

## Questions on Notice #2 – Ben Diggles - References related to selective fishing

The following list is not exhaustive, but it is a summary of the key papers I have reviewed and cited in various reports over the last several years in relation to selective fishing, including catch and release fishing, and how this occurs in several jurisdictions overseas in national parks and marine parks that are categorized as ICUN II (National Park: Protected area managed mainly for ecosystem protection and recreation). Recreational fishing techniques utilise hook and line and pot fishing almost exclusively, which has minimal impact on habitat.

An example of sophisticated ecological management involving fishing is a form of co-management employed in the worlds oldest national park, namely Yellowstone National Park in the USA. Yellowstone was first established in 1872, and today the park meets ICUN Category II. [http://www.unep-wcmc.org/protected\\_areas/categories/eng/ex-ii.pdf](http://www.unep-wcmc.org/protected_areas/categories/eng/ex-ii.pdf) The notable point about Yellowstone is the fact that it boasts a vibrant and healthy recreational sportfishery, which has existed for nearly 140 years since the parks inception. According to the official Yellowstone National Park website, “*Fishing has been a major visitor activity (in the park) for well over a century. Because of this history, fishing continues to be allowed and can complement, and in some cases even enhance, the park’s primary purpose to preserve natural environments and native species*”. <http://www.nps.gov/yell/planyourvisit/fishing.htm> The enhancement component of this relationship stems from the prominent role recreational anglers play in habitat restoration, research and conservation of threatened species and management of exotic pest species in the park. [http://www.nps.gov/yell/naturescience/fishing\\_ecology.htm](http://www.nps.gov/yell/naturescience/fishing_ecology.htm)

Another example is the existence of a catch and release bonefish fishery in the Palmyra Atoll National Wildlife Refuge (Friedlander et al. (2008). Biology and ecology of the recreational bonefish fishery at Palmyra Atoll National Wildlife refuge with comparisons to other Pacific Islands. In. Ault JS (ed). *Biology and Management of the world Tarpon and Bonefish Fisheries*. pg 27-56, CRC press.)

A good summary of issues relating to commercial fishing gear can be found in a document funded by the European Commission entitled “Reducing the Footprint, moving towards low impact fisheries”, which outlines the types of impact on habitat and bycatch that each different commercial gear type (trawl vs longline vs dredge vs gill net vs seine etc) for pelagic (surface) and demersal (bottom) fisheries, emphasizes that decision makers can choose to grant preferential access to fisheries resources to low impact fisheries that use appropriate fishing gear. See this document at the EU website:

[http://assets.ocean2012.eu/publication\\_documents/documents/17/original/Reducing\\_the\\_Footprint\\_Moving\\_towards\\_Low\\_Impact\\_Fisheries.pdf](http://assets.ocean2012.eu/publication_documents/documents/17/original/Reducing_the_Footprint_Moving_towards_Low_Impact_Fisheries.pdf)

