What We Know About Human Interactions with the Endangered Hawaiian Monk Seal

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Saving wild ocean places, for us and future generations.
Lay Gillnet Fishing

Type of Fishery

Subsistence, Recreational, or Small-scale Commercial

Description of fishery

Stationary lay gillnets are used in near shore waters by subsistence, recreational and small-scale commercial fishermen. Lay nets may also be known as “set”, “cross”, “paipai”, or “moemoe” nets. A lay gillnet may be used to catch reef fish such as manini, mullet, nenue, papio, ‘o’io, weke or all goatfish species, ‘awa’awa, and moi.

Lay gillnets are used throughout the Main Hawaiian Islands, except on Maui where they are banned. Gillnets also are banned in areas of Western Hawai‘i and at the following areas on O‘ahu: Portlock Point to Keahi Point, Kailua Bay, and Kāne‘ohe Bay.

State Requirements and Gear Used

State regulations on gillnet gear may be found at http://state.hi.us/dlnr/dar/regulated_gear.html. The lay gillnet is constructed from clear, monofilament nylon line. Floats are attached to the top of the net and weights at the bottom to hold the net vertically in the water in a stationary position. Gillnets may be used to a depth of 25 feet without a license, or at a depth of 80 feet with a license. Lay gillnet mesh must have a minimum stretched size of 2-3/4 inches, a maximum dimension of 125 feet long by seven feet wide, and cannot be multi-paneled. The net must be registered with the DLNR; four identification tags must be present, as well as two buoys that display the net’s identification number.

By law, gillnets are supposed to be set during the period commencing 30 minutes before sunrise, and removed no later than 30 minutes after sunset. A fisherman may only use one net at a time. The net must be placed at least 250 feet from another set net. It is unlawful to leave a net soaking for more than 30 minutes unattended, and the net must be checked every two hours for by-catch.
A particular net cannot be used for more than four hours; once withdrawn, the same net may not be used again for 24 hours. A fisherman must also be aware of where he or she is placing the net. A lay gillnet should not break off or bring up stony coral. It is illegal to discard a gillnet on the beach or in the water, as this can lead to seal, turtle and bird entanglements, or to the unintentionally killing of more fish that may get caught in it.

Monk Seal Interactions

Although some fishermen complain that monk seals rob fish from their nets and damage their gear, the number of interactions between gillnet fishers and seals that have been documented by NOAA are few due to lack of reporting by fishermen. Some fishermen say that the illegal use of gillnets at night accounts for alleged seal depredations because the nets are left out too long without being checked. The truth about seal depredations is further complicated by the fact that other species, such as sharks, sea turtles, and large predatory fish (e.g., ulua), may eat fish caught in nets. In short, the frequency and magnitude of monk seal interactions with gillnet fishers is hard to pin down, and is impossible to estimate with any accuracy. The timely reporting of incidents would go a long way in correcting this situation.
Impact on Seals

Lay gillnets can be lethal to seals that can get caught in them and either strangle or drown. For the period 1998-2011, a NOAA study documented twelve cases of seals entangled in gillnets; six seals died as a result.

Impact on Fishermen

Seals may take and eat fish caught in nets, or may tear a net when struggling to free themselves from entanglement. Fishermen usually are able to repair minor net damage. If a seal becomes entangled in a net, a fisherman could lose his entire catch. The replacement cost of a severely damaged or lost net can run from $100 to $300 per net, depending on its size. The magnitude of seal impacts on gillnet fishermen cannot be realistically estimated without better reporting by fishermen or research surveys.
Avoiding Interactions with Seals

Complying with state gillnet fishing regulations, including not using a net at night, will help reduce interactions with seals. It is especially important that gillnet fishermen avoid setting their net in areas where one or more seals are known to be present or hanging around, especially a mother and her un-weaned pup or a juvenile seal that has little familiarity with nets.

In order to help NOAA understand the nature and frequency of seal depredations and to identify nuisance seals, fishermen should report all incidents of seals stealing fish or tearing their nets immediately. The toll-free hotline number is (888)256-9840; the number is staffed 24/7. NOAA may be able to intervene to scare away a depredating seal or relocate it, depending on circumstances.

