicant to adhere to other NMFS-prescribed conditions. Such conditions would be reflected in the PMNM permit, prior to issuance.
- NMFS 2009. Programmatic Environmental Assessment of the Program for Decreasing or Eliminating Predation of Pre-weaned Hawaiian Monk Seal Pups by Galapagos Sharks in the NWHI. Pacific Islands Fisheries Science Center, Protected Species Division, Hawaiian Monk Seal Research Program.
- NMFS 2010. Supplemental Environmental Assessment of the Program for Decreasing or Eliminating Predation of Pre-weaned Hawaiian Monk Seal Pups by Galapagos Sharks in the Northwestern Hawaiian Islands. Pacific Islands Fisheries Science Center, Protected Species Division, Hawaiian Monk Seal Research Program.
- The Department has made an exemption determination for this permit in accordance chapter 343, HRS, and Chapter 11-200, HAR. See Attachment (“DECLARATION OF EXEMPTION FROM THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT UNDER THE AUTHORITY OF CHAPTER 343, HRS AND CHAPTER 11-200 HAR, FOR PAPAĀNAUMOKUĀKEA MARINE NATIONAL MONUMENT CONSERVATION AND MANAGEMENT PERMIT TO DR. FRANK PARRISH AND ANN GARRETT, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, NATIONAL MARINE FISHERIES SERVICE, FOR ACCESS TO STATE WATERS TO CONDUCT SHARK REMOVAL ACTIVITIES UNDER PERMIT PMNM-2015-009.”

Has Applicant been granted a permit from the State in the past? Yes No

If so, please summarize past permits:

- The applicant was granted permit PMNM-2007-053 in 2007 for unrelated work and permits PMNM-2010-014, PMNM-2011-007, PMNM-2012-013, PMNM-2013-017, and PMNM-2014-023 from 2010 to 2014 for similar work.
- George “Bud” Antonelis was granted permit PMNM-2007-025 in 2007 for activities similar to those being proposed by the current Applicants.

Have there been any a) violations: Yes No
 b) Late/incomplete post-activity reports: Yes No

Are there any other relevant concerns from previous permits? Yes No

STAFF OPINION

PMNM staff is of the opinion that Applicants have properly demonstrated valid justifications for their application and should be allowed to enter the NWHI State waters and to conduct the activities therein as specified in the application with the following special instructions and conditions, which are in addition to the Papahānaumokuākea Marine National Monument Conservation and Management Permit General Conditions, and include the special condition which addresses field reporting that the BLNR imposed in 2011 for this activity (See Recommendation section, #6.). All suggested special conditions have been vetted through the legal counsel of the Co-Trustee agencies (see Recommendation section).

MONUMENT MANAGEMENT BOARD OPINION

Although not in unanimous agreement, the majority of MMB agencies support the proposed activity as originally submitted in recognition of the dire status of Hawaiian monk seals, and the limited range of recovery options available to address this situation. The agencies in support therefore recommend issuance of a permit for activities included in the original proposal, with conditions similar to those stipulated in prior permits for this activity. The MMB further recognizes that concerns remain regarding these efforts to selectively remove sharks in relation to Native Hawaiian cultural impacts and correlation of the outcomes to endangered species recovery.

RECOMMENDATION:

That the Board authorize and approve a Conservation and Management Permit, to Dr. Frank Parrish and Ann Garrett, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, with the following special conditions:

1. This permit is not to be used for nor does it authorize the sale of collected organisms. Under this permit, the authorized activities must be for noncommercial purposes not involving the use or sale of any organism, by-products, or materials collected within the Monument for obtaining patent or intellectual property rights.
2. The permittee may not convey, transfer, or distribute, in any fashion (including, but not limited to, selling, trading, giving, or loaning) any coral, live rock, or organism collected under this permit without the express written permission of the Co-Trustees.
3. To prevent introduction of disease or the unintended transport of live organisms, the permittee must comply with the disease and transport protocols attached to this permit.
4. Tenders and small vessels must be equipped with engines that meet EPA emissions requirements.

5. Refueling of tenders and all small vessels must be done at the support ships and outside the confines of lagoons or near-shore waters in the State NWHI Marine Refuge.
6. Permittee is required to provide in writing to the Monument Management Board (MMB), a field report after any lethal catch, to include species, size, and GPS coordinates of capture location within a week of capture date, unless unforeseen field communications inhibit this time frame to be met.

Respectfully submitted,



Maria Carnevale

State Co-Manager

Papahānaumokuākea Marine National Monument

APPROVED FOR SUBMITTAL



CARTY CHANG
Interim Chairperson

Papahānaumokuākea Marine National Monument
CONSERVATION AND MANAGEMENT Permit Application

NOTE: *This Permit Application (and associated Instructions) are to propose activities to be conducted in the Papahānaumokuākea Marine National Monument. The Co-Trustees are required to determine that issuing the requested permit is compatible with the findings of Presidential Proclamation 8031. Within this Application, provide all information that you believe will assist the Co-Trustees in determining how your proposed activities are compatible with the conservation and management of the natural, historic, and cultural resources of the Papahānaumokuākea Marine National Monument (Monument).*

ADDITIONAL IMPORTANT INFORMATION:

- Any or all of the information within this application may be posted to the Monument website informing the public on projects proposed to occur in the Monument.
- In addition to the permit application, the Applicant must either download the Monument Compliance Information Sheet from the Monument website OR request a hard copy from the Monument Permit Coordinator (contact information below). The Monument Compliance Information Sheet must be submitted to the Monument Permit Coordinator after initial application consultation.
- Issuance of a Monument permit is dependent upon the completion and review of the application and Compliance Information Sheet.

INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED

Send Permit Applications to:
NOAA/Inouye Regional Center
NOS/ONMS/PMNM/Attn: Permit Coordinator
1845 Wasp Blvd, Building 176
Honolulu, HI 96818
nwhipermit@noaa.gov
PHONE: (808) 725-5800 FAX: (808) 455-3093

SUBMITTAL VIA ELECTRONIC MAIL IS PREFERRED BUT NOT REQUIRED. FOR ADDITIONAL SUBMITTAL INSTRUCTIONS, SEE THE LAST PAGE.

Papahānaumokuākea Marine National Monument Permit Application Cover Sheet

This Permit Application Cover Sheet is intended to provide summary information and status to the public on permit applications for activities proposed to be conducted in the Papahānaumokuākea Marine National Monument. While a permit application has been received, it has not been fully reviewed nor approved by the Monument Management Board to date. The Monument permit process also ensures that all environmental reviews are conducted prior to the issuance of a Monument permit.

Summary Information

Applicant Name: Frank Parrish, PhD. and Ann Garrett
Affiliation: NOAA-NMFS-PIFSC/PIRO

Permit Category: Conservation and Management
Proposed Activity Dates: May 15, 2015 - May 14, 2016
Proposed Method of Entry (Vessel/Plane): NOAA RV Hi'ialakai or Sette
Proposed Locations: French Frigate Shoals

Estimated number of individuals (including Applicant) to be covered under this permit: 8
Estimated number of days in the Monument: 120

Description of proposed activities: (complete these sentences):

a.) The proposed activity would...
potentially reduce Galapagos shark (G. shark) predation on suckling or recently weaned pups at French Frigate Shoals.

b.) To accomplish this activity we would
remove G. sharks (tail length of 200cm or greater) caught within 700m of select pupping sites. Sharks would be caught by the following methods: 1) hand line, 2) hand-held harpoon, 3) drum-line, and/or 4) small 10-hook bottomset. For all methods, hooked sharks will be pulled into shore or along side a small boat, tail-roped and killed with a bangstick. Shark carcasses will be examined (gross necropsy), sampled for future scientific analyses (isotope, fatty acid, genetic analysis) and any suitable shark tissue used as bait. Thereafter, remains would be returned to the ocean or handled as deemed appropriate by Native Hawaiian community members.

c.) This activity would help the Monument by ...
conducting activities identified in the Papahānaumokuākea Marine National Monument Management Plan (December 2008, hereinafter referred to as MMP) Priority Management Needs: 3.2 Conserving Wildlife (Hawaiian monk seals), and 3.3 Reducing Threats (predation) to Monument Resources (Hawaiian monk seals), as well as the Co-

Trustee's Conservation & Management Activity: Natural Resource Protection, as listed in section 6.3 of that Monument permit application.

