

SEA TURTLES AS A FLAGSHIP SPECIES: Different Perspectives Create Conflicts in the Pacific Islands

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ABSTRACT People living in the Pacific Islands have made great use of marine resources, with most production coming from the coastal zone. Recently however, various nations and territories in the Pacific Islands have increased their level of participation in high seas fishing, primarily pelagic longline fishing, to meet critical economic development needs. Longline fishing is one of many threats to sea turtles, however, under the guise of turtle conservation, some environmental non-government organisations are using marine turtles as a flagship species to constrain the development and expansion of longline fisheries. In the Atlantic Ocean, similar initiatives by certain non-government organisations used swordfish and marlin to restrict longline fishing, but these species are not overfished in the Pacific. As a result, the economic aspirations of the Pacific Islanders to develop longline fisheries are in conflict with those non-government organisations who wish to ban all longline fishing. Moreover, indigenous interest groups of people inhabiting United States Pacific territories have requested that they be allowed a limited harvest of green sea turtles to maintain cultural identity and promote conservation ethics. Consequently, some non-government organisations' objectives' are expected to conflict with the indigenous cultural rights of Pacific Islanders. This paper will discuss the complex, and sometimes contradictory, nature of the flagship concept, and how the current use of sea turtles as a flagship species is creating conflicts among stakeholders and actually inhibiting sea turtle conservation efforts in the Pacific Islands region.

Introduction

Flagship species are generally large, charismatic, and attractive species, which are also valued traditionally and culturally (Frazier 2003). Unlike keystone or indicator species, which may have pivotal roles in the way an ecosystem functions, a flagship species has strong social dimensions. Flagship species are often endangered or threatened, and the labeling of a species as a flagship can often engage communities and promote conservation, as has been the case for example for the flying fox (*Pteropus voeltzkowi*) in Tanzania (Bowen-Jones and Entwistle 2002). To promote effective conservation, Bowen-Jones and Entwistle (2002) conclude that a species must meet ten criteria for a flagship species,¹ and be used appropriately in context with local and cultural parameters.

This paper provides an analysis, from a fishery and Pacific Island-based point of view, of the tensions created by conflicting interpretations of the flagship concept and suggests that sea turtles are currently being misused as a flagship species by certain environmental NGOs. We examine three contrasting uses of the flagship concept:

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by certain non-government organisations (NGOs) working to halt longline fisheries, by Pacific Islanders striving for economic independence and cultural identity, and by fishery managers -- namely the Western Pacific Regional Fishery Management Council -- working to find a balance between stakeholders and maintain an environmentally responsible fishery. We illustrate that certain NGOs need to reconsider their advocacy of a complete ban on longlining and take into consideration the economic and cultural realities of people in the region. To be truly successful, they will need to build alliances with the people of the region -- not alienate them -- so that conservation measures for marine turtles are fully supported at the grassroots level.

Pelagic Longline Fishing and Sea Turtle Management

The Western Pacific Regional Fishery Management Council (WPRFMC or Council) is one of eight fishery councils in the United States (and one of three in the Pacific), established by the Magnuson Fishery Conservation and Management Act of 1976 to oversee the nation's fisheries in the 200 mile US Exclusive Economic Zone (EEZ). The WPRFMC oversees the EEZ waters around Hawaii, America Samoa, Guam, the Commonwealth of the Northern Mariana Islands (CNMI), Johnston Atoll, Wake, Palmyra, Jarvis, Midway Atoll, Howland and Baker Islands (an area as large as the land surface of the continental United States). The WPRFMC has managed fisheries for tuna and tuna-like species since 1986 through its Pelagic Fishery Management Plan (FMP). The Hawaii-based longline fishery operates under this FMP and comprises approximately a hundred boats. There is a second longline fishery in America Samoa with approximately sixty-five small boats, and there is growing interest in establishing longline fisheries in Guam and CNMI.²

