Background Paper on SCUBA Spearfishing

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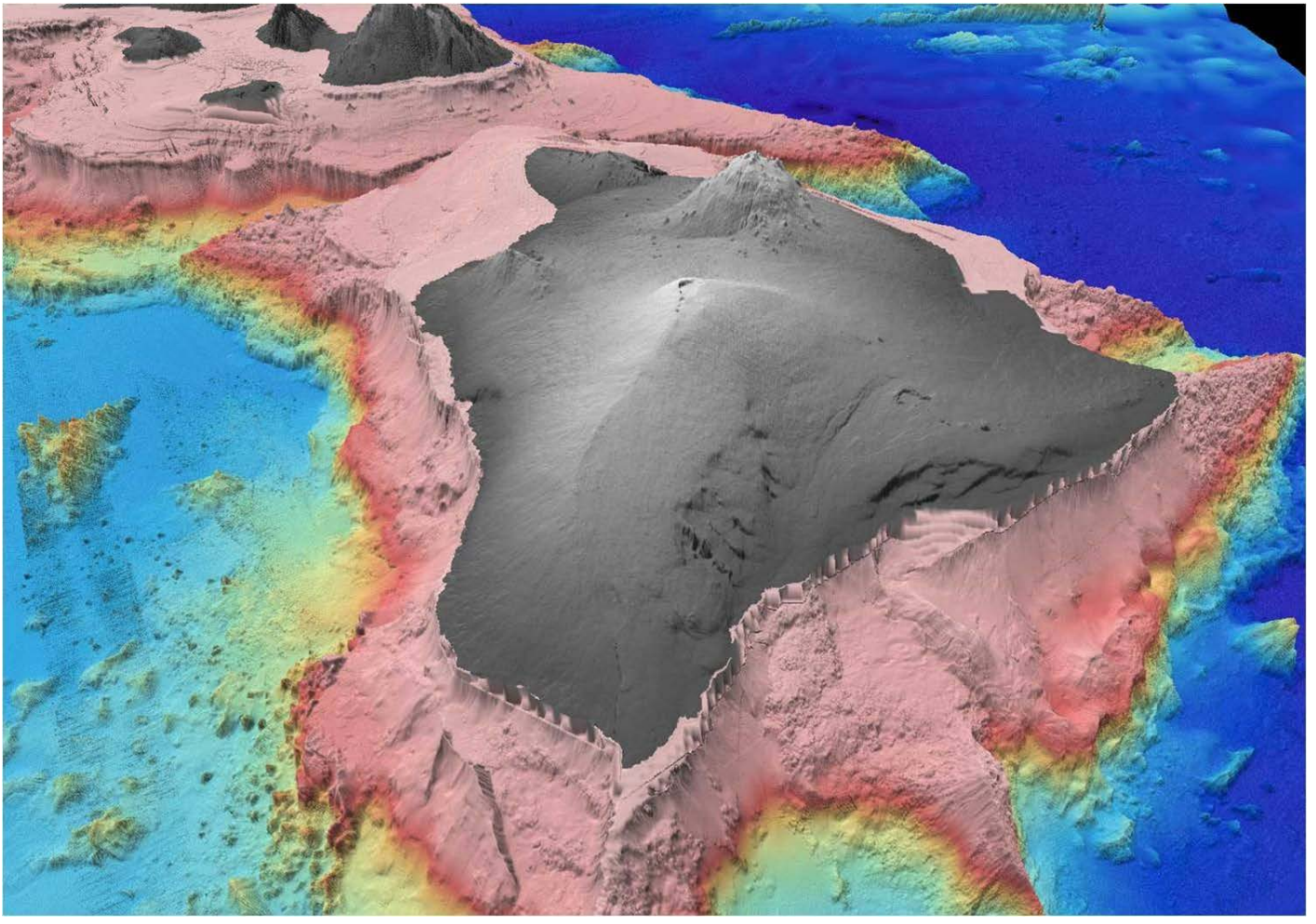

The following are annotated references relevant to SCUBA spearfishing management:

Gillet R and W Moy (2006). Spearfishing in the Pacific Islands: Current Status and Management Issues FAO/Fish Code Review No. 19. 72pp.

General conclusions on the matter of scuba spearfishing include: (a) for several reasons, a complete ban of scuba spearfishing coupled with effective enforcement is the single most important spearfishing management measure;

(b) spearfishing effort must be managed along with other forms of inshore fishing, since attempts at restricting spearfishing alone are not likely to be successful as fishing effort may be easily transferred to other small-scale fishing methods;

The notion that selectivity is “good and virtuous” arises from the assumptions that through selectivity, (a) discards are reduced/avoided, and (b) species that can support fishing pressure can be targeted. This “virtue” concept is less relevant in fisheries where there are no discards, or where fishers are selecting for species that cannot support the pressure. The available information indicates that, despite spearfishing gear having selective qualities, the gear is used rather non-selectively.

One of the most widespread problems associated with spearfishing concerns the use of scuba. The perceived problems associated with using scuba for spearfishing include reducing fish populations to low levels and diminishing or eliminating the positive effects of deep water acting as a sanctuary for fish.

Most Pacific Island countries ban the use of scuba in spearfishing. Where scuba is not banned, it appears to be because: (a) there is no issue as scuba use is minor or nonexistent; (b) there is lack of knowledge of its harmful effects; or (c) the scuba divers form an interest group with some degree of political influence.

In all but two countries the present legislation to ban scuba spearfishing appears inadequate. It is extremely difficult or impractical to collect the evidence required to prove conclusively in court that scuba was used to take fish (i.e. fishery officer underwater observing a fish being speared by a diver using scuba). A much better approach is to ban the possession of scuba and fishing gear in the same boat or car.

Judging from the experience of some of the countries, where scuba spearfishing does not now occur (e.g. Tuvalu), it may be a better, wherever possible, to ban the activity before it has a chance to become well established.
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Fenner D. 2012. Challenges for Managing Fisheries on Diverse Coral Reefs. *Diversity*, *4*, 105-160;

Spearfishing is potentially highly selective and so the fisher can choose to avoid any species or size they choose, though size has to be estimated in a short period of time. However, in practice spearfishers may spear anything they see, making it very unselective.

Banning night spearfishing or SCUBA spearfishing is a significant control on effort. A SCUBA spearfishing ban is accepted and appears to have relatively high compliance in American Samoa, but a night spearfishing ban would be difficult to implement in Pohnpei.

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Stoffle BW and SD Allen (2012). The Sociocultural Importance of Spearfishing in Hawai'i. NOAA Technical Memorandum NMFS-PIFSC-31. 38 pp.

Fishermen feel night spearing with the use of scuba is another factor that leads to the decline of certain species, especially reef fish. Fishermen feel that scuba diving is a method that allows for inappropriate levels of efficiency. Coupled with its use at night to target various species that sleep in rock/reef cracks or under ledges, scuba makes it even more efficient and, in the opinion of many of the fishermen, creates an opportunity for fishermen to take much more than necessary.

Many fishermen feel that scuba spearfishing should be outlawed altogether, but if there had to be a compromise, they would prefer that people were only able to scuba spearfish during the day.

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Frisch AJ, Cole AJ, Hobbs J-PA, Rizzari JR and KP Munkres (2012). Effects of Spearfishing on Reef Fish Populations in a Multi-Use Conservation Area. PLOS ONE December 2012 | Volume 7 | Issue 12 | e51938

Coincident with accession of spearfishing to the multi-use conservation park zone at Palm Island was a 54% reduction in density and a 27% reduction in mean size of coral trout, the primary target species of spearfishers on the Great Barrier Reef. Given that benthic habitat characteristics and densities of non-target fishes at Palm Island were stable through time, and that the density and mean size of coral trout remained unchanged in the nearby control zone (where spearfishing was prohibited), the decline in the coral trout population at Palm Island can be attributed to spearfishing. As such, this study provides direct evidence that spearfishing can have rapid and substantial negative effects on reef fish populations, even when moderate size- and catch-limits apply.

In demonstrating that spearfishing can be detrimental to fish stocks, our study highlights the need for careful management of spearfishing to ensure that conservation goals are not compromised and that the harvest of fishery resources is sustainable.

Fishers typically target the larger individuals in a population, which tends to reduce the mean size of fished species. At Palm Island, spearfishing reduced the mean size of coral trout by 27% during the five years from 2004 to 2009. Intense, size-selective fishing pressure is concerning to fishery managers because reproductive output declines exponentially with decreasing fish size, such that depletion of the larger individuals in a population can rapidly precipitate recruitment over-fishing.
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Houk P, Rhodes K, Cuetos-Bueno J, Lindfield S, Fread V, and JL McIlwain (2012). Commercial coral-reef fisheries across Micronesia: A need for improving management Coral Reefs 31:13-26.

Despite the likely use of illegal SCUBA fishing techniques in CNMI, and its legal use in Guam, significantly smaller sizes of many target reef fish were reported in comparison with Yap and the known size at reproductive maturity (L50). This is alarming considering that deeper waters act as refuges from fishing pressure and support fish assemblages that are comparable with long-standing, no-take marine protected areas.

Historical fisher interviews in Yap between 1991 and 1992 had already recorded a consensus of lower catch-per-unit-effort, decreased sizes and stocks, and a need for improving management (Graham 1992). The introduction of new fishing techniques, spearguns, flashlights, and monofilament nets, were thought to be drivers of these trends, especially salient as traditional management and law do not encompass modern technology.
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Richards BL, Williams ID, Vetter OJ and GJ Williams(2012). Environmental Factors Affecting Large-Bodied Coral Reef Fish Assemblages in the Mariana Archipelago. PLoS ONE 7(2): e31374. doi:10.1371/journal.pone.0031374

Large-bodied species including bumphead parrotfish, humphead wrasse, stingrays, parrotfish, jacks, emperors, and groupers are considered rare in Guam, and it has been suggested that this may be the result of heavy fishing. Technological improvements, which have facilitated the expansion of activities like nighttime SCUBA spearfishing, have resulted in a reappearance of larger species in fishery catch statistics. While it is possible that this resurgence in catches indicates greater targeting of “healthy” populations, it would seem more likely that such increases are related to the use of new technology, representing the next step in the serial depletion cycle seen in many fisheries.
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Rhodes KL, Warren-Rhodes K, Houk P, Cuetos-Bueno J, Fong Q and W Hoot (2011). An Interdisciplinary Study of Market Forces and Nearshore Fisheries Management in Micronesia. A Report of the Marine Program of the Asia Pacific Conservation Region, The Nature Conservancy. Report No. 6/11. 120 p.
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The abolition of destructive fishing practices, protection of critical habitat, and severe restrictions on the harvest of highly vulnerable species, such as green bumphead parrotfish, humphead wrasse, tridacnid clams, and turtles should be paramount management goals. SCUBA spearfishing, blast fishing, fishing with poisons, and gillnetting should be banned throughout Micronesia due to their known association with habitat destruction and overfishing.

In Guam and CNMI, where overfishing has been documented for decades, SCUBA spearfishing has eliminated the depth refugia of several reef fish species, similar to that observed elsewhere. As McClanahan (2010) concludes, many of the most efficient and economically rewarding modern practices inflict the greatest harm to fish and habitats.

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Goetze JS, Langlois TJ, Egli DP, and ES Harvey (2011) Evidence of artisanal fishing impacts and depth refuge in assemblages of Fijian reef fish. Coral Reefs 30:507–517.

The majority of species driving the greater species richness in the shallow protected areas were targeted species. This result is indicative of a depth refuge effect, which may have been caused by the limitation of artisanal fishing techniques (such as spearing) to fish at depths greater than 15 m and supports our depth refuge hypothesis. These fishing techniques may have removed rarer species targeted by fisheries from shallow fished sites and had little effect on these species in the deep. These results are supported by Tyler et al. (2009) who found evidence of a depth refuge in fished areas, also indicated by greater species richness with increasing depth.

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Januchowski-Hartley FA, Graham NAJ, Feary DA, Morove T and JE Cinner (2011). Fear of Fishers: Human Predation Explains Behavioral Changes in Coral Reef Fishes. PLoS ONE 6(8): e22761. doi:10.1371/journal.pone.0022761

coral reef fishes normally targeted by spear fishers showed lower FID (flight initiation distance)within areas protected from fishing pressure

Although levels of artisanal fishing can vary widely, even low levels of subsistence fishing have been associated with dramatic declines in fishery target species.

Acanthuridae and Scaridae, which are the 1st and 3rd most commonly spear fished families in the region, showed the highest sensitivity to increased fishing pressure, while Lutjanidae and Serranidae, both of which are primarily caught by hook and line and more rarely caught by spear gun, showed no significant changes in FID between fishing pressures.