It is important to call NOAA immediately when a seal has been ensnared, so that a seal rescue effort may be mounted quickly. This provides NOAA with the best chance of identifying the seal and opens up the possibility that responders may be able to intervene in order to prevent future negative interactions, and to intervene before the seal dies.
Monk Seal Interactions in Hawaii

Shore Casting for Reef Fish

Type of Fishery
Recreational and Subsistence

Description of fishery
Shore fishing for reef fish is a very popular activity throughout the Hawaiian Islands. Shore casting includes use of slide-bait pole rigs for ulua (giant trevally), whipping for papio, dunking for several species, and spin casting. Although monk seals may be incidentally hooked in several shore fisheries, ulua fishing by far has the most frequently documented impacts on monk seals. Ulua are predatory fish that feed on smaller reef fish, octopus, and eel. Ulua can weigh between 10 and 191 pounds (state record). They like to feed in the evening along rocky and sandy ledges close to shore when the tide is high. Good ulua fishing spots are closely guarded by fishermen who have a “magic” or “secret” spot where they regularly fish.

State Requirements and Gear Used
State regulations for reef fishing can be found on the Hawai‘i Department of Land and Natural Resources website (http://state.hi.us/dlnr/dar/regulations.html). Regulations state that an ulua must be a minimum size of 10 inches to be kept, or 16 inches if it is sold; there is a daily bag limit of 20 ulua.

Because of their size, large ulua are best caught with a strong steel hook, steel leader and 200-300 pound test line. Most fishermen use a circle hook with barb to hold their live bait. Ulua gear can be very difficult to cast, so some fishermen swim the weight and hook to the desired location. The bait is usually a live reef fish, squid, octopus, or eel. The baited hook is placed just behind the wave line or below a rocky ledge, where it floats and attracts the predatory fish. The fishing pole is anchored in the sand or rocks. When a strike is felt, the line is pulled tight and reeled in.
Monk Seal Interactions

A seal foraging along the reef may see the live bait set for ulua and attempt to steal it; octopus and squid are both part of the seal’s diet. In attempting to take the bait, a seal may get the hook caught in its mouth area (most common), or worse, swallow it. A hooked seal will: (1) attempt to throw the hook and leave, (2) break the line and depart with the hook in its mouth, or (3) be cut loose by a fisherman with the hook still in its mouth. Some fishermen claim the seal may be ‘played’ in to shore where the fisherman will attempt to remove the hook, but it is not known how often this happens. Once a seal has departed with the hook, it may later lose it, or carry it around, often with a piece of line dangling from its mouth—a clear sign the seal has been hooked. If the hooked seal is reported by the fisherman who hooked it, or later seen and reported, a NOAA Fisheries response team will attempt to find the animal as quickly as possible and remove the hook.

Seals are opportunistic feeders, which means they will seek out a variety of prey at different locations, including popular fishing spots. Seals that have been conditioned to seek bait or discarded fish at popular fishing grounds have an increased risk of getting hooked, and may become nuisances. If a seal is hauled out at a fishing spot or in the water when a fisherman arrives, some fishermen may attempt to chase it away with a stick, by throwing rocks at it, or by making noise in hopes it will leave the area—actions that constitute harassment.
Impact on Seals

Monk seals have more documented interactions with ulua fishing gear than with any other kind of shore casting gear. According to a NOAA study, of the 118 incidents of hooked or entangled seals documented between 1976 and 2011, 92 of the incidents involved seals with a large hook in their mouth, cheek, outer body or digestive track. Hooked seals were documented at all islands, but most frequently at Kaua'i and O'ahu. There is no estimate of how many unreported hooked seal incidents may have occurred during the same period.

Most hooked seals documented by the NOAA study either were found to have thrown the hook on their own, or had the hook successfully removed by a NOAA response team. One seal died from an ingested hook according to the study. Other seals are likely to have died, given the fact that some identified hooked seals were never seen again.

The frequency of hooked seals has increased with the growth of the seal population in the Main Hawaiian Islands. In 2012, NOAA documented 15 incidents of hooked seals, three of which died of their wounds, an increase from previous years. Nonetheless, NOAA says that although the increased rate of hooking incidents is worrisome, these incidents do not currently pose a threat to the growth of the monk seal population in the MHI.