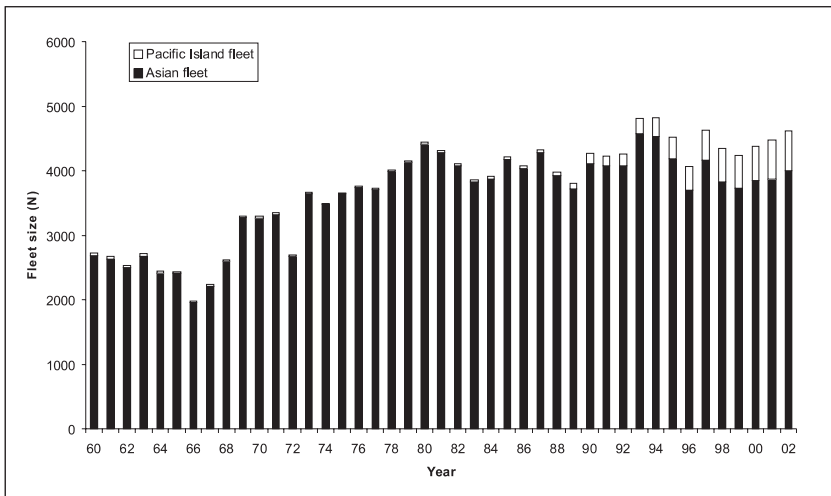


Figure 1. Annual estimates of longline fleet sizes in the Central and Western Pacific Ocean from 1960-2002. Asian fleet includes vessels from: China, South Korea, Japan, Taiwan, Philippines, and Indonesia. Pacific Island fleet includes vessels from: American Samoa, Australia (East Coast), New Zealand, Cook Islands, Federated States of Micronesia, Fiji, French Polynesia, Kiribati, Marshall Islands, New Caledonia, New Zealand, Papua New Guinea, Samoa, Solomon Islands, Tonga and Vanuatu (source: spc 2003).

Pelagic longline fishing to produce tuna for the high-quality, high-value market is a form of fishing that can be carried out by small to medium-sized fishing boats, is affordable in developing economies, and focuses on resources, which are being effectively and sustainably managed (Hampton *et al.* 2004a, 2004b; spc no date). Although it is not the largest in terms of catch volume, pelagic longlining has become one of the most economically important fisheries in the Pacific (Williams 2004). The combined total pelagic longline fleet in the Pacific has expanded continuously since the 1950's to meet consumer demand (principally from Japan) for high-quality pelagic fish, with the Japanese fleet driving longline expansion. The Taiwanese fleet emerged in the 1960's and 1970's, and the Korean, Chinese, and Vietnamese fleets have expanded since the 1990's (the Chinese fleet is still in its infancy, but has the capacity to expand substantially in the future). Hawaii, Australia, and other Pacific Island nations (such as Papua New Guinea, Fiji, Cook Islands, French Polynesia, and Western Samoa) contributed to longline expansion in the early 1990s, and American Samoa began longlining in 1996 (Figure 1). Fishing effort for longline fleets operating throughout the Pacific occurs predominantly in equatorial and subtropical waters (Figure 2). Of total pelagic longline effort in the Pacific, the Hawaii- and American Samoa-based fisheries managed by the Council are a very small percentage, totalling less than five per cent of the total number of hooks set each year (NMFS 2001).

The manner in which pelagic longlines are configured and deployed is not uniform. Longlines can be arranged in a series of shallow loops held in place by floats, with a few hooks between floats to target epipelagic species, such as blue shark (*Prionace glauca*), marlin (*Makaira* spp.), swordfish (*Xiphias gladius*), mahi-mahi (*Coryphaena hippurus*), and yellowfin tuna (*Thunnus albacarus*) (Figure 3). Longlines can also be configured in a series of deep loops with more hooks between

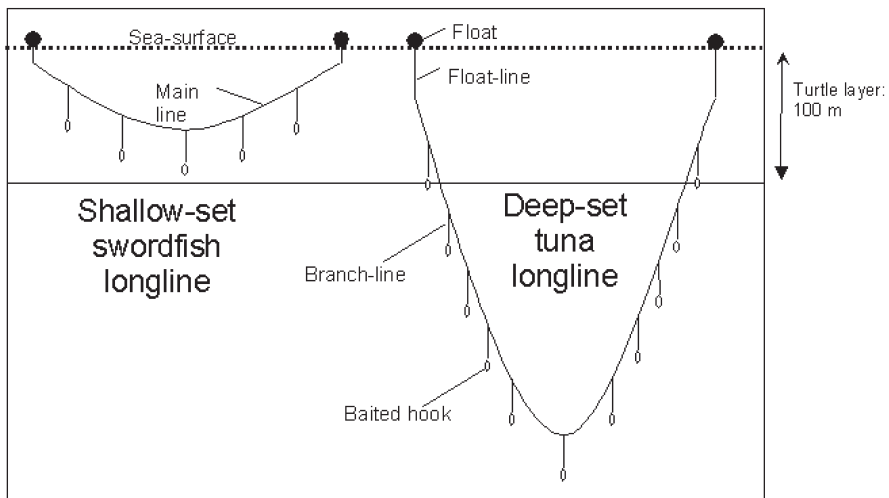


Figure 3. Configuration of shallow-set pelagic longline gear to target swordfish and deep-set pelagic longline gear to target tuna species. Note that hooks on shallow-set longlines lie within the depths most frequented by turtles (the Turtle Layer: 100 m), while hooks on deep-set longlines lie mainly below this critical depth (source: WPRFMC unpublished data).