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Godoy N, Gelcich S, Vásquez, JA and JC Castilla (2010). Spearfishing to depletion: evidence from temperate reef fishes in Chile. Ecological Applications 20:1504–1511.

Although the ecological consequences of reef fish depletion are not fully understood in Chile, evidence of spearfishing depleting temperate reef fishes must be explicitly included in policy
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debates. This would involve bans or strong restrictions on the use of SCUBA and hookah diving gear for spearfishing, and minimum size limits.

This study shows that unregulated spearfishing has depleted reef fishes in temperate near shore ecosystems along part of the Chilean coast and has also caused shifts in the composition of catches over time.

Furthermore, artisanal speargun divers in Chile perceive that diving with hookah gear, to target reef fishes, has been a main cause for their overexploitation. Similar evidence suggests that heavy SCUBA spearfishing pressures across the tropical Pacific have caused, and continue to cause, severe declines in reef fish populations.

Spearfishing with SCUBA or hookah, while banned in many countries, is still permitted in many regions of the world... In addition night spearfishing is still permitted extensively around the globe. These situations need urgent review...An urgent discussion on the banning of SCUBA and hookah-diving gear for spearfishing is necessary.

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Tyler EHM, Speight MR, Henderson P and A Manica (2009). Evidence for a depth refuge effect in artisanal coral reef fisheries. Biol. Conservation 143:652-667.

Natural refuges can play a fundamental role in protecting species from overexploitation but have not been adequately quantified in the marine environment.

The abalone fishery in California provides a good example of a depth refuge effect. A ban on using SCUBA to collect abalone in northern California has resulted in 43% of abalone being larger than the sport size limit below 8.4 m, (compared to 16% above 8.4 m)

The depth refuge effect could be sustaining coral reef fisheries and should be taken in to account before implementing policies or subsidies that encourage or allow fisheries to exploit deeper waters.

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Guam Department of Agriculture’s Division of Aquatic and Wildlife Resources. (2009). Offshore Fisheries, http://www.guamdawr.org/aquatics/fisheries2/offshore/document_view.

Guam recognizes SCUBA spearfishing as a “serious threat to all reef fish stocks.”

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Wilkinson C (2008). Status of coral reefs of the world: (2008). Global Coral Reef Monitoring Network and Reef and Rainforest Research Centre, Townsville, Australia, 296 p.
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Micronesia and American Samoa - Fish populations around major population centres show clear signs of over-fishing with few large fish observed because of fishing pressure, particularly spear-fishers using scuba;

The use of scuba and artificial lights for spear fishing and the continued use of monofilament gill nets are particular concerns. These methods have been banned or heavily restricted in most Pacific countries but remain legal on Guam. Local fisheries biologists suggest these methods have contributed to a boom and bust harvest of large humphead wrasse, the depletion of large groupers, a shift from preferred species (large slow-growing fish) to smaller, faster growing species, and a decrease in the number of other large wrasse, parrotfish, snapper, and grouper caught by other methods.

Local fisheries in Pohnpei are being unsustainably over-fished and 70% of fish sold at markets are immature or found with eggs. Night-time spearfishing is the most popular type of fishing and this overly efficient method is contributing to the overall decline in reef fisheries.

Korea - spear fishing with scuba tanks and hookah is degrading fisheries resources. Over-fishing and unsustainable fishing methods, such as spearing, are still common activities in Korea although they are decreasing.

Commonwealth of the Northern Mariana Islands- Sharks are scarce throughout the archipelago and the ban on the use of scuba spearfishing on Saipan has improved the abundance of food fish groups.

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Frisch AJ, Baker R, Hobbs JA and L Nankervis (2008). A quantitative comparison of recreational spearfishing and linefishing on the Great Barrier Reef: implications for management of multi-sector coral reef fisheries. Coral Reefs 27:85–95.

the mean size of target fish caught by spearfishers was significantly larger than the mean size of target fish caught by linefishers and spearfishers retained 43% more biomass of target species than did linefishers .

In ecological terms, it may be beneficial to target larger fish, since it increases the proportion of the population that reproduce before recruitment to the fishery. However, it is also undesirable to target very large fish, because they make a disproportionately large contribution to the reproductive output of the population.

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Lloret J, Zaragoza N, Caballero D, Font T, Casadevall M and V Riera, (2008). Spearfishing pressure on fish communities in rocky coastal habitats in a Mediterranean marine protected area. Fisheries Research 94 (2008) 84–91.

Results support the assumption that spearfishing can induce changes in both the trophic structure and the intrinsic vulnerability of taxa in the catch. Considering the biological implications of spearfishing, management should be supported by additional regulations in order to protect species that are vulnerable and have a higher trophic level.
One of the cornerstones of the conservation of Mediterranean rocky fish species is that they should be considered highly vulnerable to spearfishing because this type of fishing can affect the abundance and reproductive viability of long-lived, slow growing and top-predator species.

The results clearly show the pressure that spearfishing exerts on vulnerable fishes, and suggest that this recreational activity is probably causing not only a decline in the mean trophic level of the MPA (i.e. fishing down food webs, but also in the average intrinsic vulnerability of taxa in the MPA catch (similar to what has happened in the global fish catch, especially in respect of reef fish. In particular, the removal of large individuals by spearfishing can adversely affect the reproductive potential of these vulnerable fish populations. This is because larger females are proportionally more fecund, reproduce over an extended period and spawn bigger eggs and larvae with better survival rates. Finally, for sequential hermaphrodites where all the larger individuals may be of the same sex, significant removal of large fish may prejudice the spawning success of the population.

Spearfishing also has a particular stakeholder value since amongst participants it is greatly prized as a pastime. However, it should also be noted that, if spearfishing was banned, there could be an economic gain for artisanal fishermen (who could see an increase in their catches) and for other businesses such as diving centres (who could see a rise in the number of scuba-divers as they would enjoy the benefit of seeing more live fish underwater). Unfortunately, we cannot quantify these economic gains with the available data.

The biological implications of spearfishing mean that planning and implementing a comprehensive management strategy in Mediterranean coastal areas, especially in MPAs, must include this leisure activity.
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Guidetti P, E. Vierucci E and S Bussotti (2008). Differences in escape response of fish in protected and fished Mediterranean rocky reef. Journal of the Marine Biological Association of the United Kingdom 88(3): 625-627.

sea breams in areas targeted by spearfishing exhibited an altered "escape response" by swimming out to open waters rather than seeking rocky shelter. Why is this important? For two reasons: 1) The study suggests that spearfishing, especially on scuba, alters the natural predator-evasion response of some fish — meaning that there could be impacts to the populations even when spearfishing is not directly involved; and 2) Fish might avoid any scuba diver, not just those with spears.
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Sabater MG and SP Tofaeono (2006). Spatial variation in biomass, abundance, and species composition of "key reef species" in American Samoa. Department of Marine and Wildlife Resources, Pago-Pago, American Samoa.

New technologies have enabled remaining fishermen to use more efficient methods to increase their catch. This includes use of SCUBA to increase their bottom time, spearguns enabling them to target bigger fish, and powerful boat engines enabling them to cover more area in one day. When SCUBA assisted spearfishing was introduced in 1994, there was a drastic increase in fish catch targeting mostly large fish. Parrotfish have since been heavily exploited, giving rise to a 15 fold increase in catch. Such efficient techniques enabled fishermen to harvest 18.7% of the standing stock. This was the basis for banning SCUBA spearfishing within the territory through Executive Order.

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Nevill J (2006). The impacts of spearfishing: notes on the effects of recreational diving on shallow marine reefs in southern Australia. OnlyOnePlanet Australia; Hampton Melbourne.

Spearfishing activities are often concentrated at particular sites, and the activity is, in the right conditions, an extremely effective and efficient method of harvesting target fish – being far more time-efficient than angling in many situations.

Where reef species are heavily targeted, local populations of adult fish can be completely removed, and recruitment from deeper reefs may be low or non-existent. These locations are particularly vulnerable, and anecdotal evidence indicates local extinctions have occurred

By way of background, it is important to note that, globally, the importance of recreational fishing has been consistently understated and under-reported and that recreational fishing can cause ecosystem degradation of similar scales and types compared with commercial fishing.

According to John Ottaway: I have no doubt that the popularity of spearfishing in the 1960s, and no controls (when scuba gear became readily available) on spearfishing on scuba in the mid to late 1960s, was the major factor in the staggering decline in near-shore fish populations along the South Australian coastline, starting with the reef areas near Adelaide, and then radiating away from Adelaide as the nearer reefs became depleted.

There were many reefs along the Hallett Cove to Port Stanvac area where during the early 1960s I always saw many hundreds of fish, and commonly saw reef and pelagic specimens that would have been 5 kg plus and occasionally 10 kg plus. We left those big fish alone because the smaller fish were abundant, better eating, and we thought the big fish were probably important breeding stock. We also saw sharks reasonably often, ranging from 60 cm wobbegongs (frequently) to 4-5 metre white pointers (rarely).

In 1978, I went back to that same area on several occasions to have a look around, and was shocked to find the whole area where I used to spearfish was now a 'wasteland' with not a single fish over a couple of hundred grams to be seen. Even the big schools of pelagics were absent.
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It's clear that the pressure imposed by recreational spearfishing is considerable - easily enough to remove all the breeding stock from the site over a period of three or four years – and, even taking recruitment from deeper reefs into account, that's exactly what happened.

Spearfishing on compressed air, and night spearfishing should be banned immediately in all Australian waters, including all of the Australian EEZ. These techniques increase the vulnerability of reef fish, or open water aggregations, already under severe pressure. Spearfishing on SCUBA is currently banned in Queensland, New South Wales, Victoria and South Australia

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Birkeland C and P Dayton (2005). The Importance in Fishery Management of Leaving the Big Ones. *Trends in Ecology and Evolution* Vol.20 No. 7.

Though the recreational spearfishing community argues that it does not contribute to the decline in fish stocks, because spearfishermen are generally selective of their catch and take very few fish, there is evidence that selective harvesting of the largest of slow growing species is more damaging than harvesting a larger biomass of juveniles and might be an additional problem with unregulated spearfishing in general.

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(Dulvy N and N Polunin (2004). Using informal knowledge to infer human-induced rarity of a conspicuous reef fish. Animal Conservation 7:365-374.

C. Birkeland and G. Davis report that big schools of bumphead parrots were common in Guam in the 1960's, but they were spearfished out in the 1970's, and now they are rare. In Fiji, interviews with people revealed that when night time SCUBA spearfishing came to an island, the markets were filled with bumphead parrots, they were half or more of all fish in the markets. Now, in those same areas, they are rare and not seen in the markets. On some islands they have actually gone locally extinct

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Lowry M and I Suthers (2004). Population structure of aggregations, and response to spear fishing, of a large temperate reef fish *Cheilodactylus fuscus.* Marine Ecology Progress Series 273: 199–210.

Spearfishing may have a significant impact on such a long-lived resident population. There is evidence that spearing is responsible for the localised depletion of Cheilodactylid populations in New Zealand. Spearing selectively removes the larger size class and has the potential of removing a large proportion of the males.

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Green A, Birkeland C and N Dashbach (2003). Coral Reef Monitoring and Decision Making in American Samoa 2.

in response to several academic studies on the reef fisheries, the government of American Samoa decided to regulate SCUBA spearfishing in a way that prevents nearly all commercial catch.

The rules prohibit the use of SCUBA gear at night and limit catch from SCUBA spearfishing during the day to either two fish or five pounds per diver per day, whichever is greater.
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Dalzell P and D Schug (2002). Synopsis of Information Relating to Sustainable Coastal Fisheries. Apia, Samoa, International Waters Programme, South Pacific Environment Programme. 38p.

It might be expected that target species in a reef fishery would be spared total elimination by over fishing, as increasing scarcity would eventually render the fishery uneconomical. However, spear fishing (particularly with SCUBA), has reportedly driven some species to extinction or to very low levels in Guam (Charles Birkeland, University of Hawai'i, pers comm.; Hensley and Sherwood, 1993), Palau (Johannes, 1981a), American Samoa (Charles Birkeland, University of Hawai'i, pers. comm.) and Woleai Atoll in Yap (Smith and Dalzell, 1993). Another problem associated with SCUBA assisted spear fishing is a modification of fish behaviour over time, such that reef fish normally found in shallow water move down the reef slope to escape fishing pressure. This causes fishers to dive deeper to the margins of safety for SCUBA diving, with concomitant increase in health risks (Anon., 1999).
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Modern Spearfishing: A Risky Business. Pacific Islands Fishery News. Spring 1999: 1,3.