The Co-Trustees, including NOAA, aim to accomplish natural resource protection by conducting "...management actions to promote the conservation of Monument resources which includes activities necessary to carry out protection of species, such as carrying out existing recovery plans" to fulfill our obligations under the Endangered Species Act (MMP page 11). Removal of sharks as a means of managing the threat of shark predation will protect Hawaiian monk seal pups, increasing the chances these pups will grow to adults and reproduce. This is necessary to the species' recovery. Monitoring shark activity and removing sharks are both listed in the Hawaiian Monk Seal Recovery Plan (NMFS 2007) and endorsed by the Hawaiian Monk Seal Recovery Team as necessary activities, critical to the species' recovery.

Other information or background:

This is a broad summary of the pertinent facts related to this permit. Additional information can be found in supplemental information attached with this application.

- The Hawaiian monk seal is an endangered species numbering approx 1,100 individuals.
- In the PMNM, the key threats to the survival of the species are falling birth rates combined with poor survival of juvenile Hawaiian monk seals to reproductive age.
- The primary source of pup mortality at French Frigate Shoals (FFS; once home to the largest monk seal subpopulation) is the unique predatory behavior of a small number of G. sharks, which target nursing and newly weaned pups.
- Predation peaked in 1997-1999; it continues at a rate of 5-11 pups per year from 2000-2014 (usually 15-25% of the pup cohort each year).
- Between 1997 and 2014, shark predation affected approximately 250 pups out of roughly 1000 born at FFS. Sharks have killed many pups and others were permanently maimed by severe shark bites and subsequently died.
- Since 1997, NMFS has engaged in a variety of actions to address this threat, including pre-weaning and translocating pups, predator deterrents, and targeted fishing activities to remove problem G. sharks.
- Despite the suite of activities implemented by NMFS, the monk seal population in the NWHI, and particularly at FFS, has continued to decline.
- Pup predation by G. sharks therefore has an escalating impact on the remaining population.
- Removing the sharks exhibiting this behavior from the environment is the most effective means of preventing continued predation.
- NMFS has consulted numerous stakeholders including Native Hawaiians, animal welfare groups, conservation professionals, and the general public. Opinions and concerns are varied between individuals but no external group has requested NMFS cease this activity.

- This activity has been approved and undertaken safely and respectfully almost every year since 2010.
- Successful removal of these individuals could have a profound effect on the monk seal population at French Frigate Shoals while having negligible impact on the G. shark population.

Section A - Applicant Information

1. Applicant

Name (last, first, middle initial): Dr. Frank Parrish and Ann Garrett

Title: Chief of Protected Species Division, PIFSC, NMFS,
Assistant Regional Administrator, Protected Resources Division, PIRO, NMFS

1a. Intended field Principal Investigator (See instructions for more information):
Shawn Farry (Probable field camp leader for French Frigate Shoals)

2. Mailing address (street/P.O. box, city, state, country, zip):

[REDACTED]

Phone: [REDACTED]

Fax: [REDACTED]

Email: [REDACTED]

For students, major professor's name, telephone and email address:

3. Affiliation (institution/agency/organization directly related to the proposed project):
NOAA-NMFS-PIFSC-PSD and NOAA-NMFS-PIRO-PRD

4. Additional persons to be covered by permit. List all personnel roles and names (if known at time of application) here (e.g. John Doe, Research Diver; Jane Doe, Field Technician):

Charles Littnan, PhD, Lead Scientist, Hawaiian Monk Seal Research Program;
Shawn Farry, JIMAR, FFS Field Camp Leader;
Mark Sullivan, JIMAR, field biologist
TBA (1-3 staff), JIMAR, field biologists

Section B: Project Information

5a. Project location(s):

- | | | | |
|---|--|---|-------------------------------------|
| <input type="checkbox"/> Nihoa Island | <input type="checkbox"/> Land-based | <input type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input type="checkbox"/> Necker Island (Mokumanamana) | <input type="checkbox"/> Land-based | <input type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input checked="" type="checkbox"/> French Frigate Shoals | <input checked="" type="checkbox"/> Land-based | <input checked="" type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input type="checkbox"/> Gardner Pinnacles | <input type="checkbox"/> Land-based | <input type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input type="checkbox"/> Maro Reef | | | |
| <input type="checkbox"/> Laysan Island | <input type="checkbox"/> Land-based | <input type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input type="checkbox"/> Lisianski Island, Neva Shoal | <input type="checkbox"/> Land-based | <input type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input type="checkbox"/> Pearl and Hermes Atoll | <input type="checkbox"/> Land-based | <input type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input type="checkbox"/> Midway Atoll | <input type="checkbox"/> Land-based | <input type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input type="checkbox"/> Kure Atoll | <input type="checkbox"/> Land-based | <input type="checkbox"/> Shallow water | <input type="checkbox"/> Deep water |
| <input type="checkbox"/> Other | | | |

Ocean Based

Remaining ashore on any island or atoll (with the exception of Midway & Kure Atolls and Field Camp staff on other islands/atolls) between sunset and sunrise.

NOTE: There is a fee schedule for people visiting Midway Atoll National Wildlife Refuge via vessel and aircraft.

Location Description:

Camping and fishing activities will occur at Trig, Gin and Little Gin Islands
 Fishing will occur at Round Island.

5b. Check all applicable regulated activities proposed to be conducted in the Monument:

- Removing, moving, taking, harvesting, possessing, injuring, disturbing, or damaging any living or nonliving Monument resource
- Drilling into, dredging, or otherwise altering the submerged lands other than by anchoring a vessel; or constructing, placing, or abandoning any structure, material, or other matter on the submerged lands
- Anchoring a vessel
- Deserting a vessel aground, at anchor, or adrift
- Discharging or depositing any material or matter into the Monument
- Touching coral, living or dead
- Possessing fishing gear except when stowed and not available for immediate use during passage without interruption through the Monument
- Attracting any living Monument resource
- Sustenance fishing (Federal waters only, outside of Special Preservation Areas, Ecological Reserves and Special Management Areas)
- Subsistence fishing (State waters only)
- Swimming, snorkeling, or closed or open circuit SCUBA diving within any Special Preservation Area or Midway Atoll Special Management Area

6. Purpose/Need/Scope *State purpose of proposed activities:*

Purpose:

The purpose of the proposed activity is to support the recovery of the Monument's endangered Hawaiian monk seals by reducing the likelihood of shark predation on seal pups at French Frigate Shoals. This activity, when combined with other conservation efforts (translocations, captive care, etc.), would help address the problem of low juvenile seal survival, a factor identified as one of the main causes of Hawaiian monk seal population decline in the Monument.

Need:

The Hawaiian monk seal is in crisis with only approximately 1,100 seals remaining in Hawaii. Numerous threats afflict the species across its range. Shark predation on pre-weaned and newly weaned pups contributes to a unique and extreme situation at FFS that peaked in 1997-1999 and stands out from the trends observed at other sites in the NWHI. Galapagos sharks (*G. sharks* from this point forward; *Carcharhinus galapagensis*) have been identified as the primary predators for these young seals attacking pups while they swim in shallow water or rest on shore. This predation by Galapagos sharks was not observed prior to the mid 1990's and only occurs at French Frigate Shoals. Since 1999, predation has declined to 5-11 pups a year, but with simultaneously declining birth rates this predation accounts for about 25% of FFS seal pup mortality every year.