floats to target tunas such as bigeye (*Thunnus obesus*) and albacore (*Thunnus alalunga*), which live and feed primarily in depths below the epipelagic zone (Figure 3). Epipelagic bycatch, including sea turtles and other species, such as marlins, tends to have a depth distribution with increasing frequency near the surface and decreasing frequency at progressively greater depths (SPREP 2001; Polovina *et al.* 2003; Watson *et al.* 2004). Hence, longlines set below the water layer, in which turtles are concentrated (Figure 3) tend to hook or entangle turtles far less frequently. Recent observations suggest that the depth profiles vary between different turtle species, with loggerhead turtles (*Caretta caretta*) spending most of their time between the surface and forty metres, while olive ridley (*Lepidochelys olivacea*) and leatherback turtles (*Dermochelys coriacea*) spend more time in deeper water, between the surface and 100m (Keinath and Musick 1993; Polovina *et al.* 2003).

The Council has been strongly proactive in managing and reducing protected species interactions in the Hawaii-based pelagic longline fishery.³ In 1991, two amendments were made to the FMP. The first (WPRFMC 1991a) introduced requirements for permits and logbooks for the Hawaii-based longline fleet, and included provisions for an observer programme, which was ultimately implemented in 1994 and was directed primarily to collect information on interactions with turtles. This was followed in the same year (WPRFMC 1991b) by the establishment of a fifty nautical miles (nm) closed area around the Northwestern Hawaiian Islands to minimise interactions with Hawaiian monk seals (*Monachus schauinslandi*), seabirds (primarily albatross, *Phoebastria* spp.) and green sea turtles (*Chelonia mydas*). In 1998, the Council and the National Marine Fisheries Service (NMFS) conducted research to identify measures to mitigate seabird interactions (Gilman *et al.* 2003). These experiments, conducted in partnership with the Hawaii Longline Association, have led to the development of mitigation measures that can be almost 100 per cent effective at avoiding seabird bycatch (Gilman *et al.* 2003).

While interactions with seabirds and marine mammals have been minimised, the longline fishery unfortunately continued to interact with leatherback, loggerhead, and olive ridley turtles. In response to litigation by certain NGOs in 1999, the Council and NMFS implemented significant changes to the management of the Hawaii-based longline industry to reduce sea turtle interactions (see WPRFMC 2003a for comprehensive information on these regulations). In summary, between 2001 and 2003, the fishery became an exclusively deep-set, tuna-targeting fishery with mandatory gear modifications, time/area closures (implemented during April and May from the equator to 15°N, and 145°W to 180°W), with twenty per cent fishery observer coverage for the fleet.

These implemented management measures have successfully reduced sea turtle interactions, nearly eliminating them for three of the four impacted species (Figure 4), but changes in fishery practices have had severe negative economic and social impacts on the fisheries sector, as well as on the Hawaiian economy in general. In 2000, approximately twenty-five boats (about a quarter of the total fleet) left the fishery, business revenue fell by approximately thirty-five per cent (or forty-five million US dollars), and 500 jobs were affected (NMFS 2001). These were significant losses to the State of Hawaii, as well as to vessel owners, operators, crew, vessel suppliers, and fish dealers.

The difference between turtle bycatch rates on deep versus shallow sets

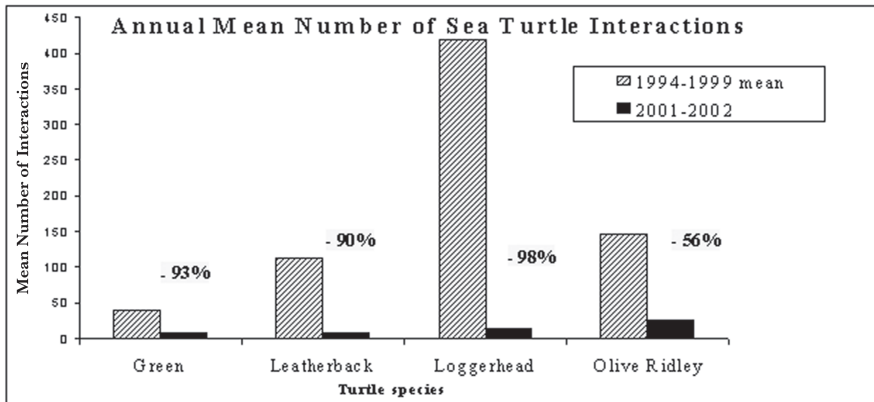


Figure 4. Annual mean number of sea turtle interactions during the periods 1994-1999 and 2001-2002 in the Hawaii-based longline fishery before and after implementation of sea turtle regulations in 2000 (source: WPRFMC unpublished data). Sea turtle regulations include: gear modifications, time/area closures, and fishery redesign from shallow-set (to target swordfish) to deep-set (to target tunas).