The threat to reef fishes posed by scuba spearfishers, particularly on small islands with high demand for reef fish, have led some traditional chiefs and local governments to take or contemplate regulatory action to curb this method of fishing. Without regulation, however, large snappers, groupers, parrotfish, wrasses and other reef fish will continue to live below their normal depth range and spearfishers will likely take increasing risks to hunt their quarry.
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Page M (1998). The Biology, Community Structure, Growth and Artisanal Catch of Parrotfishes in American Samoa. Department of Marine and Wildlife Resources. 91 p.

Analysis of catch statistics, growth data, fisheries models, and reproductive data suggests that populations of parrotfish in American Samoa may be threatened from over-fishing. Higher fishing pressure due to the introduction of SCUBA methods is likely to have increased exploitation rates of some species close to or beyond maximum sustainable yield (MSY). Given that; the mean size of large species of parrotfishes may be declining; the total estimated annual yield is close to MSY for the entire parrotfish stock; some parrotfish species may be over exploited; large, slow growing species are being caught before they reach sexual maturity; that SCUBA spearfishing accounts for up to an estimated 89% of the total annual yield.
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Parrotfish and surgeonfishes sleep in refuges at night, which makes them vulnerable (especially the brightly colored terminal phase male scarids) to spearfishers. Introduction of SCUBA technology is making the problem worse by allowing fishermen to dive deeper for longer. They are able to catch fish that were previously afforded some sanctuary at depth. The practice of fishing at night is likely to have a significant effect on the inshore subsistence fishery.

It is recommendation of this study that the use of SCUBA spearfishing be outlawed.

SCUBA fishing should cease as soon as possible. Free diving should be allowed to continue, and does provide fishermen with a way to make a living. Banning

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Dalzell P, Adams, TJH and NVC Polunin (1996). ***Coastal Fisheries in the Pacific Islands, Oceanography and Marine Biology: an Annual Review 1996*** **395-531.**

scientists have attributed the extinction of the doubleheaded parrotfish (*Bolbometopon muricatum,* the largest species of parrotfish) and the humphead wrasse (*Cheilinus undulatus*) in Guam to the practice of SCUBA spearfishing.

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Johannes RE (1991). Some suggested management initiatives in Palau's nearshore fisheries and the relevance of traditional management. Inshore Fisheries Research Project Country Assignment Report, CSIRO Division of Fisheries Hobart, Australia. August, 1991.

A number of fishermen suggested banning spearfishing using SCUBA (as is already done in Koror State), and there was virtually unanimous support for this suggestion among other fishermen I talked with. Certain species of fish which were easily speared at night have moved into deeper water in the past 20 years according to fishermen. SCUBA enables divers to pursue them even into their deeper retreats and their numbers are reportedly seriously declining.

I recommend a total ban on spearfishing with SCUBA except for research purposes, and that a permit be required for the latter. The practice favors more affluent fishermen. Spearfishing using SCUBA also facilitates the pursuit of some declining species into the deeper water refuges they are widely reported to seek under pressure from snorkeling spearfishermen. The use of SCUBA for spearfishing will undoubtedly continue to increase and be harder to control if it is not checked as soon as possible. All fishermen I talked to supported such a ban, often suggesting it themselves.

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Oakley SG (1984). The effects of spearfishing pressure on Grouper (Serranidae) populations in the Eastern Red Sea. Proc. Symp. Coral Reef Environ. Red Sea. Jeddah, 341-359.

The poorer ethnic groups, mainly from the Far East (Philippines, Thailand and Korea) fished
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exclusively for food and were not species selective. These spearfishermen fished mainly in 2-3 m of water above the reef edge and took any fish available. Preference was indicated for the larger species and/or individuals. The remainder of the spearfishermen fished mainly for sport (shooting the largest fish possible and/or the maximum number). These people (of many nationalities) used snorkeling techniques or occasionally SCUBA to locate and shoot fish at depths of 10-15 m by snorkeling or at depths of up to 30 m using SCUBA. This second group were much more species and size selective, preferring large specimens of the following groups:- Groupers (Serranidae), Jacks (Carangidae), Wrasse (Labridae), Tuna (Tunnidae), Barracuda (Sphyraenidae), Snappers (Lutjanidae) although Grunts (Haemulidae) and Emperors (Lethrinidae) were taken if available. Spearfishing, can however be very selective taking the largest individuals from a population. More frequently, all individuals over a certain size are shot at.

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SCUBA SPEARFISHING PROHIBITIONS	
Fiji	
American Samoa	No SCUBA spearfishing after sunset/before sunrise
Tonga	
Palau	
Samoa	
Solomons	
Yap	
Chuuk	
Pohnpei	
Kosrae	
Saipan	
Tinian	
Rota	
Society Islands	
Marquesas	
Tuamotus	
Austral Islands	
Gambier Islands	
Vanuatu	
New South Wales, Australia	
Queensland, Australia	
South Australia	
Northern Territory, Australia	
Wallis & Futuna	
Victoria, Australia	
Galapagos	No spearfishing
Niue	
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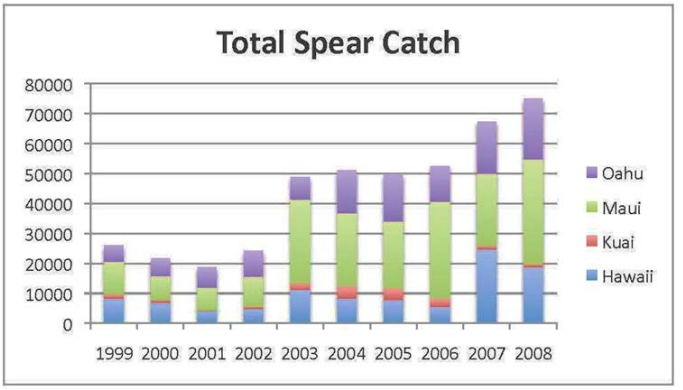
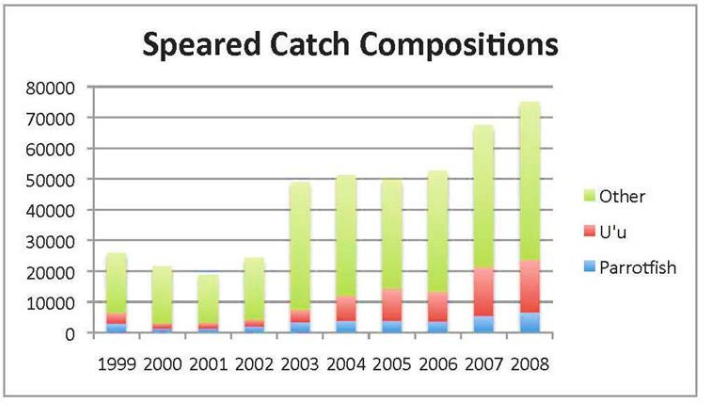
Philippines	
Okinawa	
New Caledonia	
PRIA –Pacific Remote Island Area	No SCUBA spearfishing 6PM – 6AM
Puerto Rico	No recreational SCUBA spearfishing
Panama	
Canada	
Tanzania	
St. Eustatius	
Cocos (Keeling) Islands	
Bermuda	
Costa Rica	
Cayman Islands	
British Virgin Islands	No spearfishing
Bonaire	No spearfishing
Bahamas	No spearguns, No SCUBA take
Curacao	No spearfishing
Netherland Antilles	No spearfishing
Antigua & Barbuda	No spearfishing
Mauritius	No spearfishing
Maldives	No spearfishing
Seychelles	No spearfishing
Malta	
Belize	
Cyprus	
Mallorca	
Grenada	
Greece	
Saudi Arabia	
United Arab Emirates	
Italy	
Croatia	
South Africa	
Mexico	
Bulgaria	
Djibouti	
Chagos	
Kenya	No spearfishing

Allen LC (2009). SCUBA Spearfishing Research Memorandum 2009, Hawaii DLNR-DAR. 32 p.

Total spear catch has been increasing in the islands over the past ten years, though catch on the Big Island and Kaua'i is less than it was ten years ago.



Though parrotfish and u'u have been identified as the most vulnerable species to SCUBA spearing, they do not account for a majority of speared fish.



On most islands, surgeonfish account for the majority of fish caught by spear.

Spearing of parrotfish has already resulted in changes in the population. On O'ahu and Hawai'i, the average size of parrotfish is half what it was in 1999. Only in Kaua'i has the average size remained constant; there the number of parrotfish speared is small and has remained relatively unchanged.

Averages in O'ahu and Hawai`i were closer to the L50 reproductive size (the size at which 50% of the population is reproductive) for most species of parrotfish before sharply dropping off between 2000 and 2003. This might suggest that the reproductive fish, especially the males, are being systematically fished first, and the remaining population is largely juveniles. This is of concern because according to Spearfishing in the Pacific, *supra* note 10, at 13 nightfishing and SCUBA spearfishing may be able to continue even after fish abundance is too low to sustain a reproductive population.

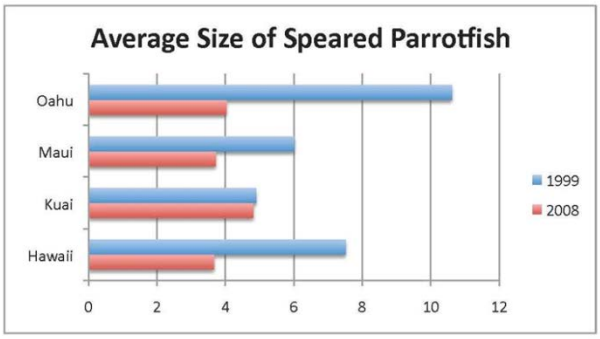
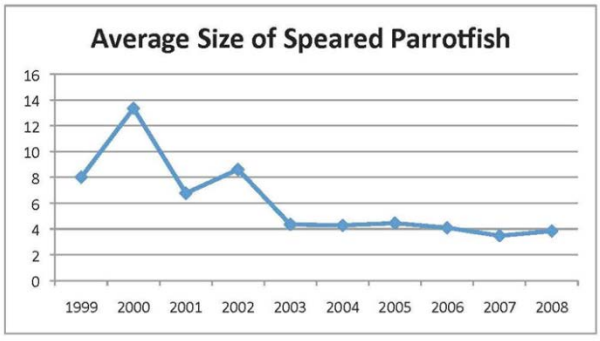


Figure 11



The u'u spear fishery faces similar problems. Though the number of fishermen has remained relatively constant in all the islands, the catch has dramatically increased and the average size declined.

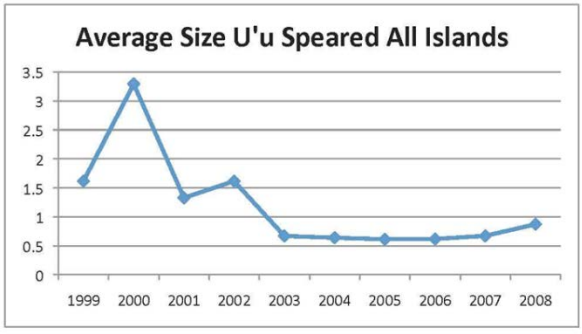
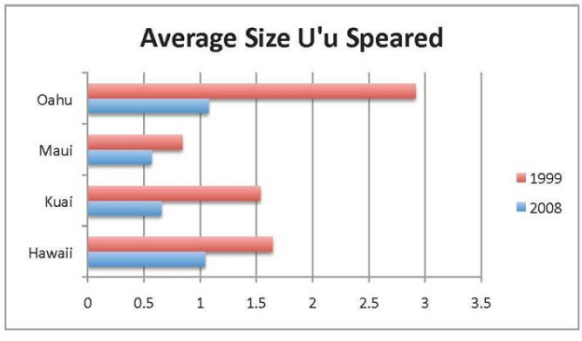


Figure 16



I would therefore recommend a management regime that combines limits on SCUBA spearfishing (either by banning it or limiting the number of fish speared), a ban on all night SCUBA take and bag limits and/or maximum size limits for parrotfish and possibly u'u.

West Hawai'i Commercial Spearfishing

The only data available on Scuba spearfishing are the mandatory catch reports for Commercial Marine License (CML) holders. For the purposes of these catch reports, spearfishing (i.e. "spearing") is defined as "Fishing with a shaft with one or more sharpened points at one end usually associated with diving. Includes bow and torch fishing." Unfortunately the catch report does not differentiate Scuba spearfishing from free dive spearfishing. Although it may be a valid assumption that most commercial spearfishing is conducted on Scuba, it should be acknowledged that the following data likely overestimates the actual amount of Scuba spearfishing since it may also include free dive spearfishing.

Figure 1 shows the number of commercial spearfishers in West Hawai'i in relation to the four main targeted fish groups. Over the last 5 years fishes in these four groups represented 92% of the total spearfishing catch and 100% of the value of the catch.

