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## Advantages

### BioD Contention New

#### Status quo overfishing is massively unsustainable – protections are key to prevent a decline in biodiversity causes a chain effect that destroys the ecosystem.

Science Daily 12 [Science Daily. “Coral Reef Study Traces Indirect Effects of Overfishing.” Feb. 27, 2012. <http://www.sciencedaily.com/releases/2012/02/120227132835.htm>] AJ

A study of the tropical coral reef system along the coastline of Kenya has found dramatic effects of overfishing that could threaten the long-term health of the reefs. Led by scientists at the University of California, Santa Cruz, the study was published in the journal Coral Reefs. The researchers found that the loss of predatory fish leads to a cascade of effects throughout the reef ecosystem, starting with an explosion in sea urchin populations. Excessive grazing by sea urchins damages the reef structure and reduces the extent of a poorly studied but crucially important component of the reefs known as crustose coralline algae. Coralline algae deposit calcium carbonate in their cell walls and form a hard crust on the substrates where they grow, helping to build and stabilize reefs. They also play a crucial role in the life cycle of corals. "Some coralline algae produce a chemical that induces coral settlement, in which the larval stage in the water settles on the ocean floor to grow into an adult. This settlement must happen for reefs to recover after disturbance," said lead author Jennifer O'Leary, a research associate with the Institute of Marine Sciences at UC Santa Cruz. The ability of coralline algae to induce the settlement of coral larvae has been well studied in the laboratory, but few studies have been done to investigate this relationship in the field. O'Leary set out to study the role of coralline algae in reef ecosystems as a UCSC graduate student working with Donald Potts, professor of ecology and evolutionary biology and a coauthor of the paper. In Kenya, O'Leary teamed up with Tim McClanahan, a UCSC alumnus who now heads the Wildlife Conservation Society's marine programs in Kenya. The researchers compared the types of coralline algae and the number of juvenile corals on Kenyan reefs under three different management conditions: closed, gear-restricted, and open access. On fished reefs (both those open to all fishing and those with gear restrictions), sea urchin populations were much higher than on closed reefs, resulting in lower abundance of crustose coralline algae and lower coral densities. "Outside the protected areas, we're seeing the ecosystem collapse," O'Leary said. "When you look at the effects of fishing, you can't just think about the species that are being removed. You have to look at how the effects are carried down through the ecosystem." Most of the young corals found in the surveys were growing on crustose coralline algae. Juveniles of four common coral families were more abundant on coralline algae than on any other settlement substrate. The results suggest that fishing can indirectly reduce coral recruitment or the success of juvenile corals by reducing the abundance of settlement-inducing coralline algae. "The loss of crustose coralline algae has huge implications for regeneration of coral reefs," O'Leary said. "In our surveys, we found no difference between gear-restricted areas and fully fished areas, so gear restrictions are not working to keep urchin populations down. We need to consider ecosystem-wide effects as we develop new management strategies." Potts said he hopes the new study will raise awareness of the role that coralline algae play in the health of coral reefs, especially in developing countries. "Most managers and conservationists, and even many scientists, are unaware of the existence, abundance, and importance of coralline algae, so management regimes intended to enhance the health of reefs may actually be detrimental," he said.

#### AND, a loss of reefs specifically causes extinction – collapse is quick and devastating

Craig 3 [Robin Craig, Indiana University, Robin Kundis, Winter, 34 McGeorge L. Rev. 155, p. 264-266]

Biodiversity and ecosystem function

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protect fully-functioning marine ecosystems wherever possible - even if a few fishers go out of business as a result.

#### East African aquatic ecosystems are a biodiversity hotspot – collapse also destroys the economy

UNEP 2000 [(United Nations Environment Programme) “The environment of Eastern Africa”] AT