has been known for several years (Polovina *et al.* 2000), as has information on the depth preferences and diving profiles for turtles (Eckert *et al.* 1989; Keinath and Musick 1993; Lutcavage and Lutz 1997). However, studies on ways to reduce interactions between turtles and baited hooks are more recent (Bolten and Bjørndal 2002; Polovina *et al.* 2003; Watson *et al.* 2004). Studies conducted in the Atlantic between 2002 and 2004 demonstrated the efficacy of large (18/0) circle hooks and mackerel bait to minimise interactions between shallow-set longlines and loggerhead and leatherback turtles (Bolten and Bjørndal 2002; Watson *et al.* 2004). Results from these studies (and other analyses) were used to reopen the Hawaii-based swordfish fishery in 2004 (WPRFMC 2004b) by requiring vessels to use large 18/0 circle hooks and mackerel-type bait. Moreover, as additional safeguards, fishery effort was capped at fifty per cent of the historical average, and observer coverage was raised to a hundred per cent for swordfish vessels (see WPRFMC 2004b for complete information, analyses, and current regulations). However, lawsuits continue to be filed by certain NGOs, which restrict the ability of agencies, such as the National Marine Fisheries Service to conduct experiments to develop additional 'turtle safe' longlining measures, and engage foreign longline fleets in these experiments to transfer gear technologies. In contrast, measures to reduce bycatch of seabirds⁴ are currently being shared and transferred to Japan through cooperative research experiments (Gilman *et al.* 2003).

Current Uses of the Flagship Concept in the Pacific Islands

Flagship Species Used to Lobby for Fishery Closures

Over the last fifty years there has been increasing use of charismatic megafauna as flagship species to raise funds and promote the ethos of conservation by NGOs (Bowen-Jones and Entwistle 2002). Species are chosen to appeal to donor and membership groups, however, in the Pacific these tactics have proven unpopular among

local island communities and fishery resource managers.

Several domestic NGOs have mounted campaigns against the longline industry in both the Atlantic and Pacific Oceans. The Atlantic initiatives used declining population status of swordfish and marlin as flagship species to curtail longline fishing; for example, 'Give Swordfish a Break'⁵ (Hallowell 1998) and 'No Marlin on the Menu'⁶ (Billfish Foundation 2003) campaigns. Efforts have since migrated to the Pacific Ocean with the 'Mercury-tainted Fish'⁷ campaign (Sea Turtle Restoration Network 2001; WPRFMC 2003b).

However, this strategy does not work in the Pacific as these species are not under threat (that is, overfished) in the Pacific Ocean (Kleiber *et al.* 2001; ISC 2004). In the Pacific, sea turtles have become the flagship species in attempts to constrain longline fisheries and halt collaborative and international fishery experiments that might ultimately develop and promote highly effective 'turtle safe' technology. In effect, sea turtles are the flagship species for litigation. The most active of these NGOs is the Sea Turtle Restoration Network, which instigated a petition for an ocean-wide Longline Moratorium based on sea turtle bycatch issues (Asilomar Resolution 2002). This same NGO continues to be engaged in litigation to close US Pacific longline fisheries, halt longline-sea turtle mitigation experiments, and compel restaurants and supermarkets to publicly display literature warning of [unsubstantiated] dangers of pelagic fish due to mercury content (FDA 1994; AAAS 2003; WPRFMC 2003b).

Certain NGOs can target highly regulated US-based fisheries through litigation, or seek to impose foreign import restrictions for pelagic fish, similar to those for trawl-caught shrimp (for example, the mandatory use of Turtle Excluder Devices⁸), but are generally ineffective in influencing the behavior of foreign fleets. As noted earlier, the American Samoa and Hawaii-based longline fisheries together represent about five per cent of the total fleet effort in the Western/Central Pacific region (NMFS 2001, Figure 1). If the US fleets cease, longline fishing by foreign fleets will continue with little change in fishing effort.