It is important to emphasize the impact of this predation on the monk seal population at French Frigate Shoals. Since 1997, approximately 250 of just over 1000 pups born have been killed or maimed by Galapagos shark attacks. Often, injuries that are sustained, but not immediately lethal, impair and ultimately reduce the survival of the pup during a particularly challenging lifehistory stage. These estimates should be considered a conservative minimum.

The need for activities to reduce shark predation on monk seal pups at French Frigate Shoals is called for by the Recovery Plan for Hawaiian Monk Seals (NMFS, 2007) and the Monument's own guiding document, the Papahānaumokuākea Marine National Monument Management Plan (see TES-1.6; PMNM, 2008). Mitigation activities by HMSRP conducted over the last decade include harassment of sharks, intensive observation, translocation of weaned pups, deployment of devices to deter predation and shark removal. Currently, shark removal is the only strategy available that will substantially reduce and, potentially, permanently eliminate this threat.

Scope:

Based on the best available science from 18 years of observation and research the HMSRP, in collaboration with external scientists, has developed premises about the identity and number of sharks likely involved with pup predation. Based on shark sightings by HMSRP staff and research conducted by Meyer et. al, it is believed that the number of sharks participating in this predatory behavior "is in the 10's" (Meyer's pers

comm.). It was recommended from ecosystem modeling and the shark predation workshop (Gobush et al. 2010) to remove up to a total of 20 sharks (2 have been removed and 18 remain) to reduce this threat to monk seals while minimizing impacts to the shark population. We have also designed this project to try to target these predatory sharks specifically. Based on research and assessment by shark experts that participated in NMFS' shark predation workshops is asserted that G. sharks found in shallow waters (less than 25 feet) far inside the FFS atoll (near islands where predation occurs) have a high likelihood of participating in this predatory behavior. This is because these shallow areas are atypical habitats for G. sharks to frequent. Thus, by concentrating our efforts in waters 25 feet or shallower within 700 meters of islands where this predation occurs, we will be concentrating our efforts towards this smaller 'atypical' part of the population and reducing the risk to non-target G. sharks.

*Considering the purpose of the proposed activities, do you intend to film / photograph federally protected species? Yes No

For a list of terrestrial species protected under the Endangered Species Act visit:

<http://www.fws.gov/angered/>

For a list of marine species protected under the Endangered Species Act visit:

<http://www.nmfs.noaa.gov/pr/species/esa/>

For information about species protected under the Marine Mammal Protection Act visit:

<http://www.nmfs.noaa.gov/pr/laws/mmpa/>

7. Answer the Findings below by providing information that you believe will assist the Co-Trustees in determining how your proposed activities are compatible with the conservation and management of the natural, historic, and cultural resources of the Monument:

The Findings are as follows:

a. How can the activity be conducted with adequate safeguards for the cultural, natural and historic resources and ecological integrity of the Monument?

The activity can be conducted with adequate safeguards for the cultural, natural and historic resources and ecological integrity of the Monument.

There has been extensive consultation with the Native Hawaiian community on this and many other Hawaiian monk seal research and conservation efforts since initiating this series of predation mitigation strategies in 2010. In 2010 -2011, we consulted with and received quality input from OHA and the Monument's Native Hawaiian Cultural Working Group (NHCWG). The feedback from the NHCWG and others was not homogenous with a diverse array of perspectives and opinions both supporting and opposing the activity. The NHCWG determined it was unable to offer an endorsement or censure of the proposed management activity and has not reviewed the activity since.

Discussions with other members of the Hawaiian community have resulted in constructive feedback and improved understanding of the views of some representatives of the Native Hawaiian community on our proposed work. From these meetings, we also supported the participation of a number of Native Hawaiians in our shark predation mitigation work in 2010 and 2011.

In 2013 with the addition of seal flesh as bait, we were encouraged by the State of Hawaii Board of Land and Natural Resources to communicate with, and be responsive to, stakeholders regarding this activity. We alerted approximately 35 organizations and individuals about our field activities during the 2013 field season (including shark fishing) and updated them on our plans for the 2014 season. To date, none of these entities has expressed questions or concerns.

We also undertook consultations regarding the use of tissue from previously deceased monk seals as bait with several Native Hawaiians with whom we have been working with on other monk seal issues. In this regard, we have held one-on-one discussions with several individuals (cultural practitioners, partners, and/or advisors). Input we received during these one-on-one discussions ranged from full support and understanding to acceptance without expressed support. No one we have spoken with regarding the use of seal tissue has voiced opposition or indicated that the use of seal tissue as we have proposed would adversely affect their productive relationships with our program or otherwise diminish their support for monk seal conservation. The overarching sentiment we have heard has been that as long as the seals would be dead of a cause beyond our control (which would be the case), using their bodies to try to save a still living seal, while admittedly difficult to consider or undertake, would be a reasonable effort in light of the endangered status of the monk seal population.

Historic resources under the NHPA would not be affected or potentially affected by our proposed actions.

To safeguard the ecological integrity of the Monument, we propose to limit the scope of our removal actions as described above and also to avoid by-catch of any other wildlife to the greatest degree possible. Possible adverse effects on the coral reef ecosystem at FFS from shark removals were investigated using the EcoSim model (Parrish, unpublished data; NMFS, in preparation). Results from that work indicated that the removal of 20 sharks had a nearly imperceptible effect on the dynamics of the FFS ecosystem. Expert opinion at our shark predation workshops supported these modeled results.

b. How will the activity be conducted in a manner compatible with the management direction of this proclamation, considering the extent to which the conduct of the activity may diminish or enhance Monument cultural, natural and historic resources, qualities, and ecological integrity, any indirect, secondary, or cumulative effects of the activity, and the duration of such effects?

The proposed activity would be conducted in a manner that will not only be compatible with the management direction of the Monument, but will enhance the ecological integrity of the Monument by helping to avoid the extinction of an endangered species. This activity will be conducted on a very small spatial and temporal scale and while it will directly adversely affect up to 18 G. sharks (but not the overall G. shark population) it could likely have a long-term beneficial cumulative impact on the health of the monk seal population and biodiversity of the Monument.

The extinction of the Hawaiian monk seal at FFS would adversely affect the Monument's biodiversity and trophic structuring at this location. A failure to mitigate the significant threat of shark predation may advance the potential for extinction and prevent recovery. Other methods executed in an attempt to reduce this threat have failed; it is believed that the activities proposed here will reduce the threat.

c. Is there a practicable alternative to conducting the activity within the Monument? If not, explain why your activities must be conducted in the Monument.

There is not a practicable alternative location to the proposed activity outside of the Monument because this threat to the recovery of the endangered Hawaiian monk seal has only been identified in the Monument. While a small portion of the monk seal population lives outside of the Monument, in the MHI, the species will not likely avoid extinction without a healthy population in the NWHI. Recovery requires at least 2900 seals in the NWHI with at least 5 of the 6 main sub-population above 100 individuals and increasing. To accomplish this at FFS shark predation must be mitigated.

Losing a high number of pre-weaned and newly weaned pups to shark predation is a unique phenomenon at French Frigate Shoals only; therefore, we propose to manage this threat at this location only. We have taken this focused and targeted approach to maximize the limited federal resources and minimize adverse impacts to other Monument resources by conducting the shark removal activities at 4 of the 9 islets at FFS.

d. How does the end value of the activity outweigh its adverse impacts on Monument cultural, natural and historic resources, qualities, and ecological integrity?

The potential positive outcomes from enhanced monk seal recovery outweigh the likely negligible adverse impacts associated with the loss of up to 20 G. sharks (18 requested here and 2 previously removed) because we believe that these actions will ensure the co-existence atoll-wide of the two species into the future.

If predation is not mitigated, the monk seal population may decline to a level that is unable to overcome demographic or environmental stochasticity. If a total of 20 Galapagos sharks are removed, a higher number of pups should be expected to survive

to be candidates for translocation and other enhancement activities and/or survive on their own to adulthood than would be the case if predation were not mitigated.