Other key studies relating to selective fishing applicable to MPAs

Reference		
<p>New York Times (2011). Fish hooks designed to avoid the wrong catch.  <a href="http://www.nytimes.com/2011/05/08/business/08-novel.html?_r=2">http://www.nytimes.com/2011/05/08/business/08-novel.html?_r=2</a></p>	<p>Cooke SJ, Suski CD (2004). Are circle hooks an effective tool for conserving marine and freshwater recreational catch-and-release fisheries? <i>Aquatic Conserv: Mar. Freshw. Ecosyst.</i> 14: 299–326</p>	<p>NSW DPI Robbins and Peddemors (2011). Investigating the behavioural response of Grey Nurse sharks to recreational lures and baited lines.  <a href="http://www.dpi.nsw.gov.au/research/areas/systems-research/wild-fisheries/outputs/2011/grey-nurse-update">http://www.dpi.nsw.gov.au/research/areas/systems-research/wild-fisheries/outputs/2011/grey-nurse-update</a></p>
<p>Cinner JE, McClanahan TR, Graham NA, Pratchett MS, Wilson SK, Raina JB (2009). Gear-based fisheries management as a potential adaptive response to climate change and coral mortality. <i>Journal of Applied Ecology</i> 46: 724-732</p>	<p>Bartlett CY, Pakoa K, Manua C (2009a). Marine Reserve phenomenon in the Pacific Islands. <i>Marine Policy</i> 33: 673-678.</p>	<p>Bartlett CY, Manua C, Cinner J, Sutton S, Jimmy R, Douth R, Nilsson J, Raina J (2009b). Comparison of outcomes of permanently closed and periodically harvested coral reef reserves. <i>Conservation Biology</i> 23: 1475-1484</p>
<p>Bartlett CY, Pakoa K, Manua C (2009a). Marine Reserve phenomenon in the Pacific Islands. <i>Marine Policy</i> 33: 673-678.</p>	<p>Bartlett CY, Manua C, Cinner J, Sutton S, Jimmy R, Douth R, Nilsson J, Raina J (2009b). Comparison of outcomes of permanently closed and periodically harvested coral reef reserves. <i>Conservation Biology</i> 23: 1475-1484.</p>	<p>Guidetti P, Claudet J (2010). Co-management practices enhance fisheries in marine protected areas. <i>Conservation Biology</i> 24: 312-318.</p>
<p>Bartlett CY, Manua C, Cinner J, Sutton S, Jimmy R, Douth R, Nilsson J, Raina J (2009b). Comparison of outcomes of permanently closed and periodically harvested coral reef reserves. <i>Conservation Biology</i> 23: 1475-1484.</p>	<p>Guidetti P, Claudet J (2010). Co-management practices enhance fisheries in marine protected areas. <i>Conservation Biology</i> 24: 312-318</p>	<p>McClanahan TR et al. (2006). A comparison of Marine Protected Areas and alternative approaches to coral reef management. <i>Current Biology</i> 16: 1408-1413.</p>
<p>Guidetti P, Claudet J (2010). Co-management practices enhance fisheries in marine protected areas. <i>Conservation Biology</i> 24: 312-318.</p>	<p>McClanahan TR et al. (2006). A comparison of Marine Protected Areas and alternative approaches to coral reef management. <i>Current Biology</i> 16: 1408-1413.</p>	<p>McClanahan TR (2010). Effects of Fisheries Closures and Gear Restrictions on Fishing Income in a Kenyan Coral Reef. <i>Conservation Biology</i> DOI 0.1111/j.1523-1739.2010.01530.x</p>
<p>McClanahan TR et al. (2006). A comparison of Marine Protected Areas and alternative</p>	<p>McClanahan TR (2010). Effects of Fisheries Closures and Gear Restrictions on Fishing Income in a Kenyan Coral Reef. <i>Conservation</i></p>	<p>Diggles, B. K. and Ernst, I. (1997). Hooking mortality of two species of shallow water reef</p>

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approaches to coral reef management. <i>Current Biology</i> 16: 1408-1413.	Biology DOI 0.1111/j.1523-1739.2010.01530.x	fish caught by recreational angling methods. <i>Marine and Freshwater Research</i> 48: 479-483.
Wilde, G, Pope, K, Durham BW (2003). Lure-size restrictions in recreational fisheries. <i>Fisheries</i> 28(6):18-26	Muoneke, M. I., and W. M. Childress. 1994. Hooking mortality: a review for recreational fisheries. <i>Reviews in Fisheries Science</i> 2:123-156.	Mapleston A (2008). Effect of changes in hook pattern and size on catch rate, hooking location, injury and bleeding for a number of tropical reef fish species. <i>Fisheries Research</i> 91: 203–211
Skomal, G.B., Chase, B.C., Prince, E.D., 2002. A comparison of circle hook and straight hook performance in recreational fisheries for juvenile Atlantic bluefin tuna. <i>Am. Fish. Soc. Symp.</i> 30, 57–65.		