In other words, banning domestic pelagic longlining will not eliminate longline fishing from the oceans, nor will it promote sea turtle population recovery since longline fishing is just one of many sources of mortality (see Lutcavage *et al.* 1997 and Campbell 2003 for summaries of anthropogenic threats and historical uses of sea turtles). In general however, threats to marine turtles include: habitat degradation (at nesting beaches and foraging grounds); poaching and direct harvest of eggs and/or adults; boat strikes; dredging; oil pollution; entanglement; ingestion of plastics (or other nonbiodegradable materials); and incidental capture in fisheries (trawl, longline, coastal and pelagic gillnets). The Bellagio Blueprint for action explicitly states that protecting nesting beaches is key, and the first step to sea turtle population recovery in the Pacific⁹ (WorldFish Center 2004). Both the Bellagio action plan and the FAO Expert Consultation on Fisheries (2004) also state that coastal fishery related hazards (from gillnet, trawl, set-net, and trap), as well as high seas impacts need to be mitigated to recover depleted populations. Therefore, closing domestic longline fisheries will not automatically remove all major threats to marine turtles. To the contrary, it is likely to make it more difficult to develop and implement adequate measures to mitigate or reduce bycatch in the global longline industry.

For example, when the Hawaii swordfish fishery closed there was an influx into the US of lower priced, imported swordfish from unregulated foreign fisheries

(Sarmiento 2004). The demand for swordfish was met by less regulated fisheries, which have an impact on protected species at an order of magnitude greater than the Hawaii-based fleet (Bartram and Kaneko 2004). Moreover, foreign fleets (primarily Taiwanese vessels) are known to have moved into the same high seas swordfish grounds vacated by the Hawaii fleet, and thus the waters did not remain un-fished and sea turtle interactions are believed to have persisted (Bartram and Kaneko 2004). In addition, information from the us fleet's onboard observers ceased, and there was no compensatory increase in information from the active fleets, so there was little information on what effects these foreign fleets were having on turtle populations. Indeed, as a generality in the fishing community, when a ban or closure is implemented the usual response is to increase secrecy and decrease collaboration -- just the opposite of what is needed to resolve wide-ranging problems, such as fisheries bycatch.

Flagship Species for Pacific Islanders

While generalities for cultural aspects over a geographic area as vast as the Pacific Islands can lead to misconceptions, it is worthwhile to note that Pacific Islanders, including those residing in Hawaii, American Samoa, Guam, and CNMI, utilise and have a strong cultural relationship with their marine resources, including sea turtles (Johannes 1978; McCoy 1982; Campbell 2003; Frazier 2003). Turtles are an intrinsic part of the culture, subsistence, traditions, and folklore of the region (Balazs 1982; McCoy 1982; Campbell 2003). Traditionally, they are known to have played an important role in religious ceremonies, and perpetuated community relationships and identities through the exchange of turtle meat and turtle products (Johannes 1978, 1981; Balazs 1982; McCoy 1982, 1997). McCoy (1982:279) concluded 'that turtles contribute significantly to the overall cultural stability of the people [in the Marshall Islands]' and that 'their contribution in protein is not nearly as important as their cultural role'. However, the indigenous people residing in the us and us Pacific territories (Hawaii, Guam, America Samoa, and CNMI) lost their cultural rights to harvest turtles when the us Endangered Species Act rendered harvest illegal. They have since requested an allowable cultural harvest of turtles, green sea turtles specifically, to perpetuate and strengthen cultural identity¹⁰ (McCoy 1997; Hara 2002; Ilo 2002). In this regard, sustainable use may allow turtles to assume a flagship role for indigenous Pacific islanders to promote cultural integrity (McCoy 1982, 1997; Hara 2002), and may further convey resource conservation ethics to younger generations (Johannes 1978; Morauta, Pernetta, and Heaney 1982; Spring 1982; McCoy 1997; Poepoe, Bartram, and Friedlander in press).

Although this concept may be controversial, islanders believe that strengthening cultural practices will revive traditional authority, resulting in limited harvest and increased protection of nesting beaches (Spring 1982; Ilo 2002); as has already proven to be the trend in certain Pacific Island nations, such as Fiji (SPC no date) and Vanuatu (Petro 2002). It is the belief of elders in Papua New Guinea that, '[by] following old traditions, turtles will still be plentiful' (Spring 1982:295). Furthermore, socio-cultural studies conducted in CNMI by McCoy (1997) suggest that the continuation and regeneration of cultural practice could allow limited use, yet provide more effective conservation measures than laws imposed from afar.

This paper does not intend to provide an exhaustive review of the cultural

traditions, uses or perspectives of sea turtles to native Pacific Islanders. Nor is it the place to argue the nuances of the terms 'traditional' or 'cultural'. It is our contention however, that sea turtles are ingrained in the cultural heritage of the region. Turtles played a significant role in traditional management systems, and conservation ethics, values, and attitudes were perpetuated as a result of the rules, rituals, and legends associated with turtle harvest (McCoy 2004).