Increasing the number of juvenile seals reaching adulthood augments the population numbers in the short-term and, if they are female, its reproductive potential in the long run.

Neither the HMSRP nor external experts believe that other, secondary, impacts are likely to result from the removal because G. sharks and other apex predators are relatively abundant compared to monk seals (see discussion above on abundance).

e. Explain how the duration of the activity is no longer than necessary to achieve its stated purpose.

The activity is scheduled to coincide with the primary pupping season when seals are at their greatest risk of predation.

f. Provide information demonstrating that you are qualified to conduct and complete the activity and mitigate any potential impacts resulting from its conduct.

Some of the staff that conducted this work in multiple previous fields seasons will return for the 2015 field season. Since 2010, field staff have completed this work at FFS safely with no harm to seals or lethal shark bycatch (i.e. all tiger, whitetip and grey reef sharks captured were released alive). All new staff receive briefing and trainings in Honolulu and FFS before they participate in fishing activities.

Also, the HMSRP conducts a Risk Assessment on shark fishing every year with FFS staff contributing and participating in updating this assessment. This will be done in 2015 as well.

g. Provide information demonstrating that you have adequate financial resources available to conduct and complete the activity and mitigate any potential impacts resulting from its conduct.

We have received funding annually that is adequate to perform the activities. If additional funds were required to mitigate any unexpected impact, resources would be available from NMFS PIR or NMFS Office of Protected Resources.

h. Explain how your methods and procedures are appropriate to achieve the proposed activity's goals in relation to their impacts to Monument cultural, natural and historic resources, qualities, and ecological integrity.

The proposed removal methods and gear were all approved multiple times previously for past permit applications (all fishing methods 2010-2014, seal flesh as bait 2013-2014).

The proposed procedures (i.e. scope, timing, location, numbers, species of sharks to be removed) are appropriate to reach a goal of conserving wildlife (Hawaiian monk seals) and reducing the threat (shark predation) on a Monument resource (Hawaiian monk

seals) based on the best-available knowledge about shark abundance, shark movement, shark predation, predation mitigation, seal behavior, seal movement, fishing catch rates and fishing success rates (given location) at FFS. Please see Gobush (2010) for a comprehensive description of this knowledge. Adverse impacts to Monument cultural, natural, historic resources and ecological integrity are minimized as described in the discussion above.

Based on the experiences and success of past shark-capturing crews at FFS, shark ecologists and fishing gear-makers, having a variety of fishing methods at our disposal is advisable. The fishing crew will not know ahead of time which method will work best. Based on hundreds of hours of observation G. sharks come into the wavewash and attack pups at varying times of day and of the season, in varying numbers and at varying frequencies. These sharks also appear to respond to human activity in various ways (i.e. wary versus not wary). The team needs to be able to respond to the situation and the unpredictable and individualistic nature of sharks if they are going to have a chance at being successful.

i. Has your vessel been outfitted with a mobile transceiver unit approved by OLE and complies with the requirements of Presidential Proclamation 8031?

Yes

j. Demonstrate that there are no other factors that would make the issuance of a permit for the activity inappropriate.

There are no other factors that would make the issuance of a permit for the activity inappropriate. This Conservation & Management permit renewal application is a replication of the permitted activities in 2010-2014. Multiple permit applications evolved from previous projects, which underwent extensive review in-house, by members of the Hawaiian Monk Seal Recovery Team, the USFWS, and the State of Hawaii have been previously approved. The purpose, scope, methods and protocol of this application mirror and/or build upon the activities, insights and experiences of these previous projects.

8. Procedures/Methods:

Shark Fishing/Removals

1. Fishing personnel and location:

A crew of 3-4 staff experienced and trained in safe and effective methods for shark fishing/removal will be tasked with shark monitoring and removal of G. sharks that they encounter within 700m of shore of Trig, Gin, Little Gin and Round islets. As such, capturing sharks will only occur in what is considered the shallow lagoon inside the atoll in close proximity to islets with the highest rate of shark predation. Handlines and harpoon will be used in shallow water, from shore or close to shore; bottomsets and drumlines will be used in deeper water, over sandy substrate at distances farther from shore (up to 700m away). Ability to set the gear as far out as 700m from shore will help

ensure that it performs as designed by Meyer in 2009. Shallow depth, coral and snags make setting the bottomset at closer distances a challenge.

2. Fishing Methods:

Four different methods will serve as a “toolbox” of options to safely remove a maximum of 18 Galapagos sharks: handline, harpoon, bottomset, and drumline. Each method has its advantages and drawbacks. The potential for shark wariness to humans in combination with extremely low CPUE near pupping sites indicates that such a “toolbox” is needed to successfully capture sharks at the numbers and in the areas we desire.

Handlines and harpoons have the advantage of being very specific. Handlines were successful in the past.

Bottomsets and drumlines are, by design, restricted by habitat characteristics, otherwise lines can get tangled, etc. Thus, bottomsets and drumlines are not recommended to be effective in very shallow depths. Bathymetry and currents are islet-sector specific; therefore, the distance from shore to achieve a feasible depth (approx. 25 feet) and appropriate substrate (sandy bottom) is also islet-sector specific; a zone of 700m around each islet will provide for this.

No one method is guaranteed to be successful given the unpredictability and individualistic nature of sharks. However, together, all the methods provide the greatest chance of success. The order in which the different methods will be applied will be at the discretion of the crew and will be highly dependent on a variety of environmental and biological factors. If we employ more than one method at a time, we still expect that the total number of removals will be low based on the low CPUE in the shallow lagoon.

We will monitor the total number of baited hooks deployed across methods in order to remain within the proposed catch quota of 18 additional sharks. We will use the same bait type (large tuna heads, shark remains and tissue from previously deceased seals) and hook type (circle hook, size 18/0 to 20/0) as previously approved. Fish and seal tissue bait will be brought from outside the Monument. Bringing seal tissue from outside the Monument is a change from previous permits and is meant to ensure that there is tissue available to use for bait. There may not be the opportunity to collect tissue from a deceased seal at French Frigate Shoals. Seal tissue and shark tissue bait will also be collected within the Monument as available.

We will tend the gear to avoid bycatch mortality (non-target species will be dehooked and released). It is assumed that bycatch will be minimal and primarily shark species, based on Meyer’s crew’s experience in 2009 and our bycatch in 2010-2014. Fishing staff will avoid culling non-target sharks through their proper identification. The only shark species that is likely to be confused with the G. shark is the grey reef shark. However, in G. sharks, there is a very distinct ridge along the back between the first and second dorsal fins. Also, the maximum size of 20 grey reef sharks caught across the

NWHI was 159 cm (total length) in a 2003 study and in 2011 at Trig and Gin by our staff (3 5-foot grey reefs were caught and released). So, based on the absence of the dorsal ridge and a threshold size requirement above 200cm for removal, we will ensure that we do not misidentify and cull a shark that is actually a grey reef.

For handlines, a line will be baited from shore or small boat. A hand-held harpoon will be used from shore or small boat when a shark is observed. A barbed shaft, on the end of the harpoon pole will be delivered by hand and the tip will be attached to wire cable and connecting line that will be used to retrieve the shark. For these methods, captured sharks will be hauled out on to the beach for euthanasia.

Bottomsets will be made to the specifications identical to those used in the Meyer's project permitted in the Monument to catch sharks in 2009. Meyer's bottomsets had 10 hooks; we propose to use this many or less on each set. The gear is designed for sandy substrate with no potential for snagging. Approximately 200- 350m long ½ inch polypropylene mainline with overhand loops at regular intervals (40-60m) for gangion (branch line with hook) attachment will be used. Each end of the mainline will have a buoy line consisting of 1/2-inch polypropylene with a cleat at the top and a Danforth anchor (9-12 lb) at the bottom. The buoy line length will be contingent on target set depth (45-75 feet depending on depth of deployment allowed). Gangions will consist of a stainless steel lobster trap clip (snaps onto mainline loops) with 2m of 1/2 inch polypropylene, a large swivel, 2m of 7/19 strand stainless steel aircraft cable (bite leader) to a 20/0 Mustad circle hook. Sets will be made from a small boat, and with short soak times of a maximum of 3 hours (in the daytime only).