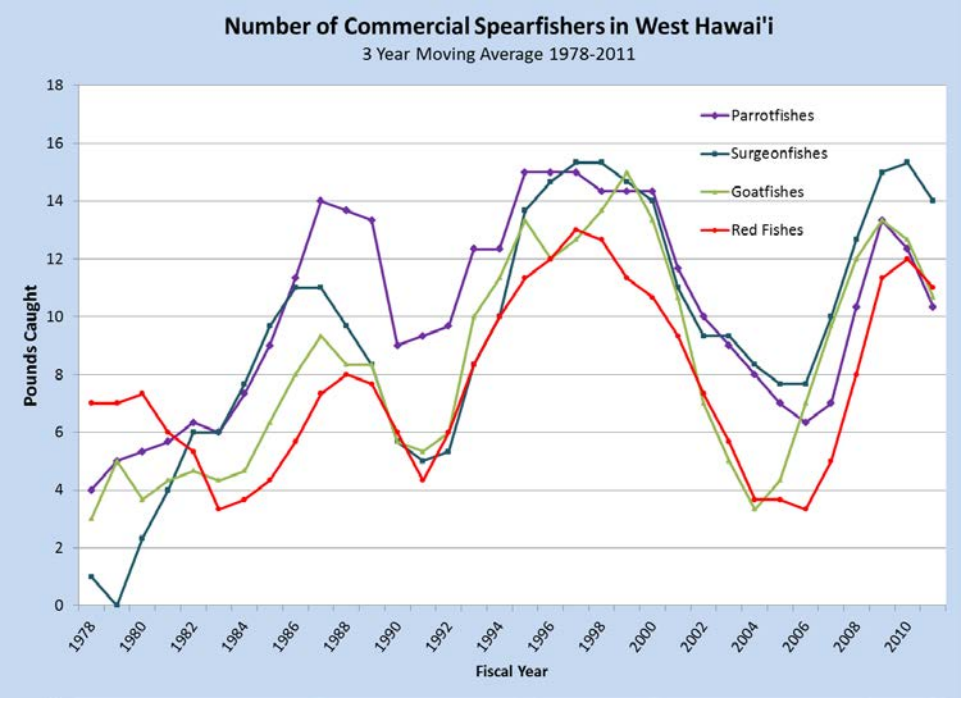


Figure 1.

The average number of commercial spearfishers in West Hawai'i over the past 5 fiscal years is 16. There were a total of 41 different CML holders spearfishing during this time period

indicating a relatively high turnover of participants.

2011	16
2010	16
2009	21
2008	13
2007	12
Avg.	**16**

Figure 2 shows the total pounds of fish caught by commercial spearfishers for the four primary targeted groups. Most of the groups (perhaps excluding red fish) had a peak in the mid 1990's.

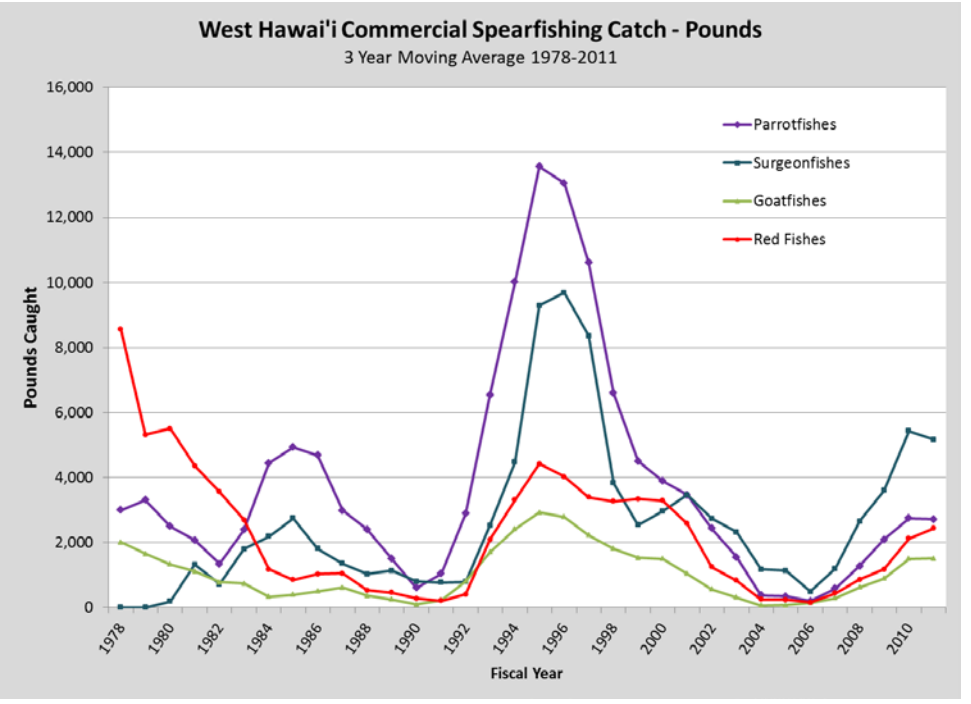


Figure 2.

Figure 3 shows the total number of fish caught by commercial spearfishers for the four primary targeted groups. Note the substantial increase in recent years in the take of surgeonfishes and red fishes (primarily u'u – menpachi) with only a minimal increase in the total poundage caught (Figure 2). This may suggest that the overall size (i.e. weight) of surgeonfishes and red fishes taken by commercial spearfishers has declined in recent years. In analyses of these sorts, data quality is always an important consideration and it is unknown whether commercial reports of catch numbers and poundage are equally reliable. Thus the relationship between fish numbers and weight should be viewed cautiously.

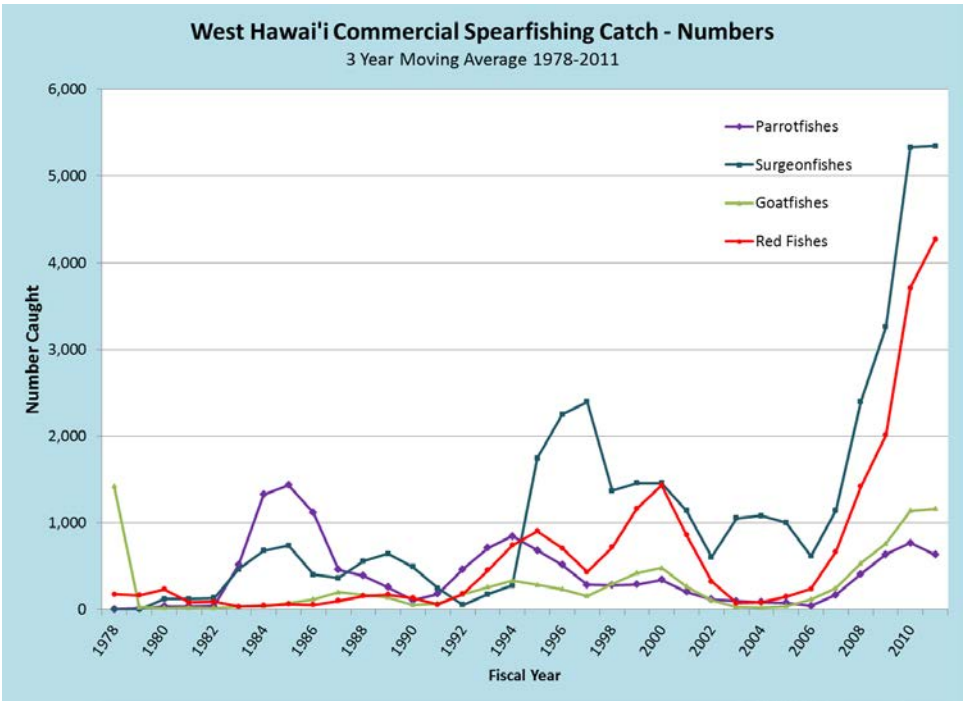


Figure 3.

Figures 4 and 5 show the commercial catch per spearfisher for numbers and pounds of fish respectively.

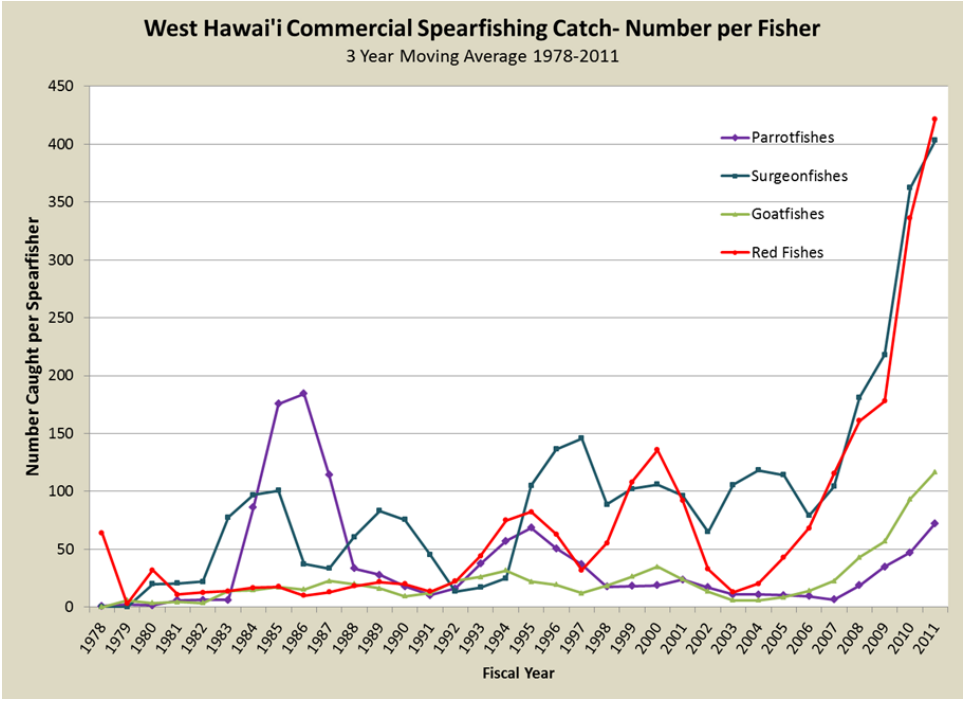


Figure 4.

Again the catch data indicates that while the numbers of fish landed per individual spearfisher has increased in recent years for surgeonfishes and red fishes, the total weight caught of these and other speared fishes has declined over time.

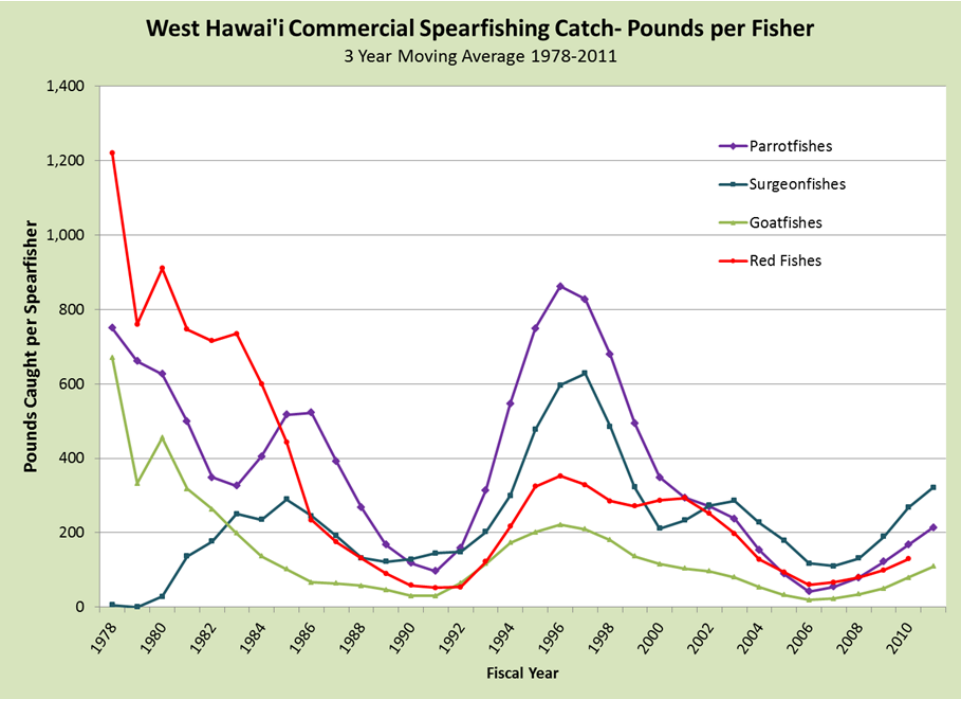


Figure 5.

The total annual dollar value of the reported (i.e. 'legal') West Hawai'i commercial spearfishery averaged over the past five fiscal years is $25,647. As noted previously the number of commercial spearfishers during this period ranged from 12 to 21 with an average of 16.