Hawaiian protocol is built on a foundation of responsibilities that link people with their environment, and stress that 'cultural survival is entwined with sustainable resource use' (Poepoe, Bartram, and Friedlander in press:8). The most important responsibilities are: 1) concern about the well being of future generations (meet present food needs without compromising the ability of future generations to meet their needs), and 2) self-restraint (take only what one needs, use what one takes carefully and fully without wasting) (Poepoe, Bartram, and Friedlander in press:12). SPC¹¹ (no date:6) suggests that '[t]he role of communities in turtle conservation hinges on their customs and traditional fishing practices.' This is supported by past studies by Johannes (1978) who documented traditional turtle management strategies through bans on taking nesting turtles and/or eggs, bans on disturbing turtle nesting habitat, and bans on consuming turtles (in addition to other strategies employed to manage fish species). These bans were a form of traditional management -- that provided a buffer on the number of turtles harvested -- based on *kapu* [rules] or 'taboo' system where by only certain members of the community (chiefs, priests, or only men) were permitted to eat turtles,¹² (McCoy 1982, 2004; Valerio 1985; O'Meara 1990); turtles were harvested for specific circumstances (weddings, funerals, religious ceremony, fiestas, the building of a canoe, et cetera) (Balazs 1982; Spring 1982; McCoy 1997, 2004); and some hunts were undertaken ceremoniously (McCoy 1982, 2004; Spring 1982; Ilo 2002). Furthermore, the existence of turtle shell money used as a possible exchanged medium points to its value and possible scarcity in the region (McCoy 1997).

McCoy (2004:39) provides a detailed account of an opening ceremony by the chief for the gathering of eggs and turtles in the Marshall Islands (first described by Tobin 1952). The ceremony includes chants, sacred offerings and rituals. The analysis of this ceremony gives insight into its practical means: '[r]ather than allow people to swarm all over the island, the *iroij* (chiefs) and senior people led the way and the food gathering proceeded in an organised, methodical fashion.' In the CNMI, certain food taboos and customs related to distribution of both live turtles and turtle meat played a role in limiting consumption and as a result may have lessened exploitation (McCoy 2004:39). For example, every turtle caught was brought to the chief, and both the head and best pieces belonged to the chief.

Woodrom-Luna (2003) provides a summary of numerous examples of *tapu* (traditional laws) employed throughout the Pacific Island region to manage turtle resources. For example, the natives of Tobi and Sonsorol (Palau) instituted *tapu* on eating turtle eggs and even placed fences around nests for their protection. *Tapus* were placed on taking eggs in Vanuatu and Western Samoa, and a Samoan chief is known to have placed *tapu* on a nesting beach. In Kiribati, it was *tapu* to harvest turtles on the beach, and the Enewetak Islanders (Marshall Islands) made several uninhabited islands into turtle reserves by forbidding the taking of turtle from those locations. In Tikopia (Solomon Islands), turtles were *tapu* to all but the people

who claim it as their totem. In the Cook Islands, it was *tapu* for all but old men to eat turtle. In Fiji turtles were a great delicacy, eaten only at important feasts and then only by high-ranking persons. These are just a few of many examples from the region, most of which are entrenched in folklore, and support the notion that there is a cultural precedent for the use of sea turtles as a flagship species for traditional management and conservation.

The use of the flagship concept to revive traditional authority of the *kapu* or taboo system by means of a cultural harvest in hopes to promote conservation ethics may (or may not) be realistic. Yet, it is unclear how effective these traditional resource management schemes were in the past (Frazier 2004), and there is incomplete understanding of how they would function in today's market economy, or how they would function among young generations influenced by Western culture (Spring 1982); nor is it clear if including turtles in cultural events would lead to patterns of behavior for responsible and sustainable interactions. McCoy (1982:275) acknowledges that 'the erosion of traditional taboos and the preference for modern boats over canoes have led to the disappearance of the protective buffer these customs once provided.' Yet, banning harvest altogether drives exploitation underground,¹³ which is ultimately detrimental to turtles and thwarts efforts for sustainable management (McCoy 2004).

The Bellagio Blueprint for Action on Pacific Sea Turtles (WorldFish Center 2004) recognises that harvest of turtles and/or eggs by local island communities is the fourth critical point to be addressed to recover turtles (see endnote 9). The authors, and others (McCoy 1997, 2004; Ilo 2002), contend that the costs of a limited harvest would be outweighed by the educational value. In other words, a limited and controlled cultural harvest would result in heightened awareness of the stock (biology, life history, threats, and status) and past cultural significance, which would contribute to an adaptive management approach and teach young generations the lessons and traditions revered by their ancestors (McCoy 2004). Undoubtedly, such efforts would also need to be supported by a tremendous amount of education and awareness initiatives (McCoy 1997). McCoy (1997) also suggests that a 'ceremonial' harvest (that is, turtle captured and then released) may accomplish these same objectives, such as that which has been accomplished in Taiwan (Balazs *et al.* 2000). However, depending on one's perspective, this flagship concept for cultural revival continues to create unresolved conflicts among numerous stakeholders (including the public, federal agencies, courts, native-rights groups and NGOs) in Hawaii and the Pacific territories (McCoy 1997; Hara 2002).