The drumline will be of either of the following 2 designs. It may consist of a large buoy, with a chain trace attached to it and single baited hook, shackled to the other end of the chain trace. A baited hook will be suspended approximately 10 feet above the sea floor. A groundline will be shackled to the drum with a swivel, attached to a Danforth or CQR anchor and anchored to the bottom substrate. A scope of 3-4 times the water depth will be used. Alternatively, it may consist of 20ft of ½ in. polypropylene substituting for a chain trace, connected to the same branchline type used for the bottomsets described above. The opposite end of this mainline will be shackled to a float-line buoy that serves as the 'drum'. A chain will be run through this buoy with the other end shackled to an 8' yellow marker line. The other end of the yellow line will then be shackled to a large red buoy with the connected float line (same used for bottomsets). The drumline set-up is a modification of what was used in 2010 so that the single baited hook rests on the bottom and does not suspend in the water column. This is preferred because we are targeting a species that spends most of its time on the bottom feeding on demersal fishes. With this design, the drum-buoy functions as a 'bobber' that will sink or move when an animal is hooked.

3. Post-catch procedures:

When a shark is hooked or harpooned it will be brought to shore or the side of the small boat and tail-roped and euthanized with a .44 caliber bang stick. HMSRP has established bangstick training and safety protocols and conduct an annual Operational Risk Management (ORM) for shark fishing operations. ORM is a continual process which includes risk assessment, risk decision making, and implementation of risk controls, which results in acceptance, mitigation, or avoidance of risk. It is standard for HMSRP to conduct ORM and risk assessment for projects that may involve risks such as this shark predation mitigation work.

Refresher training on use of the bang stick will occur boat side on inert material here in Oahu.

HMSRP will perform a necropsy on captured G. sharks on site (Tern Island), including gut content inspection, morphometric measurements, and identification of sex and reproductive state. Procedures will mirror those done on monk seals, using the same kits, modified as necessary based on instructions in the Elasmobranch Husbandry Manual (editors M. Smith, D. Warmolts, D. Toney & R. Hueter). The main focus of shark necropsies will be to determine pregnancy and gut contents, provide remains for Native Hawaiian cultural practices (if requested), and take samples for scientific analysis.

Samples of muscle, liver, vertebrae for fatty acid and isotope/ diet analysis will be removed from the carcass after the necropsy and stored frozen. Vertebrae samples will likely be sent to Woods Hole Oceanographic Institute to be processed by Greg Skomal's lab for isotope analysis. Fatty acid profiles will likely be analyzed for data on prey recently consumed, likely Sara Iverson's laboratory at Dalhousie University. Stomach contents will be screened for monk seal remains and provided to shark ecologists upon request. Some remaining tissue will possibly be retained for bait.

Thereafter, shark remains will be handled as deemed appropriate by members of the Native Hawaiian and the State of Hawaii Office of Hawaiian Affairs. In recent years, shark remains have been returned to the ocean outside of the fringing reef.

4. Reporting:

The MMB will be notified by NMFS when a shark has been removed. This will be done as quickly as possible and should normally be within 24 hours. A report that summarizes data concerning the removal of each shark will be submitted to the Monument one month after the end of the field season (season usually ends in September). This report will include environmental conditions at the time of removal, behavior or sightings of the individual prior to capture, identifying tags and physical features of the individual, location of the removal, method of removal, and method of euthanasia. Data about the carcass will also be included: morphometric measurements, gut contents, gender, reproductive status and the status of all remains.

5. Evaluation:

The ultimate goal of the proposed conservation and management activity is to reduce the threat of shark predation to pre-weaned and newly weaned monk seal pups at FFS. The proximate goals are to monitor shark activity and remove up to 18 additional G. sharks within 700m of shore of Trig, Round, Gin and Little Gin islets. We will consider the activity to be completed if the proximate goals are achieved in 2015 and the achievement of the ultimate goal is apparent within 1- 2 years thereafter. We expect a lag time in any measurable increase in pup survivorship from shark removal because it is likely to take at least an entire season to catch the number of sharks requested given the low CPUE in the shallow lagoon.

If the number of sharks removed in 2015 approximates 18, and no improvement in the proportion of pre-weaned and newly weaned pups lost to sharks (confirmed and inferred mortalities) is detectable within 1-2 years, then the idea of any additional shark removals will require careful consideration. If shark removal does not approximate 18 individual then it is unlikely that we will see a substantial decrease in shark predation and improvement in survivorship of young seals and future requests for the activity will continue. If predation ceases, then future requests for this activity are unlikely.

One metric that is not used as an evaluation of this project is our catch per unit effort (CPUE). The design of this project is very selective. It is targeting a small number of sharks (18) that are generally wary of humans and display a behavior that varies across time. All fishing efforts are in areas where this sharks rarely occur. This is to avoid catching sharks that aren't participating in monk seal pup predation. Therefore, by design our CPUE will be extremely low and it is expected that hundreds of hours of effort are required to catch a shark. This means completion of this management activity will take time and will continue across several years.

Additional descriptions of:

Anchoring a vessel: small boats will be anchored at FFS according to standard practices included in the monk seal field camp permitted activities. This includes anchoring only in sandy substrate and taking steps to avoid damaging of hard substrates (especially coral) with the anchor or chain.

Discharge: If it is requested that any remaining shark tissue be disposed of in the Monument, we suggest that remains be disposed at multiple deepwater locations outside of the atoll (latitude/longitude of the location will be recorded and avoided for addition disposals in the same year). We suggest a distance of 0.5 mile from the FFS atoll's breaking reef because disposal can occur safely at this distance from the atoll and current and water depths are adequate.

NOTE: If land or marine archeological activities are involved, contact the Monument Permit Coordinator at the address on the general application form before proceeding.

9a. Collection of specimens - collecting activities (would apply to any activity): organisms or objects (List of species, if applicable, attach additional sheets if necessary):

Common name:
Galapagos shark

Scientific name:
Carcharhinus galapagensis

& size of specimens:
18 adult

Collection location:
French Frigate Shoals, inside the atoll, near pupping sites of Gin, Little Gin, Round and Trig Islands

Whole Organism Partial Organism

9b. What will be done with the specimens after the project has ended?

A necropsy will be conducted, samples retained, some tissue will be used for bait, remains will be returned to the ocean or handled as deemed appropriate by members of the Native Hawaiian community and OHA.

Collected samples will be stored appropriately at the NOAA Inouye Region Center until samples are sent to :

Woods Hole Oceanographic Institute/ diet analysis through isotope screening (vertebrae) (Greg Skomal)

Dalhousie University/ diet analysis through fatty acid profiles (liver) (Sarah Iverson)

NOAA toxicologist (NOS Lab)/ Ciguatera and mercury level testing (muscle and liver)

NMFS geneticist/ genotyping (DNA from fin clip) (American Museum of Natural History or Hawaii Institute of Marine Biology if requested)

NMFS geneticist/ prey identification (DNA from stomach contents, if available) (American Museum of Natural History).

Samples will not be sent to the scientists listed above until additional sharks (optimally approaching 15-20 individuals) have been captured. To date, we have these set of samples from 2 Galapagos sharks (1 in 2010 and 1 in 2011)

9c. Will the organisms be kept alive after collection? Yes No

• General site/location for collections:

• Is it an open or closed system? Open Closed

• Is there an outfall? Yes No

• Will these organisms be housed with other organisms? If so, what are the other organisms?

• Will organisms be released?

10. If applicable, how will the collected samples or specimens be transported out of the Monument?

Biological samples collected from G. sharks will be stored as appropriate (i.e. in vials with dms0, in liquid nitrogen, dry etc.). All samples will be transported out of the Monument aboard a NOAA research vessel.