It is critical to address shore casting interactions now to keep seal hookings to a minimum. The best way to avoid government regulation and intervention is to minimize monk seal hookings and interactions by following NOAA guidelines and reporting all interactions to NOAA immediately (see below).

Impact on Fishermen

Seal interactions with fishermen may have several effects. If a seal is seen while a fisherman is setting up, the fisherman may have to move someplace else or wait until the seal departs the area. Once the bait is in the water, a fisherman may stop fishing or move to another spot if a seal shows up. Seals are known to steal bait and catch. If a seal is hooked by a fisherman, the line may break or need to be cut. Lost fishing gear has an estimated replacement cost of approximately $5-$7 per incident. However, the cost of the lost gear would not be the major frustration for the fisherman; the loss of fishing time or loss of catch would be.
Avoiding Interactions with Seals

Ulua fishermen can take a number of actions to avoid interacting with seals. Guidance may be found in several fact sheets on NOAA’s web site. See especially “How to Prevent Seals From Getting Your Fish and Bait.” (http://www.fpir.noaa.gov/Library/PRD/Hawaiian%20monk%20seal/Fact%20Sheets/HMS-avoidance.2-15-11.pdf). General guidance is provided here:

- If a seal is at the desired fishing area upon arrival, or one is encountered while fishing, stop fishing until the seal leaves or move your location.
- Use barbless circle hooks instead of barbed ones. Barbless hooks come out more easily than do barbed ones.
- Do not feed seals or discard old bait or scraps into the water if a seal is present. This may condition the seal to seek additional food at your site.

If a seal is accidentally hooked, immediately report the hooking to NOAA Fisheries at (888) 256-9840. This hotline is manned 24 hours per day. If possible, reel in the line carefully and cut the line close to the seal. Take care not to jerk the line, as this may set the hook more firmly in the seal. Report the location, time, and any distinguishable markings or tag number on the seal if visible. DLNR and NOAA recently applauded the action of one responsible fisherman on Maui who promptly reported a monk seal encounter during which he inadvertently hooked a monk seal at West Maui.

NOAA depends on the public, fishermen, volunteers in the NOAA seal response network, and others to report seal hooking incidents or the location of a seal seen with a hook or line in its mouth. A NOAA response team will attempt to capture the seal, and either remove the hook in the field or at a surgery facility as necessary. The sooner an injured seal is reported, the more likely the hook will be successfully removed. In almost all of the 88 documented hooking incidents documented by NOAA, the seal has either lost the hook or it was removed with minimal intervention.
Recreational Diving

Description of Activity

Snorkeling and scuba diving for pleasure (hereinafter referred to as diving) is a major recreational activity in Hawai‘i for residents and tourists. Diving may be done by individuals on their own, or with excursion and eco-tourism companies. It is not unusual for a diver to encounter a monk seal on a dive, though many divers may never see one.

State Requirements and Gear Used

The state of Hawai‘i requires that a vessel deploying divers must display a dive flag. No other vessel may come within one hundred feet of a displayed diver flag. Divers not launching from a vessel must display a buoy/float with a flag to mark their dive. Divers use regulation dive equipment, including BC, mask, snorkel, weights, tank, regulator, and fins.

Monk Seal Interactions

There are sufficient reports, anecdotal stories, and YouTube videos to conclude seal interactions are occurring with divers on a regular basis. However, it is difficult to know how often divers interact with monk seals and whether interactions are increasing because no statistically valid survey has been conducted. Although NOAA asks that diver-seal interactions be reported via a toll-free hotline, the agency receives relatively few reports from divers or ecotourism operators.

MCI has been working with community members to assess how often recreational divers interact with monk seals. Divers have claimed there are 'hot spots' where seals may be observed regularly. At Kaua‘i, seals are reportedly seen frequently at Lehua Rock and about ten percent of the time on dives off the North Shore. Other locations known to have seals include Sharks Cove, Firehouse, Kahe Point, and Lāna‘i Lookout. Seal hot spots also are said to exist at other islands.
Recreational Diving

The kinds of seal interactions divers have vary depending on circumstances and the age of the interacting seal. More often than not, recreational divers state that a seal will become curious for one to two minutes and then swim away. Juvenile seals are the ones that usually investigate divers. Adult seals are not as curious, so they may swim to another area when a diver enters the water, or when they detect a dive vessel nearby. From photos and video footage, officials know some divers intentionally engage seals by swimming with, touching, or feeding them. These activities habituate (or condition) seals to engage with humans and make it more likely seals will seek interactions with other divers. Feeding seals, also known as provisioning, is a particular problem in that it is believed to make seals aggressive beggars. There have been allegations of divers and ecotourism operators feeding seals as a way to keep them hanging out in a particular area for viewing, but this has not been documented or proven.