Conflicting Perspectives have Contradictory Results

Sea turtles meet the ten criteria of a flagship species (Bowen-Jones and Entwistle 2002).¹⁴ Yet, just as Bowen-Jones and Entwistle (2002) point out, if the flagship concept is used out of context, or does not take into account the cultural importance of the species to the local community, then conservation efforts become counter-productive. This has been the case in the Pacific Islands.

Although longline fishing is broadening the narrow economic base and giving local communities of the US Pacific territories access to economic opportuni-

ties and development, these aspirations are in conflict with those NGOs who want to ban all longline fishing and are using sea turtles as the flagship to achieve these means. Pacific Island fishers are willing to go to some lengths to utilise turtle mitigation measures in efforts to conform to best environmental practices (IFF2 2003; SPC no date), however, the reality is that the global public has become extremely critical of longline fishers due in large part by the media campaigns of certain NGOs. Unfortunately, if longline operators perceive that there is no hope of being believed (of being environmentally responsible) then they are less likely to spend money on mitigation and avoidance measures, allow monitoring, or may concentrate on less lucrative markets (SPC no date).

Indigenous interest groups are advisory bodies to, and integrated within, the Council's fishery management process. They persistently remind us that traditional systems, which perpetuate and strengthen cultural identity, are as much a necessity to Pacific Islanders as is the need to develop economic autonomy. SPC (no date:6) recognises that '[t]here has been considerable success in recent years in several island communities where cultural strengthening has gone hand-in-hand with conservative resource management.' Given that turtles are part of the traditional diet and culture of island communities throughout the Central and Western Pacific, efforts must be taken to ensure that traditional uses are sustainable (WorldFish Center 2004). Understandably, the request for cultural use of green sea turtles will require extensive research to identify what constitutes sustainable harvest. Although this appeal has yet to be formally considered, the request alone sparks considerable conflict in the Pacific Islands between native-rights interest groups and those opposed to any form of turtle harvest (Hara 2002). Cultural rights, sea turtle traditional harvest, and the use of turtles as a flagship for conservation are obviously separate issues from the region's developing longline industry. However, balancing economic growth (that is, fishery development) with the need to perpetuate traditional culture, as well as the means to achieve these goals remains a major issue in the region.

From the perspective of turtle conservation, litigation, and subsequent fishery closures have had contradictory results. Using sea turtles as a flagship species for litigation has raised industry awareness, reduced interactions with sea turtles, and increased federal funds to minimise interactions -- which are significant achievements. On the other hand, NGOs pursuing litigation have failed to resolve bycatch issues in the much larger foreign longline fleets of the Pacific (estimated to range between 5,000-6,000 vessels, based on figures in SPC (2003) and from R. Allen, Inter-American Tropical Tuna Commission, personal communication).

The conflicts that have arisen for the US fishery have given foreign fleets reason to be apprehensive about sharing bycatch data in fear of reprisals -- namely embargos or fishery closures. Moreover, the US fleets carry observers and are one of the few sources of credible information on the impacts of the fishery. Eliminating this fishery would eliminate a unique source of valuable information needed to monitor and manage these activities. But most importantly, constraining domestic fisheries seriously restricts the ability of fishery managers and US delegations from the State Department to lobby at international meetings and engage foreign countries in discussions to mitigate bycatch or elicit their active collaboration in fishing gear experiments. Such communication and collaboration is necessary for the successful transfer of mitigation measures -- possibly one of the greatest strengths that

us longline fisheries have to promote turtle conservation and reduce interactions in the pelagic environment.

Consequently, using turtles as flagship species to motivate the closure of us-based fisheries has not, and will not benefit sea turtles (Dalzell 2000). Instead, it prevents federal funding from being used to conduct essential fishery mitigation research or applied to conservation programmes, and squanders additional federal funds in the courts to defend the National Marine Fisheries Service against this litigation (Dalzell 2000). Under the banner of sea turtle conservation, NGO litigation-based efforts may benefit lawyers, but it does little to actually conserve Pacific turtles.