11. Describe collaborative activities to share samples, reduce duplicative sampling, or duplicative research:

Shark necropsy and sample analysis will be provided to HIMB and other shark ecologists as requested.

12. List all specialized gear and materials to be used in this activity:

Polypropylene mainline, buoy lines, gangions, bite leaders, lobstertrap clips, swivels, gaffs, meter caliper, leads, gloves, crimpers, cutters, hooks, knives, bolt cutter, buoys with anchor rode and anchor, chain traces, danforth anchors, SS wire, 3/0 interlock snap swivel, mustad circle hooks (18/0 - 20/0), bangstick, ammunition (44 magnum cartridges Remington), hand-held harpoon, bait cooler, bait (large tuna heads, seal tissue, shark tissue), camping gear, night-vision scope. Bottomsets will be made by Pacific Ocean Producers to be identical to that used in the Meyer's project only adjusted for minimum of 5 hooks and up to 10 hooks (Meyer used ten hooks), and the possibility of an increased interval of 60m between branchlines, which would result in an increased groundline length of approximately 350m. A bottomset with a wider reach may prove beneficial in catching Galapagos sharks.

13. List all Hazardous Materials you propose to take to and use within the Monument:

As listed on the Manager's permit: chemicals related to necropsy and tissue preservation (formalin, DMSO and/or ethyl alcohol for genetics and fatty acid analysis), also bangstick ammunition (.44 caliber magnum cartridges).

15 ml vials with 20% DMSO, count 20
10% buffered formalin, 500ml
ethanol, 0.5 gallons
bangstick ammunition (.44 caliber magnum cartridges), 2 boxes of 20 cartridges
Propane for freezers (tanks 60#), 28
Propane for camp stove (canisters 2#), 10
Non-ethanol gasoline (drums, 55 gallon), 6

14. Describe any fixed installations and instrumentation proposed to be set in the Monument:

No fixed instrumentation.

Three to four freezers will be required at Tern for bait and sample storage. These will be either propane or solar (most likely propane though) and removed at the end of the season.

15. Provide a time line for sample analysis, data analysis, write-up and publication of information:

Initial report to the Monument: October 31, 2015

Annual Report December 31, 2015

Final Report in 2016

Necropsies focused on the gross anatomy immediately upon death

Preliminary gut content analysis- immediately upon death

Fatty acid, genetic (including genetic analysis of gut contents) and vertebrae analysis:

TBD- will be sent out for analysis

16. List all Applicant's publications directly related to the proposed project:

This list includes all publications relevant to this conservation issue:

Dale, J. J., A. M. Stankus, M. S. Burns, and C. G. Meyer. 2011. The Shark assemblage at French Frigate Shoals Atoll, Hawai'i: species composition, abundance and habitat use. Plos One 6:e16962.

Gobush, K.S. 2010. Shark predation on Hawaiian monk seals: Workshop II & post-workshop developments, November 5-6, 2008. U.S. Dep. Commer., NOAA Tech. Memo., NOAA-TM-NMFS-PIFSC-21, 43 p. + Appendices.

Gobush, K.S. and S.C. Farry. 2012. Nonlethal efforts to deter shark predation of Hawaiian monk seal pups. Aquatic Conservation. DOI:10.1002/aqc.2272.

Harting, A., G. Antonelis, B. Becker, S.M. Canja, D. Luers, and A. Dietrich. In Prep. Galapagos Sharks and Hawaiian Monk Seals: A Conservation Conundrum. Marine Mammal Science.

Hawn, D. 2000. Galapagos shark (*Carcharhinus galapagensis*) removal and shark sighting observations at Trig Island, French Frigate Shoals during the 2000 Hawaiian monk seal field season. Prepared for National Marine Fisheries Service, Southwest Fisheries Science Center, Honolulu Laboratory. Contract Order 40JJNF000208. 25 pp.

Hayes, S. 2002. Galapagos shark predation of monk seal pups at Trig Island, FFS 2001. Unpublished report. Prepared under contract for U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Honolulu, HI. 22 pp.

NMFS, 2002. Environmental assessment for the proposed experimental shark removal to enhance preweaned monk seal pup survival at Trig Island, French Frigate Shoals, Hawaiian Islands National Wildlife Refuge. Prepared under contract for U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Honolulu, HI. 46 pp.

NMFS. 2003. Shark predation at Trig Island, 2002. Prepared under contract for U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Honolulu, HI. 38 pp.

NMFS 2004. Shark predation at French Frigate Shoals, 2003. Prepared under contract for U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Honolulu, HI. 56 pp.

NMFS 2005. Shark Predation at French Frigate Shoals, 2004. Prepared under contract for U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Honolulu, HI. 36 pp.

NMFS. 2007. Recovery plan for the Hawaiian monk seal (*Monachus schauinslandi*) 165 p. U.S. Department of Commerce, National Oceanic and Atmospheric Agency, Silver Spring, Maryland.

NMFS. 2009. Programmatic environmental assessment of the program for decreasing or eliminating predation of pre-weaned Hawaiian monk seal pups by Galapagos sharks

With knowledge of the penalties for false or incomplete statements, as provided by 18 U.S.C. 1001, and for perjury, as provided by 18 U.S.C. 1621, I hereby certify to the best of my abilities under penalty of perjury of that the information I have provided on this application form is true and correct. I agree that the Co-Trustees may post this application in its entirety on the Internet. I understand that the Co-Trustees will consider deleting all information that I have identified as “confidential” prior to posting the application.

Signature

Date

SEND ONE SIGNED APPLICATION VIA MAIL TO THE MONUMENT OFFICE BELOW:

NOAA/Inouye Regional Center
NOS/ONMS/PMNM/Attn: Permit Coordinator
1845 Wasp Blvd, Building 176
Honolulu, HI 96818
FAX: (808) 455-3093

DID YOU INCLUDE THESE?

- Applicant CV/Resume/Biography
- Intended field Principal Investigator CV/Resume/Biography
- Electronic and Hard Copy of Application with Signature
- Statement of information you wish to be kept confidential
- Material Safety Data Sheets for Hazardous Materials

Papahānaumokuākea Marine National Monument Compliance Information Sheet

1. Updated list of personnel to be covered by permit. List all personnel names and their roles here (e.g. John Doe, Diver; Jane Doe, Field Technician, Jerry Doe, Medical Assistant):

Shawn Farry - Bio Tech
Michael Burns - Perm Staff
Koa Matsuoka - Assistant
Keelan Barcina – Volunteer Assistant

2. Specific Site Location(s): (Attach copies of specific collection locations):

French Frigate Shoals is an approximately 27 km-long crescent-shaped atoll that protects a 727 sq.-km shallow lagoon that is from 2 to 10 km wide. Numerous sand islets dot the lagoon area of French Frigate Shoals. Waves and currents constantly change the size and shape of these sandy islets. The majority of shark predation on nursing and weaned monk seal pups has occurred at Trig Island and therefore near shore waters around this island would be the primary implementaion site. However, dependent upon Galapagos shark activity, additional sites including Gin Island and Little Gin Island may be selected for proposed activities. Round island is variable in presence and location.