Figure 6 shows the average value of spearfishing catch for the 41 different CML holders who reported spearfishing catch over the past five fiscal years. A near-majority of commercial spearfishers (20) reported total annual sales of less than $50. Only two fishers reported catch exceeding $5,000 and only a single fisher exceeded $20,000 (for 2 of the 5 years).

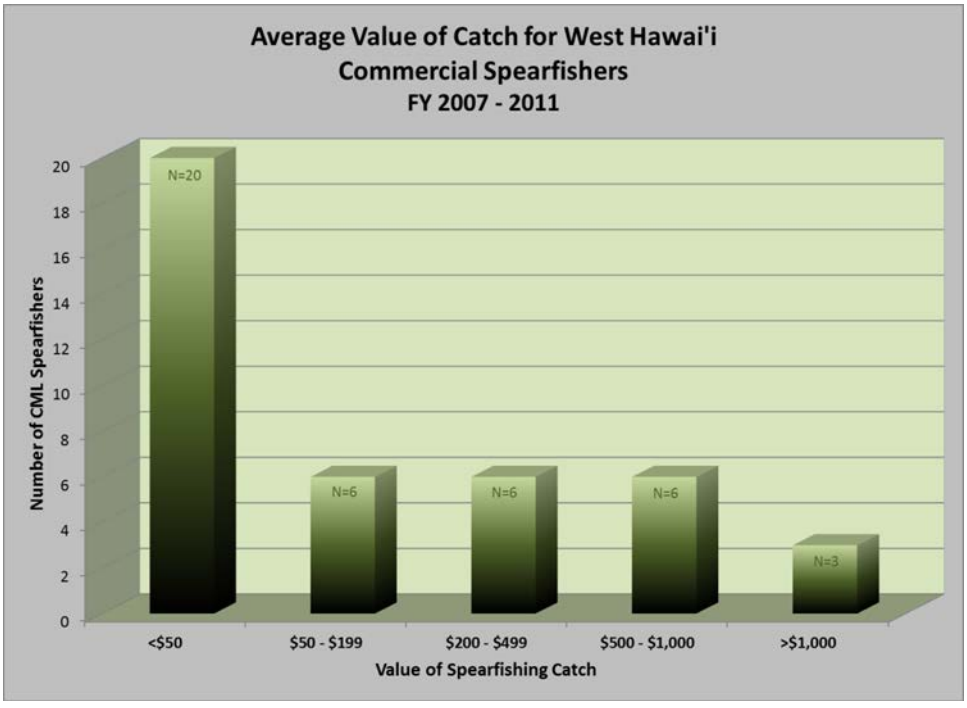


Figure 6.

Public testimony at all geographic levels was overwhelmingly in support of the proposed SCUBA spearfishing ban. This testimony is summarized below and following that are all the testimonies which directly related to the proposed SCUBA spearfishing ban.

Summary of Public Testimony on HAR 13-60.4 – SCUBA spearfishing Ban

	In Support			In Oppositon	
	No.	%		No.	%
All Testimony	668	90%		76	10%
State of Hawai'i	523	88%		71	12%
Hawai'i Island	491	89%		63	11%
West Hawai'i	462	89%		57	11%

West Hawai'i SCUBA Spearfishing Ban Proposal

Testimony submitted 17 Oct. – 19 Dec. 2012

Public Testimony In Support of Ban

I wish to submit testimony especially for the rule concerning banning the use of scuba with spearfishing for the following reasons.

Nearly all tropical countries (e.g., Philippines, Okinawa, New Caledonia, Galapagos, Palau, Yap, Chuuk, Pohnpei, Kosrae, Samoa, American Samoa, Tonga, Fiji, Solomon Islands, Northern Marianas, French Polynesia, Queensland Australia (Great Barrier Reef), Tahiti and the rest of the Society Islands, Vanuatu, Marquesas, Tuamotus, Gambier Islands, Austral Islands, Seychelles, Cocos Keeling, Mexico, Bahamas, Bermuda, Belize, Curaçao, Bonaire and most others) have banned the use of spearfishing with scuba because viable fisheries cannot be maintained if the removal of the breeding stock of larger fishes becomes too thorough. Spearfishing with free-diving (mask, snorkel and fins) is an honorable sport and a viable fishery can be maintained, but the added technology of scuba allows the fishers to be very effective in targeting sleeping parrotfishes at night and can be selective in targeting the larger fishes.

Studies of hundreds of species of fishes have demonstrated that when the age or size structure of a fish population is "truncated" (older or larger individuals are "chopped off" and the size distribution is abbreviated) by selective removal of larger individuals, then recruitment or population replenishment seriously declines, becomes sporadic, and the fisheries population loses resilience and sustainability (Longhurst 2002; Anderson et al. 2008; Venturelli et al. 2009, 2010; Hidalgo et al. 2011; Rouyer et al. 2011; Stewart 2011). Although gill nets can be detrimental because of wasted bycatch and by catching large numbers of fishes, spearfishing with scuba can have a greater effect on the sustainability of fisheries by selectively targeting the larger fishes which can lead to the exponential reduction in the number of eggs and larvae produced, shorten the population's reproductive season and thereby reducing the chance that some of the larvae will encounter favorable conditions, lowering the average survival potential of larvae produced,

selection for slower growth and reproduction at a smaller size, and in extreme cases, lowering genetic heterogeneity (Birkeland and Dayton 2005).

How does effectively catching large fish have a greater impact on population replenishment than several times the total weight of medium-sized fishes? In nature, the fecundity goes up by about the cube (volume of gonads are length X height X width) of the gonads. It has been measured that a large snapper (61 cm length, 12.5 kg weight) has the same fecundity as 212 medium-sized snappers (42 cm each totaling 233 kg). Therefore, some Pacific islanders wisely harvest medium-sized fishes (e.g., 233 kg) and leave the big ones, because taking only one big one (12.5 kg) has the same effect on the sustainability of the population. In the modern world, people tend to be disconnected from nature and want the glory of taking a big one and don't think about the sustainability of the harvest, nor the value of 233 kg over 12.5 kg for the same cost to the system.

The late Robert Johannes spent much of his career learning the wisdom of the elder fishermen in Micronesia in resource management. He pointed out that the wise elders could see through the complex interactions and unpredictable recruitment patterns in assessing the state of their fisheries resources with straightforward observations as to whether the big ones were still there. Although there is still a great diversity and large numbers of colorful aquarium fishes on our reefs, the large fishes are scarce. The movies by Louis K. (Buzzy) Agard show that there was an abundance of large fishes immediately following World War II. But this was the time that scuba arrived and the large ones have substantially deceased since fishers have been given the power of high technology of scuba. It does not take rocket science to realize that we must ban the use of scuba with spearfishing.

In addition to reducing the sustainability of the fisheries, the taking of a substantial portion of large individuals of parrotfishes can have serious detrimental effects on the coral-reef ecosystem. Larger parrotfishes actually scrape the substratum when removing seaweed, thereby keeping the seaweed under control and facilitating coral growth for healthy systems. The smaller parrotfishes are relatively ineffective and so the decrease in large parrotfishes in Hawaii can lead to an increase in seaweed and the resulting degeneration of the Hawaiian coral-reef ecosystem. Kathrine Howard (2008) in her PhD dissertation on the "Community structure, life history, and movement patterns of parrotfishes: large protogynous fishery species" found that large individuals of the parrotfish

Scarus rubroviolaceus were ten times as abundance in Hanauma Bay where they were protected from spearfishers than other places with similar reef structure around Oahu. She calculated that only Hanauma Bay and a couple of other small areas largely inaccessible to divers had viable populations. It is urgent to ban the use of high technology such as scuba and night lights to harvest parrotfishes. For both the viability of parrotfish populations and the health of coral reef ecosystems, we must not allow scuba to be used with spearfishing. In the late 1970s, I observed the elimination of the large humphead parrotfish *Bolbometopon muricatum* from Guam. They were spectacular to observe until they were removed by commercial spearfishers when they began using scuba. The same was observed in American Samoa when commercial fishers began to use scuba (Page 1998).

I have heard several times in Micronesia and in American Samoa, the fishers say "Our resources do not belong to us, we are borrowing them from our children and our future generations." This is why most other countries and coastal villages allow spearfishing by free-diving, but prohibit the use of high-technology scuba.

I am particularly in support of the ban on spearfishing with SCUBA.

Anyone with knowledge of the marine resources of Hawai'i knows very well that the populations of our reef fishes are seriously depleted.
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In the case of SCUBA spearfishing, a number of fishermen in attendance vehemently opposed the rule banning the practice. Their reasons were:

1. I have to **feed my family**.
2. I am a "waterman" and this is the only **lifestyle** I know.
3. I need to **make a living** and this is what I do.
4. **I like to provide** for my friends and extended family.
5. My family has been **fishing for generations**.
6. As a **native Hawaiian**, I have a **right** to fish using any method.
7. This has been our **tradition** for "thousands" of years.
8. Hawaiians have **evolved** along with everyone else to use modem equipment instead of the
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traditional ways. It is our right.

9. I have a right to pass on my fishing **tradition to my children**.

10. It is too **hard to find fish** at snorkeling depth. There aren't as many as before.

11.DLNR has **no jurisdiction** over native fishing privileges.

12.There is **no enforcement**, so the rule is meaningless.

13.The provision that bars having spears and SCUBA together in a boat or vehicle is **unfair**.

14. **I know more** about the habits of fish than any PhD from the mainland.

15. **Haoles** aren't going to come in here and tell us native Hawaiians how to fish.

There was a general lack of understanding of the real problem being addressed by this provision of the rules package: overfishing. In fact, this is the common link between most of the rules in the package. The issues are not of "native rights" or a "right to fish" or continuing a "tradition of generations" or passing on fishing knowledge to the "next generation." The issue is one of methodology. Spearfishing with SCUBA, especially at night, is a relatively new technique that represents a quantum advance in efficiency. It is proving to be too successful, and therefore, unsustainable. The grandfathers of the same people who were invoking the "tradition of generations" did not use SCUBA and/or high-powered spear guns. The right to pass this new "tradition" on to children will do them no good if there are no fish to be had. Opponents made the very point that the rules address: it is getting harder to find fish. Overfishing is already occurring in West Hawaiian waters, which is all the more reason to address it now.

Some opponents took the rule personally and turned it into a Haole vs. Native issue, or a "phony PhD science" vs. real life knowledge issue or an outsider vs. local issue. The point that most other Pacific Islanders and Australians, as well as Bahamians, Mexicans and many Caribbean Islanders have already banned this practice, apparently did not sink in. Those places also have their watermen, fishermen and generations of tradition, but they have seen the results of overfishing and taken steps to stop it and provide for future generations. Fishermen there will actually be able to pass on a fishing tradition to their children. One West Hawaii fisherman from down south who testified, made it clear that he would continue SCUBA spearfishing, regardless of any rules package, in defiance of the law.

Again, the issue is one of methodology. Dynamite and bleach are two very effective techniques for killing and then collecting fish. These are still used in other countries, even today. West Hawaii fishermen can certainly understand that these are destructive and unsustainable practices and would never support them here in Hawaii. The challenge is to get them to see that SCUBA spearfishing is another technique along a continuum, whose extreme on one end is dynamite, that will produce an unsustainable outcome.

Some people at the hearing were open to banning night SCUBA spearfishing alone, or setting bag

limits, or designating closure areas, but did not support an overall ban. The problem with this approach is insufficient protection and lack of enforceability. Various degrees of SCUBA spearfishing do not solve the basic problem of overfishing. Daytime SCUBA spearfishing will eventually lead to the same fish population depletion. It will just take longer.

Only banning the presence of spears and SCUBA in the same boat for any reason at any time produces a workable and enforceable outcome.

Enforcement is a legitimate concern, since DLNR doesn't have the manpower to patrol all of West Hawaii's waters. Citizen monitoring is the best method of enforcement in Hawaii. Other stakeholders will protect their interests. People on shore can see aquarium fishermen crossing FRA boundaries. Dive operators and line fishermen can see SCUBA spearfishermen in the water. Cell cameras can record boat registrations, so there is a way to address the issue of enforcement. People can report the presence of SCUBA and speared fish or spears in a vehicle or boat and record the registration or license number.