Impact on Seals

Divers that interact with seals by swimming with, touching, or feeding them harm seals by making them less wild. Seals conditioned to seek interactions are at risk in two ways. First, if a seal is aggressive, it could lead to an encounter that could be dangerous for the diver and/or the seal. Second, a conditioned seal that regularly engages with people risks being removed from its home to another site or taken into captivity.

NOAA keeps a list of “seals of concern” that interact with people too often, or in threatening or harmful ways. Problem seals are monitored by NOAA field biologists, who may first attempt to extinguish the behavior by hazing in hopes it will stop the behavior. If a seal persists in bothering divers, it may be captured and relocated to an area where there are fewer people. Sometimes several relocations are carried out to deter continued interactions. If this doesn’t work, NOAA may move the seal to another island. If NOAA determines that a seal is having “unmanageable human interactions” with people, the animal may be taken to the Northwestern Hawaiian Islands where they are isolated from humans, or placed in captivity. These relocations are extremely costly and divert resources away from other activities, in addition to threatening the overall species’ recovery by removing healthy animals from the main Hawaiian Islands population.
Monk Seal Interactions in Hawaii

Recreational Diving

Impact on Divers

Overly aggressive seals pose a safety risk for divers, whose human limitations are unknown to a seal. When looking for a playmate or food, a seal could pull a swimmer under water, block a diver from getting to the surface, or nip a diver. NOAA has documented 10 cases of interactions involving habituated seals for the period 1991-2011. In five of these cases a seal bit a diver or swimmer (2003-2009). Seals may also ‘rough up’ a diver. For example, MCI documented one case of a curious seal attempting to remove the hood of a diver. Fortunately, there was no injury to the diver. In 2013, a curious juvenile seal bit two swimmers preparing for the Hawaii Ironman event; the injuries were minor. Tellingly, the seal had already had previous interactions with people.

If a seal feels as though a diver is encroaching on it, the seal may bark at the diver. Divers or swimmers that approach a mother seal and her pup are especially at risk. The mother seal is like any other mother and will protect her young. The best form of protection seals have is their teeth. Three of the five bite cases documented by NOAA between 1995-2011 occurred during mother-pup interactions with divers or swimmers.

Avoiding Interactions with Seals

The NOAA Fisheries Pacific Region Office and the Pacific Islands Science Center post several documents on their respective web sites that urge people to avoid interactions with monk seals insofar as practicable, and to deal properly with interactions that do occur [http://www.fpir.noaa.gov/Library/PRD/Hawaiian%20monk%20seal/HMS-fishing_guidelines-FINAL-PUBLIC.pdf]. Guidelines relevant to recreational divers are summarized here:

- If a seal is encountered while diving, get out of the water and see if the seal will move on.
- A diver should never engage a seal by invading its space and should never try to touch the seal. These types of interactions could lead to the seal becoming familiar with humans and create relationships that are not beneficial to humans or seals.
- Do not feed seals anything to avoid conditioning the seal to associate food with divers.
- Cautiously move away from a mother seal that is shielding her pup.
- If an aggressive seal bothers a diver, NOAA recommends the dive be ended as soon as safely possible.
It is important to note that divers have the right to protect themselves if they feel their safety is imminently threatened by an aggressive seal. Ultimately, the best practice is to avoid any interactions with seals at all, but if approached by an aggressive seal, the diver should take defense or evasive action, exit the water as soon as safely possible, and call authorities immediately to alert them to the encounter.