The Eastern African region covers four coastal countries along the East African coast (Kenya, Mozambique, Tanzania and Somalia), one large island state (Madagascar), three smaller archipelagic states (Comores, Mauritius and Seychelles), and the territories of France in the southwest Indian Ocean (La Réunion). The environment here defies generalization, and encompasses several biogeographic provinces. Ecotypes include coastal dry forestss, coastal dunes, coastal floodplains, fresh and brackish water marshes,mangvoe forests, coral reefs, reef-back lagoons, sandy beaches and seabird rookeries (sea cliffs and nearshore islands). These areas function as essential habitat for local species including fish and migratory birds, as shoreline stabilizers, and as buffers again coastal erosion. The coast of Eastern Africa is bathed by the great current systems of the Indian Ocean, which vary greatly with the seasonal monsoons. The Indian Ocean has particularly narrow continental shelves along this coast, and thus lower biological productivity than many coastal regions. The coast is rich in varieties and numbers of marine life forms, however. Extensive and highly diverse coral reefs fringe its narrow shelves shores. Species-rich mangroves with their commercially important oysters, crabs and mullet abound near river estuaries and along the coasts, particularly those of Mozambique, Tanzania, Kenya and southern Somalia. The region's people are dependent to a significant extent on coastal resources. Fisheries rely on the trawlable inter-reef areas and the species-rich mangroves with their commercially important oysters, crabs and mullet. Coastal ecosystems are important economically for tourism and recreation. Threats In 1981 a UNEP fact-finding mission to East Africa identified large-scale erosion, oil pollution, damaged coral reefs, ruined mangrove swamps, pollution from fertilizers and threats to precious marine animals as the major environmental problems in the region. The list of threats to the environment has changed little since then. A workshop in 1997 listed domestic sewage, solid domestic waste, habitat degradation, agrochemical pollution and industrial waste pollution. The region remains characterized by vulnerable economies, large populations with a high rate of population growth, and areas subject to environmental stress. Pollution The important and heavily fished reef zone close to shore is particularly vulnerable to pollution and silting. Oil is a major pollution threat to coastal ecosystems, owing to the heavy use of the tanker route along the East African coast. On any given day there are hundreds of tankers in the Region, many of them Very Large Crude Carriers (VLCCs). Slicks are brought in from spills in the open ocean by coastal currents, while operational discharges from ships and refineries add to the load. In recent decades, the growth of industry has brought an increasing volume of effluents to coastal waters. The use of agricultural chemicals has continued to grow, and sewage treatment continues to be inadequate in many parts of the region. Some species of marine animals are already endangered as a result of human activities, particularly the dugong or manatee, which is often caught in fishing nets and drowned. Marine turtles continue to decrease in numbers as their eggs are poached and the adults are killed for their meat and decorative shells. Eastern Africa is also undergoing an extraordinary rate of urbanization. As the cities have become overcrowded, water supplies have proven insufficient, and systems for drainage, sewerage and refuse disposal inadequate. Domestic sewage is discharged directly into rivers and in some cases the sea. Although industrialization remains slow relative to other parts of the world, it takes place without proper environmental impact assessments legislative controls, leading to further pressure on the environment. Rivers, creeks and the sea have become dumping sites for industrial wastes. Industries of major environmental concern in the region include textiles, tanneries, paper and pulp mills, breweries, chemical factories, cement factories, sugar factories, fertilizer factories, and oil refineries. In some countries, slaughter houses near the sea are a serious source of marine pollution. Desertification Long drawn out droughts, over-grazing and poor agricultural practices, deforestation and reclamation of wetlands for agriculture are all combining to bring about desertification in the coastal areas of East Africa. The continued high population growth rate is placing pressure on land beyond its carrying capacity, and driving out the traditional nomadic practices which allowed for environmental recovery. Livestock development is seldom accompanied by proper pasture management, leading to desert conditions in areas of concentration. When these destructive pressures occur in semi-arid areas with shallow soils, desertification and desert encroachment can becomes irreversible. The semi-arid parts of Eastern Africa are particularly vulnerable. Coastal degradation and erosion Human encroachment and activities such as animal husbandry and agriculture are rapidly degrading the coastal environment of Eastern Africa, resulting in deforestation, destruction of mangroves and disappearance of other vegetation; a decline in soil fertility, and the death of wildlife. Marine resources are directly threatened by these activities. Mangroves were once common in sheltered bays and estuaries, providing shelter to many important fish species and prawns. They are now threatened by intensive cropping to provide firewood, poles, tannin, medicinal products, paper pulp and timber, and to open up new space for aquaculture and salt production. Mangrove swamps are also threatened by fluctuations in the amount of fresh