I have dived here for over two decades and have observed a decline in larger individual of certain species like parrotfish, jacks and wrasses at sites where I have also observed increased spearfishing activity targeting just these species. It's not science, but it's probably not coincidence either. I have seen SCUBA spearfishing up close and can say that, recreationally speaking, it is not a sport but rather a slaughter, especially at night when fish are actually asleep. For the same reason, it is commercially unsustainable and non viable. Almost everyone else in the world seems to have figured this out. Hawaii is one of the few places that have not already banned spearfishing with SCUBA and we need to remedy that now.
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Night dives reveal many diurnal fish which rest in cracks and crevices, relying on camouflage (like mucus) that works great against predators but not against divers. Parrotfish have suffered greatly elsewhere in the Pacific (notably Samoa) due to spearfishing at night by divers using SCUBA. A survey of dive spots not just in the South Pacific, but around the world, shows that Hawai'i is one of the last dive recreation destinations to still allow spearfishing with SCUBA because the toll of such fishing is just too a sacrifice for other people using the reefs. Other arguments aside, that puts Hawai'i in the unenviable position of attracting spearfishermen addicted to a technique that has proven harmful elsewhere.

Another red herring thrown out in the public hearing was the claim that SCUBA was primarily used by kupuna to allow them to do what they had done earlier in life by freediving. I am living proof that we start to wear out with age; and more specifically, that we cannot freedive as deep or as long in old age as we did in our prime. But the preponderance of the opponents' testimony leads to the obvious conclusion that the overwhelming majority of use of SCUBA for spearfishing is done by men in their healthy years. They may be giving a few extra fish to older people, but they are in it for the money.

Equally questionable is the claim that spearfishing with SCUBA is a "cultural practice" protected by laws specific to the Hawai'ian community. There is no doubt that Hawai'ians love to eat parrotfish. (So do a lot of other people!) But "cultural practice" cannot be extended to whatever puts uhu in the mouth of a
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Hawai'ian. Obviously SCUBA has not been used by anybody for more than 2 generations. There were no ancient Hawai'ian SCUBA fishermen. One testifier suggested that the state recognize the "evolution" of cultural practices. That is a slippery slope. Special privileges have been rightfully granted to those in the Hawai'ian community who opt out of the money economy and support themselves largely through a subsistence economy similar to the one practiced before the European invasion. That is a cultural practice the whole society can accept and subsidize. One testifier, Leonard Torricer, has argued in the WHFC that "subsistence" fishing can be selling fish to pay for a grocery bill. There is nothing wrong with selling fish to pay for anything one wants, but DLNR, as well as the state as a whole, has to be careful to not stretch the English language in the way Mr. Torricer suggests. The subsistence laws were based on what "subsistence" really means in English, and the word "subsistence" precludes any activity in the money economy. You cannot buy a big truck; you cannot pay for a home; and you cannot buy parrotfish with money earned through fishing and call that "subsistence fishing." You cannot market fish from the "subsistence community" of Miloli'i in the city of Hilo. It can be legitimate business, but it is on a par with other small businesses in Hawai'i. These businesses are regulated by the state to prevent depletion of common resources, or, in this case, overfishing.

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It has come as welcome news that someone, somewhere in HI finally recognizes how spearfishing can seriously deplete our marine resources. And this is even more so using tanks and at night. I bet most people don't realize it, but spearfishing in general is an efficient way to eliminate species of fish. That's why roi roundups which are held to eliminate the roi, toau, and taape are spearfishing tournaments. Oh, but the divers who hold these tournaments will have you believe that they are our stewards of the ocean. To me, it's like letting the fox be the steward of the hen house. And they also have a big part in the proliferation of these so-called undesirable species of fish. The divers want zero restrictions on spearfishing. Instead they think or want others to think that establishing bag limits (which should only apply to themselves) is the way to go. Correct me if I'm wrong, but don't you need something to bag in order to have bag limits? It's not like we have tons and tons of kumu, uhu, menpachi, moana-ukali, etc, along our shoreline and we better set bag limits before they're all gone.

No, we hardly have any of these fish along our shorelines. So if you have 30 (and this is a very liberal amount) kumu along a one-mile stretch of shoreline and set a bag limit of two kumu per person per day, and one night five divers come in a boat and each take their bag limit share, this would total 10 in one night. In one night one-third of the kumu in that area is gone. Two more nights and you'll have zero in that area. On the fourth night another area will be hit. This scenario has played out many times. Awhile back I spoke with the DLNR officials on Samoa and they said the same thing. They told me that they might "think" about bag limits in the future.

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I have watched SCUBA divers fill up large bags with lobsters they took on SCUBA. A SCUBA diver can go into large caves, especially those that are 40 feet or more below the surface, and systematically take every lobster in the cave. I have never found lobsters in caves where SCUBA charters regularly visit.

This rule should be added immediately. All of these rules should have been passed 30 years ago.

Since June, 1983, I have spent tens of thousands of hours diving in Hawaii waters. I am adamantly opposed to spearfishing on SCUBA.

I have seen first hand how spearfishing on SCUBA has wiped out entire fish populations. I have frequently watched divers (in person) on SCUBA spear hundreds, perhaps thousands, of reef fish, and all of this in the course of an hour or two. I have watched large populations of mu and uhu completely disappear over the years due to commercial spearfishing on SCUBA.

As a respected and responsible freediver and spearfisherman, I find this deplorable. Spearfishing while using SCUBA, particularly at night, allows a person unlimited access to sleeping fish, and allows them to wipe out an entire area of many local species.

An argument was made last night in Kona that passing a law forbidding spearfishing on SCUBA would prevent locals from getting food they need.

As a freediving spearo, I dispute this argument. It is absurd and wrong. If anything, spearfishing on SCUBA has decimated fish populations throughout the islands, even in very difficult places to reach. I have seen the fish populations plumet since the 1980's. I have seen the ice chests full of reef fish, including massive amounts of Mu, Kumu, and Uhu. If anything, spearfishing on SCUBA has wiped out fish populations in such a way as to prevent locals from getting reef fish, because the reef fish aren't there to get!

Spearfishing on SCUBA (or any kind of supplied air) should be banned immediately.

The National Park Service (NPS) specifically supports the proposed ban of SCUBA spearfishing within the Kaloko-Honokohau Fisheries Management Area. Kaloko-Honokohau National Historical Park was authorized in 1978 "to provide a center for the preservation, interpretation, and perpetuation of traditional native Hawaiian activities and culture, and to demonstrate historic land use patterns as well as provide needed resources for the education, enjoyment, and appreciation for such traditional native Hawaiian activities and culture by local residents and visitors…" (Public Law 95-625). Breath-hold spearfishing is one of many fishing methods traditionally used by Hawaiians and this method can maintain a sustainable fishery. The proposed ban on SCUBA spearfishing in the Kaloko-Honokohau FMA is in keeping with the National Park's authorizing legislation and goals of preserving and perpetuating the traditionalHawaiian cultural and activities, and will enhance replenishment of nearshore fish stocks.

The majority of Pacific Island countries ban SCUBA spearfishing (Gillett and Moy 2006). The detrimental effects of SCUBA spearfishing includes selective targeting of larger fishes, targeting a wider number of species than other fishing gear, and accessing larger fishes in deep water refugia that are inaccessible to most breath-hold spearfishers (Gillet and Moy 2006). Selective targeting of and access to larger fish is of particular concern. Berkeley et al. (2004a) and Berkeley et al. (2004b) demonstrated that older, larger female fish produce offspring that survive better and grow faster than the offspring of younger fish. This finding has important implications for fisheries management (Berkeley et al. 2004b, Birkeland and Dayton 2005). These older; larger fish provide substantial economic and ecosystem value to the West Hawaii community (Cesar and Beukering 2004). Adoption of the proposed new rule will

ultimately support the sustainability of this important community resource.
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A group of fisherman has objected loudly and may have made the impression that there was more of them than the actual people present. These fisherman have primarily objected the ban on spearfishing on scuba with two main points. The first is the right to feed their families and the second is the right to continue fishing as their parents and grand parents before them. To these people I say, this bill only target spear fishing on scuba. Any one willing will be still allowed to spear fish for their family needs the traditional way (non-scuba) just like their parents and grand parents did before them.

I feel that these fisherman though passionate were misinformed, some may not have understood that the ban is for scuba spearfishing only and the others that wants to continue spear fishing on scuba can not justify this as a tradition (scuba certainly was not available to their ancestors) nor the need to feed their families which can be satisfied by other, less destructive, fishing methods.

I will strongly suggest the DLNR go a head and pass the spear fishing on scuba ban as well and make Hawaii join all the other countries that understood the importance of it as was stated in the hearing by all the wonderful and detailed testimonies.

Many other countries have outlawed spearfishing using scuba gear. It is a solid idea, and I'm glad that Hawai'i is finally catching up with the rest of the world!
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The usual argument in favor of SCUBA spearfishing is that it is highly selective and avoids waste. However, this selective quality has also proven to be SCUBA spearfishing's greatest negative attribute. SCUBA spearfishing allows for highly efficient harvesting, enhanced targeting of prized species, and a preference for bigger fishes; together resulting in the removal of large numbers of important fishes at their most productive ages. SCUBA divers can spearfish for extended periods of time and at depths that are unavailable to other types of fishers and fishing methods and that would otherwise serve as refuges for many fishes. These conditions are magnified when SCUBA spearing is employed at night when many species are sleeping. This is particularly problematic when groups of fish like herbivores (e.g., uhu) are targeted in large numbers while sleeping under ledges, in holes or caves. The grazing behavior of such species is critical to ecosystem function, coral health and sand production.

Having experienced the negative effects of SCUBA spearfishing, several nations (e.g., Australia, Mexico, Belize) and most Pacific island countries and territories (e.g., Fiji, Marianas, Tonga, American Samoa, Samoa, Solomons) have banned or severely restricted SCUBA spearfishing. Coupled with other management regimes and consistent enforcement, the proposed ban on SCUBA spearing in the West Hawai'i rules package is a reasonable and justified component of a broader management strategy in support of near shore fisheries and habitat health so these resources will flourish for the benefit of present and future generations of people.
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I have been spearing fishes for over 70 years, first as a teenager for sport and proudly bringing home fish for dinner, later for my research as an ichthyologist.
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If one is spearing fishes with SCUBA, it can hardly be considered as a sport. It is banned in many places in the world, such as Mexico, the Bahamas, and Australia, and it should be in Hawai'i. The most offensive is spearing sleeping fishes with SCUBA at night.

This is a special threat in Hawai'i because of the vulnerability of some of our endemic fishes, such as the Spectacled Parrotfish (Chlorurus perspicillatus), the male uhu uliu uliuli and female uhu 'ahu'ula, the largest of our parrotfishes. The largest of Atlantic parrotfishes, the Rainbow Parrotfish (Scarus guacamaia) is now extinct in Brazil, and the main cause has been attributed to spearfishing.

Another bad effect of spearfishing is the fear of man that it soon creates in resident fishes. If you dive on a pristine reef that has never experienced a skindiver or scuba diver, it is amazing how closely you can approach the resident fishes. All it takes is a single spearfisherman to disrupt this tranquility, especially one with noisy SCUBA gear.

So let us ban spearfishing with SCUBA and save it for observing our reef fishes, instead of killing them.
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I've worked both as a marine biologist and a commercial fisherman. My specialty as a fisherman was SCUBA spearfishing. As one of two people involved in this on the island that I lived on, I was able to witness firsthand the very destructive nature of this fishery to the resource.

The most offensive is spearing sleeping fishes at night. We all know that. Those of you that spear fish know the fishes that sleep at night. I kind of liken that as a defensive trainer of going into someone's bedroom and taking a shot at them without their eyes open.

this diving and taking fish, especially the parrot fish that are sleeping at night, I don't think that that's acceptable. How about not spearing at night.

Some of the rules changes included are the prohibition of spearing fish while on SCUBA. This has already been banned in most areas of the world.