Trig Island – 1.1 acres in September 2004

Lat: 23 degrees 52' 17.59

Long: 166 degrees 14' 34.17

Gin Island – 2.1 acres in September 2004

Lat: 23 degrees 44' 03.88

Long: 166 degrees 09' 56.40

Little Gin Island - 2.3 acres in September 2004

Lat: 23 degrees 43' 43.64

Long: 166 degrees 09' 49.63

2. Other permits (list and attach documentation of all other related Federal or State permits):

Number	Issuing Agency	Type of Permit	Issue Date	Expire Date	Activity
16632	NMFS	Scientific Research and Enhancement	6/16/2014	6/30/2019	All Research by PIFSC on Hawaiian monk seals
PMNM-2015-001	Monument	Management	1/1/2015	12/31/2015	All Research and Conservation by PIFSC on Hawaiian monk seals in Monument
932-1905	NMFS	Scientific Research and Enhancement	6/30/2009	6/30/2015	MMHSRP Permit. All care of sick or stranded marine mammals, as well as administration of meds to wild animals
Protocol 11-1120-5	UH IACUC	Protocol	3/19/2015	3/19/2016	Remove Sharks; Animal Welfare Act requirement
Protocol 03-007-12	UH IACUC	Protocol	3/19/2015	3/16/2016	Seal tagging, biopsy sampling, instrumenting, flipper tagging; Animal Welfare Act Requirement
PMNM-2014-023	Monument	Conservation and Management	3/28/2014	5/31/2015	Shark fishing & tagging (will be replaced with new permit)

3a. For each of the permits listed, identify any permit violations or any permit that was suspended, amended, modified or revoked for cause. Explain the circumstances surrounding the violation or permit suspension, amendment, modification or revocation. No violations

4. Funding sources (Attach copies of your budget, specific to proposed activities under this permit and include funding sources. See instructions for more information): Federal Government

5. Time frame:

Activity start: Cruise Departure 18 May 2015

Activity completion: Cruise Return September 30 2015

Dates actively inside the Monument:

From: 20 May 2015

To: 27 September 2015

Describe any limiting factors in declaring specific dates of the proposed activity at the time of application: These are based on current cruise schedules. Times may change based on ship issues, weather, or other factors outside our control.

Personnel schedule in the Monument:

All staff will enter the Monument May 20, 2015 and will disembark at FFS on May 21, 2015. He will depart FFS on September 27, 2015, and will leave the Monument from on September 29, 2015.

6. Indicate (with attached documentation) what insurance policies, bonding coverage, and/or financial resources are in place to pay for or reimburse the Monument trustees for the necessary search and rescue, evacuation, and/or removal of any or all persons covered by the permit from the Monument:

Federal Government

7. Check the appropriate box to indicate how personnel will enter the Monument:

- Vessel
 Aircraft

Provide Vessel and Aircraft information: NOAA RV Hi'ialakai (deployment)
NOAA RV Oscar Elton Sette (recovery)

8. The certifications/inspections (below) must be completed prior to departure for vessels (and associated tenders) entering the Monument. Fill in scheduled date (attach documentation): This will be provided in other permits for ships.

- Rodent free, Date:
 Tender vessel, Date:
 Ballast water, Date:
 Gear/equipment, Date:
 Hull inspection, Date:

9. Vessel information (NOTE: if you are traveling aboard a National Oceanic and Atmospheric Administration vessel, skip this question):

Vessel name:

Vessel owner:

Captain's name:

IMO#:

Vessel ID#:

Flag:

Vessel type:

Call sign:

Embarkation port:

Last port vessel will have been at prior to this embarkation:

Length:

Gross tonnage:

Total ballast water capacity volume (m3):

Total number of ballast water tanks on ship:

Total fuel capacity:

Total number of fuel tanks on ship:

Marine Sanitation Device:

Type:

Explain in detail how you will comply with the regulations regarding discharge in the Monument. Describe in detail. If applicable, attach schematics of the vessel's discharge and treatment systems:

Other fuel/hazardous materials to be carried on board and amounts:

Provide proof of a National Oceanic and Atmospheric Administration (NOAA) Office of Law Enforcement-approved Vessel Monitoring System (VMS). Provide the name and contact information of the contractor responsible for installing the VMS system. Also describe VMS unit name and type:

VMS Email:

Inmarsat ID#:

* Individuals MUST ENSURE that a type-approved VMS unit is installed and that its automatic position reports are being properly received by the NOAA OLE system prior to the issuance of a permit. To make sure your VMS is properly configured for the NOAA OLE system, please contact NOAA OLE at (808) 203-2503 or (808) 203-2500.

* PERMITS WILL NOT BE ISSUED TO INDIVIDUALS ENTERING THE MONUMENT VIA VESSEL UNTIL NOAA OLE HAS CONTACTED THE MONUMENT PERMIT COORDINATOR WITH A 'POSITIVE CHECK' READING.

10. Tender information:

On what workboats (tenders) will personnel, gear and materials be transported within the Monument? List the number of tenders/skiffs aboard and specific types of motors:

"Montauk" 17' Boston Whaler with a 75hp Honda outboard engine.

"Alert" 17' Boston Whaler with a 60hp Yamaha outboard engine

Additional Information for Land Based Operations

11. Proposed movement of personnel, gear, materials, and, if applicable, samples:

Movement within the monument will be accomplished using tenders of the Hawaiian Monk Seal Research Program, which will be transported to FFS aboard the R/V *Hi'ialakai* at the start of this activity. Atoll quarantine protocols will be observed.

12. Room and board requirements on island: NMFS/PSD personnel will establish a tent base camp at Tern Island, and will also have temporary camps at Trig Island to monitor and/or remove sharks. HMSRP will work with USFWS on warehouse access for field season use as in previous years.

13. Work space needs: Sufficient footprint on Tern Island to park two 20' whalers, on trailers. Space for 3 each chest freezers.

DID YOU INCLUDE THESE?

- Map(s) or GPS point(s) of Project Location(s), if applicable
- Funding Proposal(s)
- Funding and Award Documentation, if already received
- Documentation of Insurance, if already received
- Documentation of Inspections
- Documentation of all required Federal and State Permits or applications for permits

DAVID Y. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 24, 2015

TO: Division of Aquatic Resources File

THROUGH: Carty Chang, Interim Chairperson

FROM: Maria Carnevale
Papahānaumokuākea Marine National Monument

DECLARATION OF EXEMPTION FROM THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT UNDER THE AUTHORITY OF CHAPTER 343, HRS AND CHAPTER 11-200 HAR, FOR PAPAHA NAUMOKU AKEA MARINE NATIONAL MONUMENT CONSERVATION AND MANAGEMENT PERMIT TO DR. FRANK PARRISH AND ANN GARRETT, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, NATIONAL MARINE FISHERIES SERVICE, FOR ACCESS TO STATE WATERS TO CONDUCT SHARK REMOVAL ACTIVITIES UNDER PERMIT PMNM-2015-009.

The following permitted activities are found to be exempted from preparation of an environmental assessment under the authority of Chapter 343, HRS and Chapter 11-200, HAR:

Project Title:

Papahānaumokuākea Marine National Monument Conservation and Management Permit to Dr. Frank Parrish, Chief of Protected Species Division, and Ann Garrett, Assistant Regional Administrator for Protected Resources, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, for Access to State Waters to Conduct Shark Removal Activities.

Permit Number: PMNM-2015-009

Project Description:

The conservation and management permit, as described below, would allow entry and activities to occur in Papahānaumokuākea Marine National Monument including the NWHI State waters from May 15, 2015 through May 14, 2016.

This is an effort to conduct management activities for the conservation of Hawaiian monk seals, including the removal of predatory sharks from these areas. The activities would support the recovery of the endangered Hawaiian monk seal by reducing the likelihood of shark predation on seal pups at French Frigate Shoals.

CARTY CHANG
INTERIM CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

W. ROY HARDY
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAIHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

Three to four trained staff would remove eighteen (18) Galapagos sharks (tail length of 200 cm or greater) caught within 700 m of select pupping sites at French Frigate Shoals. Sharks would be caught by: (1) hand line, (2) hand-held harpoon, (3) drum-line, and/or (4) small 10-hook bottomset. Bait would include tuna heads, shark tissue, or flesh collected from previously deceased monk seals. For all methods, hooked sharks would be pulled into shore or alongside a small boat, tail-roped, and killed with a bangstick. Shark carcasses would be examined (gross necropsy), sampled for future scientific analyses (isotope, fatty acid, and genetic analysis) and any suitable shark tissue used as bait. Remains would be handled as deemed appropriate by designated Native Hawaiian community members. Currently, the plans would be to return remains to the ocean outside the atoll.