The experience of the Pacific Islands has shown that the flagship concept is a strong motivator, yet it has created significant conflicts within the region among key stakeholders. Sea turtles are an excellent flagship species, if the goal is truly to conserve the species and their habitats. However, using sea turtles as a flagship species for litigation to close us-based fisheries is counterproductive to fishery management efforts, and consequently inhibits the very conservation it is meant to promote. As long as global consumer demand for fishery products persists -- not to mention the financial and political interests inherent in the massive investments that have been made in the world's longline fleets -- a world-wide longline moratorium is not economically feasible. In light of the current climate of an expanding international longline fleet, the challenge is to find a way to unite the industry to identify and implement cost-effective solutions. It will take a variety of international stakeholders including NGOs, resource managers, and Pacific Islanders working together to address current recovery objectives, such as protecting nesting beaches and reducing fishery interactions (WorldFish Center 2004). Yet, it is our hope that some level of balance be achieved with all NGOs sensitive to the economic and cultural realities of Pacific Islanders, and a fishing industry which operates without lawsuit-driven restrictions but on scientifically-based management plans and culturally-sensitive collaboration.

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Notes

¹The ten criteria listed by Bowen-Jones and Entwistle (2002) for a species to be an effective flagship species for conservation are: 1) geographical status; 2) conservation status; 3) ecological role; 4) recognition; 5) existing usage; 6) charisma; 7) cultural significance; 8) positive association; 9) traditional knowledge; and 10) common names.

²Trials with a pelagic longline vessel by the Guam Fishermen's Cooperative have been funded by the WPRFMC's Community Development Project Programme. One vessel operator in CNMI applied for a longline permit in 2002 but has so far not made any landings (WPRFMC 2004a).

³The term interaction is used to imply that a protected species has come into contact with fishing gear, either entangled or hooked. It does not necessarily mean mortality. In many cases, entangled and/or hooked species can have gear successfully removed with little to no damage to the animal.

⁴These include deterrent measures such as side-setting in conjunction with a 'bird curtain', underwater setting chutes, and blue-dyed bait.

⁵Conservation groups [Natural Resources Defense Council and SeaWeb] hope to make the swordfish a symbol for all marine creatures threatened by overfishing' (Hallowell 1998: 62).

⁶The Billfish Foundation has designed the *No Marlin on the Menu* campaign to eliminate the sale of marlin and sailfish by restaurants, markets, and food distributors. TBF has made this campaign a top priority' (<http://www.billfish.org/dir/advocacy/positions/>).

⁷The *Mercury-tainted Fish* campaign is possibly the most pervasive, emerging in the courts via lawsuits, in restaurants and generating public safety concerns, for example, '[t]he increase in swordfishing in the Pacific has lead to a double crisis: the poisoning of pregnant women and the killing of endangered sea turtles' (Sea Turtle Restoration Network, press release 2002).

⁸Turtle Excluder Devices were developed by NMFS in 1978 and are installed in shrimp trawl nets to reduce bycatch by allowing turtles to escape through an escape hole. TEDs have been required by law to be used in US trawl fisheries since 1989, and were mandated in 1993 (Public Law 101-162, Section 609) -- instigated by a fishery embargo -- to be used by Latin American countries importing shrimp to the US (Weber *et al.* 1995). To date, there are still conflicting perspectives regarding the success of the law, the actual use (and/or misuse) of TEDs, and the certification process (see Arauz 2000).

⁹The Bellagio Blueprint for Action calls for: 1) the protection of all nesting beaches; 2) reducing turtle takes in at-sea and coastal fisheries; 3) stimulating Pan-Pacific policy actions; and 4) encouraging the sustainability of the traditional use of sea turtles.

¹⁰Currently this request is strongest among the Carolinian and Chamorro populations in CNMI and among native Hawaiians who wish to use a limited number of turtles in traditional religious ceremonies.

¹¹SPC [Secretariat of the Pacific Community] is a Pacific Island regional organisation, set up 56 years ago with general advisory, sustainable development and representational responsibilities in various fields [including fisheries] -- fields that benefit from a regional approach involving the small island states and territories of the Pacific.

¹²In Hawaii, turtles were *kapu* and reserved for chiefs under penalty of death (Valerio 1985). In Samoa, '[a]nytime a fisherman catches a turtle, the sacred fish of Polynesia, it must be taken directly to the Asiata's [chief's] house' (O'Meara 1990).

¹³McCoy (1997) notes that poaching continues to be a serious problem in the CNMI, even though people are all well aware of the illegality of their actions.

¹⁴The ten criteria for a flagship species, a Hawaiian perspective as example, are: 1) geographical status: *Pacific Islands*; 2) conservation status: *threatened*; 3) ecological role: *herbivore*; 4) recognition: *distinctive and easily recognized*; 5) existing usage: *cultural use sought, ecotourism*; 6) charisma: *emphatically charismatic*; 7) cultural significance: *important and pervasive*; 8) positive association: *positive cultural and local associations*; 9) traditional knowledge: *high*; and 10) common names: *honu (green turtle), hone 'ea (hawksbill turtle)*.

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