There are many people removing fish from our reefs. Some are doing it while spearfishing on SCUBA, some are collecting the fish for resale, and others just not paying attention to the overfishing that is rampart across our reefs.
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I wish I could attend your public hearing to express my support for the ban of SCUBA Spear fishing and limiting of numbers of Acquarium species to 40. Unfortunately, I have no vehicle and I live far in Waikoloa Village. I am from the Marshall Islands and I just moved to live in Kona last March 2012. During my short here, I am amazed of the richness of the marine reef fish spieces here at Kona coastal waters.However, because these coastal reef fishes do not migrate far and wide that they are very sustible to over fishing

and population depletion especially by uses of destructive modern fishing methods like SCUBA spearing. Another negative impact on these reef resources is the proliferation of the number of fishermen on the island from neighboring Pacific Islands and Asia. My testimony therefore is ban use of destructive SCUBA Spearing in designated coastal areas as may be approved by this proposed law. Should you need further clarifications, please do not heshgtate to contact me.Thank you for the opportunity to comment on this very important proposal to protect the vulnarable reef fish species.
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For over 35 years I have conducted underwater studies on the reef fish that inhabit WH reefs. In those early days, a SCUBA diver swimming in less than 30 feet of water could commonly see large white ulua swimming in reef caves searching for menpachi to eat. Mu would commonly sit in the water column over the reef waiting to see the movement of crabs on the bottom to eat. At night, it was common to see very large uhu sleeping in crevices and cracks of the reefs. Today, it is a rare occasion to see any of these large fish. The popularity of SCUBA has made it possible for people to spear these fish with relative impunity for commercial purposes, especially when fish like the uhu are sleeping on the reef at night. In my opinion, the state should prohibit thetaking of these fish by SCUBA divers because it is like 'shooting fish in a barrel' and has nearly eliminated from many reefs the large animals that are important for spawning.
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I have also spent many hours researching how the rest of the world addresses the issue of spearfishing using scuba. Many countries around the world have banned it, having experienced the devastating effect it has had on their fish populations. Whole fish populations have been destroyed by it. It is happening before our eyes here in Hawaii. Hawaii is one of only a few places on earth where this practice is still allowed. As the population of Hawaii grows the threats to our reefs from overfishing grow as well. Scuba spearfishing is a destructive and unnecessary practice and needs to be banned before it is too late. The evidence is out there for all who wish to see it. It will be our shame if we allow this practice to continue in spite of the evidence against it.
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I strongly support the ban on scuba spearing. When I dive I take maybe 15 pounds of fish for my home table. Many of those who testified at the public hearing take for commercial purposes. Taking 400-800 pounds is not pono to me. If it were still the 70's when only had a few guys taking that much, that is one thing, but today there are many more people using the resource,and the cumulative effect is greater. Many mentioned that they rotate where they go, that doesn't mean someone else, following their own rotation, won't pound the same area the following night. Again, the cumulative is great. I hope DAR can use some of the testimony to make rules that are pono, even to those who testified against these rules.
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The scuba/spear-fishermen were clearly trying (and succeeded) in getting traditional spear-fishermen to come to the meeting, be very loud and intimidate many others.

Isn't it true that scuba/spearfishing is already against the law in most Pacific countries? Is it

correct for DAR and DLNR to continue to allow scuba/spear-fishers to think that removing HUNDREDS of POUNDS of fish at a time from the reef is subsistence fishing? This is what many of them said. And, of course, using scuba/spear at night equals a slaughterhouse! There were one or two local guys who did say that it wasn't 'pono' to scuba/spear at night. And even some people who were there to complain about the total ban did say that a ban on night scuba/spear would be fair.

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The most offensive is spearing sleeping fishes at night. We all know that. Those of you that spear fish know the fishes that sleep at night. I kind of liken that as a defensive trainer of going into someone's bedroom and taking a shot at them without their eyes open. Okay. So that's my personal opinion. Those of you in the room know how good uhu is. Believe me, if you stuff it with Okinawan sweet potato, it's one of the best fish to eat. All of you who spear fish know the fish are pretty smart and they get a lot smarter after their cousins have been speared.

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So I enjoy fishing and I enjoy spearfishing. But I grew up in New Jersey before I moved here, and I saw what happened with no regulations on any kind of fishing. And the fish disappeared and there aren't many fish left. People go out fishing and there is not much left there.

I do support the West Hawaii Fishery Council proposals because they are necessary. Families may have fished here forever and supported themselves and feed themselves and others, but you can't keep doing that, especially on SCUBA. The fish don't stand a chance, even during the day. People spearfishing on SCUBA, the fish disappear.

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Among other things, Chapter 13-60.4 proposes to prohibit SCUBA spearfishing for the simple reason that it has already been demonstrated everywhere in the Pacific that the prohibition of SCUBA spearfishing is necessary, because this methodology leads to overfishing, overfishing that has had dire consequences for maintaining healthy fish populations. In addition, this problem is particular intensified when night fishing is involved it is at this time that the fish are most vulnerable. Relatively few numbers of SCUBA spearfishers can lead to rapid declines in local populations of particular species, which can have cascading deleterious effects that can travel up and down the food chain.

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I hate the thought of interfering with any fisherman's livelihood, but according to DLNR catch records the dollar amount of speared fish sold has fallen dramatically over the years. There's been an average of 16 commercial spearfishers over the last 5 years with an average total reported catch value of less than $26,000. It is unknown how much of that fish was speared on scuba and how much was speared breath holding.

All of Europe, Belize, Mexico, and all Pacific Island Nations except the Marshall islands have banned spearing on scuba. This has resulted in many fish populations making a big come back.

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I support the provision to prohibit SCUBA spearfishing as it provides an imbalanced advantage that has been shown in other regions of the Pacific to rapidly deplete fish populations (Page 1998). Technological advances that increase fishing efficiency including SCUBA have the potential to place added pressure on an already vulnerable resource. The refuges that fish previously had such as deeper waters and the shelter of darkness have been virtually eliminated and with it the ability for populations to recover from fishing pressure. Thus, this prohibition of SCUBA spearfishing within the WHRFMA will support the maintenance of reproductive stocks.

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I strongly support the banning of spearfishing on SCUBA, whether day or night. The practice has been found to be so destructive in island nations all around the Pacific, that many small and not very wealthy countries have decided to ban this fishing method. It is clear that any apparatus that allows a spearfisher to go deeper and stay longer than breathholding does affords the fish no refuge to escape the spear. Since many fish sleep at night, spearfishing at night can take many fish completely unawares. It's not sporting, it's not fair, and it's not ecologically sustainable.

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I lived here all my life and love the fish I see when i go swimming, but I believe that spear fishing on scuba is truly unfair and gives no chance for the fishes to escape. If this is all that happens the fish population can be decimated and there will be no more beautiful fish to see

I support the proposed rule (Chapter 13-60.4). I do not believe SCUBA spearing is a sustainable fishing practice. SCUBA spearing is partly to blame for our decline in reef fish species (especially uhu and menpachi). Please end SCUBA spearing.

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Spear fishing should not be allowed. No one should be able to spear fish in popular swim, snorkel and dive areas on the Big island and spear fishing should be severely limited by commercial companies. With so many tourists and locals enjoying Big island swimming areas, it is very disheartening to see the fish before your eyes being killed for sport and it is dangerous for swimmers to be in the same area as spear fishermen who are killing beautiful fish as well as adding to the destruction of the fish population.

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Spearfishing while using scuba has the potential to result in unacceptably high fishing mortality, particularly on sought after species, especially when it is done at night when diurnal fishes are quiescent and particularly vulnerable to predation. For this reason, this fishing technique has been banned outright in many regions. Hawaii should follow suit and ban it outright or, perhaps as a compromise, ban nocturnal scuba spearfishing and place strict bag limits on species that may be taken in daylight hours.
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I attended the meeting last night and it seemed like everyone was on the same page, besides a few fishermen who opposed the ban on scuba spearfishing. I do not have a PH D, but it seems like a no brainer, if most other countries have banned this and after a decade of Hawaii mulling this over, it is time we follow suit. I don't think the Hawaiian's grandfathers were out there in their scuba gear doing this….

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Prohibition of SCUBA/Rebreather spearfishing and/or possession of such gear with a spear or speared aquatic life – This provision seems like a 'no-brainer'. "Fishermen" should not be allowed to use SCUBA gear while spear-fishing. Spear-fishermen using SCUBA gear can effectively remove all the targeted fish in an area, because they are essentially unlimited by their air supply. This is especially true at night, when a fisherman outfitted with SCUBA gear could target fish that are sleeping and more vulnerable.

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The ban on SCUBA spearfishing is urgently needed to prevent severe over-harvest of targeted species. Experience in other locations has shown that this method of fishing is so effective (especially for species such as parrotfish which sleep in the open and are easily harvested) that even a small group of fisherman can rapidly deplete a fishery, to the detriment of the species, the reef, and the vast majority of users. I strongly support the ban on SCUBA spearfishing.

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Spearfishing on SCUBA, particularly at night when fish are extremely vulnerable, is banned in most other regions in the pacific because the potential for over exploitation using this fishing method is so high. There have been a number of examples (e.g., American Samoa) where relatively few fishers using this technology have lead to the rapid declines of local populations of species that are economically, culturally and ecologically valuable (e.g., parrotfish).

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The prohibition of SCUBA spearfishing would allow free-divers to practice their sport and provide food for their families while allowing most of the large fish to escape death, and therefore reproduce and provide fish for future spear fishermen. Most other areas of the world have already seen the wisdom of protecting marine life from over fishing on SCUBA. Please support this protective measure for our crustaceans and fish.

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In Southern California, I was a diver and spear fisherman for many years. During that time, I saw the decline in fish stocks, especially the slower growing and slower moving fish that are relatively easy to spear by divers with scuba. After I realized I was part of the problem, I traded my spear for a camera and hope that I am now part of the solution.

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the impacts of scuba diving and snorkeling on coral reefs is well-documented throughout the world – peer-reviewed studies in Egypt, Saint Lucia, Bonaire, the Cayman Islands, Eilat, the US Virgin Islands,
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the Galápagos, the Maldives, and the Great Barrier Reef of Australia were all shown to significantly decrease hard coral cover, while simultaneously increasing the amount of dead coral and coral rubble.
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The proposed prohibition on SCUBA spearfishing should be a “no-brainer.” Numerous scientific studies across the Pacific and around the world have shown that the significant advantage SCUBA gear provides to spearfishers allows them to be far too efficient, resulting in deleterious impacts on fish populations, particularly the larger breeders.
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…..the prohibition of SCUBA spearfishing is overdue in Hawai'i. It has long been banned in many jurisdictions. Because of the importance of the West Hawai'i reefs and their fish resources its implementation in the Management Area will be an important lesson in the effectiveness of this simple measure.
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The elimination of spearing using compressed gas is important to protect vulnerable species, especially at night. I saw the effects of unregulated spearing in American Samoa in 1997, where few adult fish were encountered and small ornamental fish were terrified by the sound of diver’s bubbles.
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As a trained observer of reef ecosystems I feel that every concept of the rule package is very much needed for the Kona coast. Scuba spearfish has been shown to be very destructive and has been banned in such places as Australia and American Samoa.
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SCUBA spearfishing is a highly immoral way to fish. Many fish, like the important indicator parrot fish, sleep at night. You can literally go up and poke them. Most the SCUBA spearfishing is done at night when so many fish are extremely vulnerable.
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I wholeheartedly endorse the intent of all of the new proposed provisions. Especially important is the provision (prohibiting SCUBA spearfishing within the WHRFMA). SCUBA spearfishing, particularly at night, is an entirely too effective and destructive technique to be allowed in the WHRFMA.
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I believe that using the advantages of SCUBA to spear fish is highly inappropriate. In fact, this practice has been banned in other areas of the Pacific where it resulted in over-exploitation and rapidly declining fish populations.

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Prohibition of SCUBA spearfishing is a necessary step to protect near shore food fish stocks because SCUBA fishing could rapidly over-fish current stocks. This measure has already been

taken in most other regions of the Pacific.
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The prohibition of spearfishing on SCUBA in particular is a long overdue regulation, as this practice has the potential to overexploit fish populations, and has been banned elsewhere in the Pacific for this reason.
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Our islands population has increased to the point that it is now important to manage our resources. Many other locations in the world, have already suffered with scuba and spearfishing, completely wiping out entire ecosystems.
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The prohibition of spearfishing on SCUBA in particular is a long overdue regulation, as this practice has the potential to over-exploit fish populations, and has been banned elsewhere in the Pacific for this reason.
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The prohibition of spearfishing on SCUBA in particular is a long overdue regulation, as this practice has the potential to overexploit fish populations, and has been banned elsewhere in the Pacific for this reason.
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Fishes should only be speared by free divers, NOT by SCUBA divers. South Pacific Islanders have, in many areas, prohibited this practice after hard lessons were learned, per Dr. Charles Birkeland.
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I strongly support banning spearfishing on scuba. It's against the law in a lot of countries now, and it should be illegal here, too.
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Prohibiting spearfishing with scuba is a small but important start toward restore some of the larger fish to our reef ecosystems.
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If SCUBA gear and spearfishing will be prohibited the aquatic life will live in their natural environment.
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Scientists, Marine Researchers and Resource Managers Testifying in Support of WHRFMA SCUBA spearfishing Ban