The activities are in direct support of the Monument Management Plan's priority management needs 3.2 – Conserving Wildlife and Habitats, through action plan 3.2.1 – Threatened and Endangered Species. This action plan states that “site specific mitigation plans and methods should be developed and implemented” (PMNM MMP Vol 1, p.163). This action plan includes an activity to reduce shark predation on monk seals. Monitoring shark activity and removing sharks are also both listed in the Hawaiian Monk Seal Recovery Plan (NMFS 2007) as necessary activities, critical to the species' recovery.

In addition, activities to support threatened and endangered species in the NWHI are addressed in the Monument Management Plan (MMP) Environmental Assessment (EA). This EA analyses the MMP covered field activities “to monitor predation of sharks on Hawaiian monk seals and its effects, and develop and implement methods to deter predation” (PMNM MMP Vol 2, p.173). The EA states that “these activities could have a beneficial effect on the endangered monk seal by decreasing population loss”.

Consulted Parties:

The permit application was sent out for review and comment to the following scientific and cultural entities: Hawai'i Division of Aquatic Resources, Hawai'i Division of Forestry and Wildlife, Papahānaumokuākea Marine National Monument (NOAA/NOS), NOAA Pacific Islands Regional Office (NOAA-PIRO), United States Fish and Wildlife Service Hawaiian and Pacific Islands National Wildlife Refuge Complex Office, the Office of Hawaiian Affairs (OHA), and the Cultural Working Group Permits Sub-Committee. In addition, the permit application has been posted on the Monument Web site since February 20, 2015 giving the public an opportunity to comment. The application was posted within 40 days of its receipt, in accordance with the Monument's Public Notification Policy.

Exemption Determination:

After reviewing HAR §11-200-8, including the criteria used to determine significance under HAR §11-200-12, DLNR has concluded that the activities under this permit would have minimal or no significant effect on the environment and that issuance of the permit is categorically exempt from the requirement to prepare an environmental assessment based on the following analysis:

1. All activities associated with this permit, including monitoring and removal of sharks, have been evaluated as a single action. As a preliminary matter, multiple or phased actions, such as when a

group of actions are part of a larger undertaking, or when an individual project is precedent to or represents a commitment to a larger project, must be grouped together and evaluated as a single action. HAR §11-200-7. This permit may involve an activity that is precedent to a later planned activity, i.e. the continued removal of sharks next year if eighteen (18) sharks are not removed this year, or removal of twenty (20) sharks in total over a multi-year period since the project's inception. Subsequent activities will depend largely on the results achieved under this permit.

2. The Exemption Class for Experimental Management with no Serious or Major Environmental Disturbance Appears to Apply. Chapter 343, HRS, and §11-200-8, HAR, provide for a list of classes of actions exempt from environmental assessment requirements. HAR §11-200-8.A.5. exempts the class of actions which involve “basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource.” The proposed removal activities here appear to fall squarely under the exemption class #5, exempt item #5 as described under the Division of Forestry and Wildlife exemption list published on June 12, 2008. This exemption class has been interpreted to include “wildlife management actions including predator control”, such as those being proposed. As discussed below, no significant disturbance to any environmental resource is anticipated in the monitoring and removal of a limited number of sharks. Thus, so long as the below considerations are met, an exemption class should include the action now contemplated.

The Applicants would follow Monument Best Management Practices (BMPs) to mitigate threats activities could have on listed species, sea birds, and terrestrial birds. The BMPs include Human Hazards to Seabirds (BMP 003), the Laysan Finch Protocol (BMP 005), Artificial Light on Sea Turtles (BMP 009), Marine Wildlife Viewing Guidelines (BMP 010), and Precautions for Minimizing Human Impacts on Endangered Land Birds (BMP 012). Bycatch would be expected to be minimal based on experience from previously approved permits from 2010 to 2013 (PMNM-2012-013 and PMNM-2013-017, PMNM-2014-023) and research done by Meyer in 2009 (PMNM-2009-009 and PMNM-2009-036). To avoid the misidentification between Galapagos sharks and grey reef sharks, the minimum size requirement would be set to about 160 cm for removal and an absence of the dorsal ridge seen in grey reef sharks.

3. Cumulative Impacts of Actions in the Same Place and Impacts with Respect to the Potentially Particularly Sensitive Environment Will Not be Significant. Even where a categorical exemption appears to include a proposed action, the action cannot be declared exempt if “the cumulative impact of planned successive actions in the same place, over time, is significant, or when an action that is normally insignificant in its impact on the environment may be significant in a particularly sensitive environment.” HAR §11-200-8.B. To gauge whether a significant impact or effect is probable, an exempting agency must consider every phase of a proposed action, any expected primary and secondary consequences, the long-term and short-term effects of the action, the overall and cumulative effect of the action, and the sum effects of an action on the quality of the environment. HAR §11-200-12. Examples of actions which commonly have a significant effect on the environment are listed under HAR §11-200-12.

This project would continue shark removal activities that were undertaken in 2007 and 2010 to 2014, under permits PMNM-2007-025, PMNM-2010-014, PMNM-2011-007, PMNM-2012-013, and PMNM-2013-017 and PMNM-2014-023; which had no deleterious effects on Monument resources. Possible adverse effects on the coral reef ecosystem at French Frigate Shoals (FFS) from shark removals were investigated using the EcoSim model (Parrish, NMFS). Results from that work indicated that the removal of 20 sharks had a nearly imperceptible effect on the dynamics of the FFS ecosystem. With that in mind, significant cumulative impacts are not anticipated as a result of this activity, and numerous safeguards further ensure that the potentially sensitive environment of the project area will not be significantly affected. All activities will be conducted in a manner compatible with the management direction of the Monument Proclamation in that the activities do not diminish monument resources, qualities, and ecological integrity, or have any indirect, secondary, cultural, or cumulative effects. The joint permit review process did not reveal any anticipated indirect or cumulative impacts that would occur as a result of these activities.

These activities would be conducted from the seasonal monk seal field camp based on FFS. The operation of the field camp, and associated monitoring activities, are covered under the Manager's permit PMNM-2014-001. Interactions with sharks at FFS are also anticipated, for the purpose of shark tagging, by Dr. Carl Meyer proposed permit no. PMNM-2015-020. Activities covered under Meyer's proposed permit would be conducted in May 1 through October 30, 2015, possibly coinciding with activities under this proposed permit. In the past, Meyer has spent less than seven days a season at FFS. There are no other known proposed projects that would be undertaken with respect to sharks at FFS.

There is the potential that four ships may be in the Monument during this time frame. The NOAA Ships HI'IALAKAI (PMNM-2015-006), SSV MAKANI'OLU (PMNM-2015-022), OKEANOS EXPLORER (PMNM-2015-025) and OSCAR ELTON SETTE (PMNM-2015-004). The activities supported by these ships are permitted separately. At French Frigate Shoals, specifically, there are only two proposed projects that involve interactions with monk seals and sharks. The projects include this particular submittal as well as the aforementioned, proposed permit no. PMNM-2015-020, for shark tagging. It is not foreseen that there will be a cumulative impact on the marine resources at FFS with these two projects. Since no cumulative impacts are anticipated, the categorical exemptions identified above should remain applicable.

4. Overall Impacts will Probably be Minimal and Insignificant Any foreseeable impacts from the proposed activity will probably be minimal, and further mitigated by general and specific conditions attached to the permit. Specifically, all conservation and management activities covered by this permit will be carried out with strict safeguards for the natural, historic, and cultural resources of the Monument as required by Presidential Proclamation 8031, other applicable law and agency policies and standard operating procedures.

Conclusion. Upon consideration of the permit to be approved by the Board of Land and Natural Resources, the potential effects of the above listed project as provided by Chapter 343, HRS and Chapter 11-200 HAR, have been determined to be of probable minimal or no significant effect on the environment and exempt from the preparation of an environmental assessment.

April 24, 2015
Page 5

Carty Chang
Board of Land and Natural Resources

Date _____