To report unusual interactions or problems with seals, divers should call this toll free number maintained by NOAA (888-256-9840). The line is staffed around the clock. The diver should be prepared to provide as much identifying information as possible about the seal (a bleached number on the animal or flipper tag number, size, etc.), and the specific location and details of the encounter. In summary, by engaging in proper behavior and reporting, recreational divers can reduce the negative impacts seals have on them, as well as their impacts on seals.
Description of Activity

As the number of Hawaiian monk seals in the Main Hawaiian Islands increases, so will the number of encounters and interactions that beachgoers have with seals. Monk seals are frequently seen hauled out on beaches where they are sleeping or resting. Monk seals also come on land to give birth and nurse their pups, and to molt. Because of the difficulty seals have moving on land, hauled out animals are especially vulnerable to disturbance by people and dogs.

Legal Protections and Management

The Hawaiian monk seal is listed as an endangered species under the federal Endangered Species Act (ESA) and designated a "depleted" species under the Marine Mammal Protection Act (MMPA). Both the ESA and MMPA have provisions that direct NOAA to protect depleted and listed species from harm and encourage the recovery of these populations.

The MMPA prohibits the "take" of any marine mammal. "Take" includes actions such as hunting, harassing, killing, capturing, injuring and disturbing a marine mammal; the law also prohibits the feeding of any marine mammal in the wild. The penalty for feeding a seal may be as much as $6,000 depending on the circumstances. The ESA prohibits the "take" of a threatened or endangered species listed under the act. Under the ESA, "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect a listed species, or to attempt to engage in any such conduct. The take of a listed species may result in a federal fine of up to $50,000 and up to one-year in jail.

The State of Hawaiʻi also lists the Hawaiian monk seal as endangered under the state's endangered species law. The intentional taking of a seal is a third-degree (Class C) felony. NOAA Fisheries and the State of Hawaiʻi Department of Land and Natural Resources (DLNR), cooperate in monitoring and protecting seals on beaches and in near shore waters. A phone call to a NOAA hotline (888-256-9840) alerts the NOAA response coordinator that a seal is present at a particular site. Then, depending on the location, behavior and condition of the seal, a seal
volunteer may be dispatched to monitor the situation. Alternatively, the response coordinator may go to the site. Volunteers are trained and supervised by NOAA, but have no law enforcement powers.

Usually, the volunteer will set up a ‘seal protection zone’ (SPZ) around the seal using a rope, cones or signs. The SPZ helps to prevent disturbance of the seal and enhances public safety. The volunteer’s job is to provide beachgoers with valuable conservation and life history facts about the monk seal, as well as encourage responsible viewing of the animal from a safe distance.

SPZs are especially important in cases of pupping events or when a seal hauls out on a densely populated beach, like Poipu Beach on Kaua‘i or Waikīkī Beach on O‘ahu. If the creation of a SPZ is not appropriate, volunteers may nonetheless stay on site to alert beachgoers about the presence of the seal and advise them about responsible viewing.

A recent public perception survey funded by NOAA found that 66% of respondents agree with the current practice of establishing SPZs, but some think the boundary around a seal is a legal boundary. An SPZ is not a legally closed area, but rather a management tool. It is legal for a person to cross into or through a SPZ. However, it is illegal to disturb or harass a seal--a violation that could result from a person getting too close to a seal within the SPZ. In order to avoid disturbing seals and keep themselves safe, beachgoers voluntarily should respect the SPZ as an off limits area.

Impact on Seals

Some beach users who do not respect the seal as part of Hawai‘i’s natural heritage may engage in a variety of behaviors that may be considered violations of state or federal law. These behaviors include disturbing a seal with noise, touching or sitting on a seal, scaring a seal into the water, playing with a seal, or injuring a seal by poking it or throwing rocks at it. Also, feeding a seal is illegal. A beachgoer’s dog could harass or bite a seal, raising the possibility of transmitting canine distemper to the bitten seal (which could transmit it other seals or other dogs). Each of the four major counties requires dogs to be leashed and under control.
The major reason for avoiding direct human interactions with monk seals is to prevent seals from becoming accustomed to people. A monk seal that becomes comfortable with humans is likely to seek out more human contact. While this may seem harmless or even amusing to some, a seal that becomes a nuisance may have to be relocated to another site or island, to the Northwestern Hawaiian Islands, or even taken out of the wild into captivity to ensure the safety of beach users.