Dr.	Jim	Beets	Dept. Marine Science, UH Hilo
	Kathy	Billings	National Park Service
Dr.	Charles	Birkeland	Dept. Zoology, Mānoa Emeritus
Dr.	Bruce	Carlson	Georgia Aquarium
Dr.	Jeremy	Claisse	Dept. Biology, Occidental College
	Steven	Colbert	Dept. Marine Science, UH Hilo
MS.	John	Coney	University of Hawai'i, Hilo
	Stephen	Cotton	Pacific Cooperative Studies Unit, UH Mānoa
PhD Candidate	Courtney	Couch	Dept. Ecology & Environmental Biology, Cornell U
	Victoria	Cullins	Wild Dolphin Foundation
Dr.	Edward	DeMartini	Pacific Islands Fisheries Science Center, NOAA
MS.	Liz	Foote	Coral Reef Alliance
Dr.	Helen	Fox	Conservation Science Program, World Wildlife Fund
PhD Candidate	Jonatha	Giddens	Dept. Biology, UH Mānoa
Dr.	Craig	Glenn	Dept. Geology & Geophysics, UH Mānoa
MS.	Donna	Goodale	Hualalai Academy
Dr.	Leon	Hallacher	Dept. Biology, UH Hilo
Dr.	Drew	Harvell	Dept. Ecology & Environmental Biology, Cornell U
Dr.	Mark	Hixon	Dept. Biology, UH Mānoa
PhD Candidate	Christopher	Jury	Dept. Oceanography, UH Mānoa
Dr.	Robert	Kinzie	Dept. Zoology, Mānoa Emeritus
	Mike	Lameier	Pacific Islands Regional Office, NOAA
PhD Candidate	Lisa	Marrack	University of California, Berkeley
	Betsey	Morrigan	University of Hawai'i, Hilo
MS.	Rebecca	Most	Dept. Marine Sciences, UH Hilo
MS. Candidate	Emily	Munday	School of the Environment, Washington State University
MS.	Kara	Osada-D'Avella	Pacific Cooperative Studies Unit, UH Mānoa
MS.	Sara	Peck	UH SeaGrant Retired
MS.	Linda	Preskitt	Eyes of the Reef
Dr.	John	Randall	Ichthyologist Emeritus, Bishop Museum
Dr.	Moshe	Rappaport	West Hawai'i Community College
Dr.	Andrew	Rhyne	Dept. Marine Biology, Roger Williams University
Dr.	Marc	Rice	Hawai'i Preparatory Academy
Dr.	Ku'ulei	Rodgers	Hawai'i Institute of Marine Biology
	Richard	Ross	California Academy of Sciences
Dr.	Dale	Sarver	Marine Ecologist
Dr.	Robert	Shallenberger	Conservation Biologist
PhD Candidate	Kosta	Stamoulis	Dept. Biology, UH Mānoa
	Keoki	Stender	University of Hawai'i Mānoa
MS. Candidate	Yuko	Stender	Geography Dept. UH Mānoa

Dr.	Todd	Stevenson	School of the Environment, Washington State University
Dr.	Stephen	Thompson	Marine Environmental Research
Dr.	Brian	Tissot	School of the Environment, Washington State University
Dr.	Michael	Tlusty	New England Aquarium
Dr.	Robert	Toonen	Hawai'i Institute of Marine Biology
Dr.	Timothy	Tricas	Dept. Biology, UH Mānoa
	Chad	Wiggins	The Nature Conservancy
Dr.	Ivor	Williams	Coral Reef Ecosystem Division, NOAA
Dr.	Thierry	Work	US Geologic Service
	Marjorie	Ziegler	Conservation Council for Hawai'i

Testimony in Opposition to SCUBA Spearfishing Ban

With respect to the SCUBA spearfishing prohibition contained within the proposed rule package, OHA respectfully requests that some further consideration be given to those who have a bona fide need to utilize SCUBA gear to harvest marine resources for subsistence purposes. Such consideration may be made in the form of an expressly recognized affirmative defense to enforcement actions for bona fide subsistence practices, the imposition of subsistence-level marine life take and possession limits for those utilizing SCUBA gear and spears, and/or an optional permitting or registry structure that may recognize individuals' subsistence practices in advance, and outside of the criminal defense context.

OHA notes that much testimony has been submitted in regards to the possible impact of a blanket SCUBA-spearfishing prohibition on the subsistence practices of local families in the West Hawai'i region. OHA also notes that representatives from beneficiary communities in certain areas, such as Miloli 'i, have voiced contrasting concerns regarding SCUBA spearfishing, and spearfishing at night, as detrimental to their subsistence lifestyle and the resources they depend upon. OHA is aware that the regulation of SCUBA spearfishing and spearfishing at night, have been topics of discussion within the WHFC and West Hawai'i communities since as early as 2003, and commends the WHFC in their efforts to find a community-based consensus on this sensitive issue.

However, to the extent that harvesting resources using SCUBA gear and spears may be necessary for the present subsistence needs of certain individuals, OHA believes that a more narrowly-tailored approach may accommodate the needs of these individuals, while respecting the resource and practical enforceability measures that are reflected in the proposed prohibition.
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SCUBA divers tend to use the 60-ft to 100-ft depth area, an area not used by snorkel or free divers, therefore it spreads the fishing effort to a wider area. By banning SCUBA,

the divers will simply concentrate on areas where they can free dive, thus take more fish from shallower areas. Banning SCUBA gear for spearfishing will not reduce the total take of fish, it will simply move the harvest to different locations.
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Spearfishing is a very selective fishing method. Divers can pick species and size of what they harvest, therefore size and species bag limits should be used to manage this fishery rather than a total ban.

Before a management method is put into place, there should be scientific evidence, not hearsay and speculation on the amount, type, and impact of SCUBA spearfishing on popular spearfishing areas in West Hawaii. To my knowledge, the rationale on why a ban was proposed was based on speculation, not science.

If the amount of current harvest by SCUBA spearfishers is not known, there will be no

possible measure of success or failure of a management method utilizing a complete ban.

If SCUBA spearfishing is a problem to the nearshore ecosystem, then it should be looked at for the entire state, not just West Hawaii. The proposed ban in West Hawaii will create a hodge-podge of regulations.

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As many have said here very recently in their presentations, I don't think it's right to ban the taking of fish on SCUBA. I do agree that nighttime taking of fish on SCUBA, it shouldn't be done. And I've always kind of felt that the people that did that weren't very qualified to be out doing it. I mean if you're going to take fish, put some sport into it. It's pretty easy to shoot an uhu that's sleeping under a rock in the evening. As one gentleman just mentioned here recently, as we get older, our lung capacity is not what it used to be.

I don't want to see a ban on SCUBA spearfishing. If you want to modify the regulations, modify them in such a way that you can limit nighttime taking of fish on SCUBA, at least make it all right for recreational home consumption users to be able to take fish.

I don't know how many of you out there dive, but no, you can't go out to 30, 40, or 50 feet free diving and poke fish. It's real hard to do, and it's dangerous. I've had friends here in the islands that have died from shallow water blackout because they were trying to dive too deep and it doesn't work.

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I used to dive here on this side, on the west side, I used to shoot 700 to 800 pounds of uhu a night. And my conscious told me stop that, along with Junior Kanuha, so I learned to listen.

So to tell people that they can't go into the ocean and use a tank, that's intelligence, that's modern world just like we use our cell phones and our smart phones and our GPS, you're telling a people that because they want to use modern equipment to do something efficiently

and effectively and sustainably [sic] that they can't do it is wrong, completely wrong.
I dove the west side for years, and now I barely ever dive it. Why, because there is less fish, and I felt as though maybe I should dive down someplace where there is. I took a small ride in my boat on the west side from Kiholo Bay all the way down to Miloli'i, and there is a huge difference. There's mosses growing on the reefs that were never there before. I've been here 27 years, and I've seen things change.
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So when you look at other proposals like the SCUBA spearfishing. Current regulations on the book already state that there is bag limits, size limits that restrict fishermen in many ways, season of closures and everything else they testified to that said how fishing is restricted. This regulation makes something illegal more illegal. I mean if you are going to take 15 fish and that's your limit, that's your limit. Whether you put on a SCUBA tank and go and take 15 fish or you spear it without a SCUBA tank, all it does is makes it harder for a person to take their 15 fish so it's already a restriction in the books.

The possession issue of the SCUBA spear makes it difficult to enforce. It makes anybody who has a SCUBA and a spear on their boat automatically illegal. It's automatically a violation. It doesn't matter what you use it for if you didn't use it, and I think it's a really poorly written regulation if it's passed in such way.
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I am an old man with 1 lung and have been diving these island all my life. I am 70 now and this is the recreation I choose and cannot do it without a scuba tank. I go after tako and some kaukau fish from time to time and please do not pass this law. I agree the reefs are getting depleted but actually the night diving and the tropical fish collecting are the main reasons.

There is no way a responsible diver with a spear can wipe out a reef. The way they get wiped out is the divers that gas the holes and there is no policing of this practice here on the big island you folks do not have the boats or the man power to take care of this. I have seen bleached holes everywhere and even reported the persons involved with no satisfaction.
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The proposal to ban scuba and spear is dangerous and compromises the community's ability to gather food, threatens the livelihood of small businesses and the safety of food providers. The proposal to ban scuba-spearfishing is irresponsible and redundant. With bag and size limit regulations already established, there is no need to restrict gear type or method of fishing. All this does is make it unsafe and difficult for people to fish for food.

HNF use of scuba is essential in our operations.
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The use of scuba is essential for safety, essential for selectivity, essential to the way we operate.

HNF use scuba and spear in almost everything we do.

The use of scuba and spear is the nature of our gathering style. We have been sustainably gathering/harvesting in this manner for the last 50 years.

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If one group cannot use SCUBA because it has been shown to deplete the reefs of fish then this rule should be applied to all groups. Why is it proposed that aquarium fish collectors are allowed to remove fish from the reef using SCUBA yet local spearfisherman are not? I have looked over a lot of research and it does show that reefs tend to get overfished when populations start using SCUBA instead of traditional fishing methods.

Therefore the rule should be that no aquarium collection/spearfishing can be done with SCUBA (or SNUBA). This would allow the local spearfisherman to continue their traditional methods of spearfishing (free diving) which for centuries have been proven to be sustainable.

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I'd also like to say in getting the information on what science is available, and specifically I'm talking about the spearfishing ban but there may be other issues, and what science is available, but quite frankly on a spearfishing ban, I can say that there is very little.

I have a background in proposed Hawaii Administration Rules which was given to me, and I have a NOAA paper that was written in March 2012. Neither of them support with science the fact that there is a spearfishing SCUBA problem or that there should be a ban. The ban was, in fact, only one of seven proposals that were mentioned since the year 2001.

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In terms of banning spearfishing with SCUBA, the West Hawaii Fisheries Council has never put forth the ban before.
What I'm proposing for that measure is FRAs work for the tropical fish collectors, then set up something like that for the SCUBA spearfishing guys so that there is fish for the future. Maybe even look at the fact that before there used to be no commercial sale of speared fish. If you guys looking at uhus, put that on the no-sale list, but don't ban and stop local people from feeding their families.

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Spearfishing, by whatever means, is a highly selective method of fishing that is important to local people statewide, including those who cannot fish for themselves and must purchase their fish at the market. Hawaii is unique among most Pacific islands in its ability to monitor and regulate nearshore fisheries, and it ought to be possible to manage this fishery without prohibiting it entirely. At this stage, imposing a ban appears to imply a failure of community based management, which sets a dangerous precedent for the future of our marine resources statewide.

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the BIAAF, our association is against it, but only in the sense that a lot of the fishermen, aquarium collectors carry a spear for protection, and we also use it to move our fish.
There have been occasions when we've had to use it to defend ourselves under water. And if we can be given a supplement to something that would work just as well, we would be glad to take it, but so far there is nothing that has been presented to us so that's a concern that we have.
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We don't just go out there and terrorize fish at night. We have respect. By the time we go back to a spot that we've dove takes about a year, so we're not just a terror out there at night.
We're, actually, not the problem. Why don't you guys look at the roi or the tilapia. Those, actually, are the problem at night.

Come on, realistically, to be a night diver with tank, you got to be an elite diver, and that's what we are.
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So if we ban something like spearfishing with SCUBA, I know a lot of people who have been teaching their kids where to go, what kind of things to look for, how to find the fish, where the fish is. There is a hundred things involved. The knowledge doesn't fall out of the sky. You're trained. You do it over and over and over and over again until you master it. So I don't know how you can say we saving this for future generations.
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A lot of us Hawaiians depend on diving. Some of us are older now. We cannot hold our breath as long as possible like we used to. We depend on providing fish and food for our family members. We give other people food when we provide it for ourselves also.
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I am deadly opposed to the spearfishing ban. That's how we survive for hundreds of years, okay. Now, you guys only making bills that affect only us. That's why you guys don't give a shit about this bill because you guys don't eat reef fish, okay.
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I know braddahs in this room that manuahi, they catch and they give to the kupuna that cannot go. Some of them might be on SCUBA. So now, what, we're going to penalize them. I understand that, hey, this is the right thing, but it hasn't been vetted properly.
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Scientists, Marine Researchers and Resource Managers Testifying in Opposition of WHRFMA SCUBA spearfishing Ban

None