Impact on Beachgoers

One or two monk seals on a beach should have very little impact on beachgoers if people keep their distance. It is usually rather simple to pass by a seal at a reasonable distance to avoid disturbing it. Although a resting seal may appear harmless, it can become aggressive if startled or threatened and may bite. Therefore, it is important to keep a safe distance from monk seals encountered on beaches and in the water, and to follow the advice of seal volunteers. Conditioned seals are a problem in that they may try to ‘play’ with swimmers or snorkelers, which poses a safety threat. There are several documented cases of swimmers and divers being harassed or bitten by a seal.

Monk seal volunteers should never attempt to stop beachgoers from enjoying the beach or entering the water when a seal is around, as they have no authority to do so. However, in an effort to better educate beachgoers about monk seal health and public safety, volunteers may inform beach users about the presence of a seal and offer advice on keeping a safe distance to maintain their safety and avoid disturbing the seal. Disturbing, harassing or harming a monk seal is a violation of federal law. Hawai‘i Revised Statutes Chapter 115 protects public access to coastal areas, and only county or state officials may close a beach to the public. If a beachgoer feels that a volunteer has infringed upon their public access rights, they should contact the Marine Mammal Response Network Coordinator at (808) 944-2269 or (808) 944-2285.

Avoiding Interactions with Seals

Marine animals, such as monk seals, sea turtles and dolphins are part of Hawai‘i’s identity and hold a special place in the minds and hearts of the people of Hawai‘i. Individual seals may react differently to people, so carefully observe any seal and move back or leave the area if the animal shows signs of being disturbed.
Monk Seal Interactions in Hawaii

Seals and Beachgoers

- It is natural for monk seals to come ashore or haul out on the beach for long periods of time. Please give them the space they need to rest.
- Seal protection zones around seals on the beach are for your safety and the seal’s protection. Please do not enter these areas.
- Cautiously move away if you observe the following monk seal behaviors:
  - Female attempting to shield a pup with her body or by her movements
  - Vocalization (growling, barking) or rapid movement away from people or dogs
  - A sudden awakening from sleep
- Do not pour water on resting or sleeping seals or attempt to push them into the water; they are able to live outside the water and can get back into the ocean on their own.
- If approached by a seal, move away to avoid interaction.
- Obey county leash laws and keep your dog on a leash in the presence of monk seals to avoid injury or disease transmission to the seal and to protect your dog.
- In the ocean, monk seals may exhibit inquisitive behavior. Approaching or attempting to play or swim with a seal is harmful to the seal and could be dangerous to the swimmer. Cautiously move away from the seal and exit the water.

NOAA and DLNR depend on the public to report monk seal sightings on beaches or in the water close to beaches. Monk seal sightings may be reported to the following NOAA offices:

- Oahu: (808) 220-7802
- Kauai: (808) 651-7668
- Molokai: (808) 553-5555
- Maui/Lanai: (808) 292-2372
- Island of Hawaii
  - East: (808) 756-5961
  - West: (808) 987-0765

or email pifsc.monksealsighting@noaa.gov

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Spearfishing

Type of Fishery
Subsistence and Recreational

Description of fishery
Spearfishing is conducted mainly in nearshore waters by divers who enter the ocean from the shoreline or from vessels. The targeted species are ulua, tuna, mahimahi, uhu, manini, nenue, aholehole, mu, palani, kala, weke (all goatfish species), and octopus. Shore divers target reef fish and octopus. Boat-based divers usually target pelagic species.

State Requirements and Gear Used
A state license is not required for spear fishing, but fishermen should follow regulations set by the state Department of Land and Natural Resources (DLNR) (http://dlnr.hawaii.gov/). DLNR regulations specify the time, place, and manner of spear fishing. Importantly, state regulations prohibit the spearing of any salt water crustaceans, sea turtles, or marine mammals.

Two types of gear may be used: (1) a pneumatic spear gun that fires a single shaft with an attached line; or (2) a hand-held three prong spear which is launched by an elastic band attached to its base (known as a Hawaiian sling). Some fishers place their catch in a closed float bag or other floating device (open or closed) that is attached to the fluorescent orange dive buoy, which is required by law to mark active dive sites. Other fishermen let their catch dangle from the buoy on a stringer known as a kui. Some fishermen attach a kui to their dive belt, keeping their catch close to their bodies, but visible to seals.
Monk Seal Interactions in Hawaii

**Monk Seal Interactions with Fishermen**

There are many anecdotal reports and YouTube videos of seals interacting with spear fishermen, but most interactions are not reported to NOAA Fisheries or to the state Department of Land and Natural Resources (DLNR). Thus, there is no reliable way to estimate how frequently seals interact with divers, or to characterize the outcomes of these interactions. However, seal-diver interactions are known to occur regularly at certain locations based on information provided by local divers.

Seals are curious, and it is not surprising they are attracted to divers, especially ones hunting fish. When a seal encounters a spear fisherman in the water, it may attempt to play with the diver, go after a speared fish, or seek to take fish from the catch stored at the dive buoy or on the diver’s belt. Spear fishermen say some seals have learned to follow them around, waiting to swoop in after a fish is speared or at the sound of a spear shot. Seals are said to be clever, aggressive fish-stealers.

**Impact on Seals**

Seals interacting with spear fishermen put themselves at risk in both the short and long term. For example, some fisherman might break the law by hitting, poking or sticking the seal to make it go away; or the seal could be accidentally hit by a spear. Divers may also feed the seal a fish or fish scrap to make it go away or ‘to pay respect to the ocean’, but this conditions the seal to associate divers with food. Tragically, an inexperienced or frightened diver might even shoot a threatening seal in self-defense. In 2013 a seal was wounded by a spear (see photo above), but the circumstances of the incident have not been determined.

Certain seals conditioned by feeding may become aggressive with divers, and thus are considered a nuisance. NOAA keeps a list of “seals of concern” that have begun to interact with people too frequently or in potentially threatening ways. Problem seals are monitored by NOAA field biologists, who first attempt to scare them away in hopes they will not come back. If displacement techniques do not work, a seal may be captured and relocated to an area where there are fewer people. Sometimes several relocations are carried out to deter continued interaction with divers. If this doesn’t work, NOAA may move the seal to another island, or to the Northwestern Hawaiian Islands.

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Impacts on Fishermen

The major complaint of spear fishermen is loss of catch. A seal is particularly attracted to fish that have been speared or put on kuis where they are easy game for a seal. Some seals may learn to shadow spear fishermen for the very purpose of stealing fishing, but it is not known how many seals fit this description due to lack of reporting by fishermen and the difficulty of confirming a seal's identification tag number underwater. Certainly, the loss of catch is a nuisance, as is having to stop fishing until the seal leaves or moving to another location. However, many fishermen consider these impacts a ‘cost of doing business’ in the seal’s home.

Some divers also complain they are harassed by seals. An aggressive seal could potentially harm a diver (e.g., by bumping, biting, nipping or pulling off the diver’s mask). NOAA has documented about 10 incidents of seals biting, mouthing or nipping swimmers, divers or spear fishers since 1991. However, it is thought that many of the less serious incidents are not being reported. Until more seal interactions are reported and more accurate data is collected, NOAA and DLNR will continue to struggle in their quest for long term solutions to diver-seal interactions. Reporting interactions is a key way for divers to play a role in creating community-based solutions.
Avoiding Interactions with Seals

NOAA circulates a handout, “Guidelines for Prevention, Safety and Reporting,” that urges fishermen to avoid interactions with monk seals insofar as practicable, and to deal properly with interactions that do occur [http://www.fpir.noaa.gov/Library/PRD/Hawaiian%20monk%20seal/HMS-fishing_guidelines-FINAL-PUBLIC.pdf ]. Guidelines relevant to spearfishing are as follows:

- Do not feed seals old bait or fish scraps or fish to avoid conditioning the seal to associate food with divers.
- If a seal is encountered while spear fishing, take a break and get out of the water, to see if the seal will move on. Alternatively, move to a different dive location.
- If an aggressive seal bothers a diver, NOAA recommends the dive be ended as soon as safely possible, and the dive location changed. The incident should be reported to NOAA (see below).
- Reduce fish attractants in the water by removing caught fish from the water or putting them in a sealed float bag; do not throw unwanted fish back into the water if a seal is present.

NOAA urges fishermen to report significant interactions soon after they occur so the agency can identify, monitor and deal with a seal that is causing problems. To report interactions, fishermen should call this toll free number which is manned 24/7: (888)-256-9840. In sum, by following the guidelines and reporting seal encounters, spear fishermen can reduce the negative impacts seals have on them, as well as their impacts on seals.