water and sediment reaching them caused by upstream hydraulic works, and indirectly by destruction of protective reefs.poles, firewood and by large-scale clearing for salt production. Coral reefs have been damaged by excessive siltation resulting from poor agricultural practices, deforestation along riverbanks, and the dredging and and dumping associated with harbour development. Many were damaged by fishing with dynamite and poison, especially before these methods were outlawed in part of the region. Tourists collect coral as souvenirs. More recently the bleaching of corals has become a severe problem. The shoreline in most of the region is receding as a result of coastal erosion: the shoreline retreat over parts of Tanzania has been estimated at between three and five metres per day. Barrier islands are particularly vulnerable to rising sea levels. Climate change A task team report on the implications of climate change for the Eastern African region (see UNEP: Potential impacts of expected climate change on coastal and near-shore environment. UNEP Regional Seas Reports and Studies No.140 (UNEP, 1992.) concluded that the region's low-lying coastal areas and marine ecosystems, water resources, terrestrial ecosystems and human settlements and coastal infrastructure are at risk as a consequence of climate change impacts. The economies of the region are dominated by agriculture. Fishing is an important source of food and contributes to the economy of the majority of the countries. Tourism is an important activity. The effects of climate change will be felt everywhere, perhaps most obviously in altered patterns of rainfall, coastal weathering, atmospheric pressure and evaporation. The spatial and temporal distribution of storms and cyclones will change their paths and frequency, and could well increase in intensity: Some scientists believe the terrible floods of early 2000 in Mozambique are but a taste of worse to come. Besides the direct toll on human lives, there will be impacts on coastal habitats such as coral reefs, lagoons, and mangroves. The reefs will be vulnerable to wave action and sea-level rise as well as sedimentation. Their destruction will lead to a decline in natural coastal defences and further encourage coastal erosion. The quality and quantity of water available from rainfall, rivers and ground water will be affected by changes in the distribution and amount of rainfall, evapo-transpiration, surface runoff, river discharge, recharge, and aquifer volumes. Drier and hotter conditions would place an inordinate pressure on water resources. Ecosystem effects could include latitudinal and altitudinal shifts in plant and animal species as well as, loss of biodiversity due to water scarcity and arid soil conditions. While agriculture might benefit somewhat from a global increase in CO2, moisture deficits would lower crop yields and require additional irrigation. Sea-level rise would increase the intrusion of saline water up river mouths and also decrease the area available for cultivation on low-lying coastal areas and river estuaries. Fisheries would be affected by changes to the breeding and migratory habits of most fish, hence, year to year variability of stocks could increase leading to a planning and management problems. Socio-economic activities, and infrastructure such as port facilities, waste disposal, roads, are already under stress. Climate change would create additional stress, hence reducing economic performance and growth. The human factor A critical problem in the region is the rapid rate of human population growth in some countries. Infrastructure has a hard time keeping up, with resulting strain on educational facilities as well as resources. Much of the population resides in the coastal areas, employed by the light industry located along the coast and others in the tourist industry. Most of the region's economies rely on agriculture and tourism which together contribute close to 50% of the gross domestic product. Tourism specifically is a main earner of foreign exchange in the coastal parts of most of the countries in the region. The population is unevenly distributed over the region. Northern Mozambique and Merca northwards of Somalia are almost uninhabited due to extreme climate conditions. Both mainland and island populations are concentrated on the coasts, where population growth is higher than average for the region as a whole, largely owing to migration, urbanization and favourable employment opportunities. The majority of these populations are employed by the light industry located along the coast and others in the tourist industry. Most of the economies rely on agriculture and tourism which together contribute close to 50% of the gross domestic product. Tourism specifically is a main earner of foreign exchange in the coastal parts of most of the countries in the region. The extremely rapid rate of population growth in some of the countries in the region is a critical factor, and the resulting pressure on social amenities, notably in the coastal cities, has become very high. The infrastructure is unable to keep pace with the population growth rate; educational facilities are no longer adequate and the resource base to support the required expansion programme meagre. There is great disparity in per capita income in the countries of the region for a variety of political and environmental reasons.

#### Biodiversity loss in specific hotspots causes extinction

Howard 11 [(lead of Ecosystem Service and Poverty Alleviation Project, Wageningen Univ. Department of Social Sciences Faculty) “Tipping Points and Biodiversity Change: Consequences for Human Wellbeing and Challenges for Science and Policy” Draft Prepared for the Kavli Seminar“Addressing Global Tipping Points”13-15 March 2011] AT

In the 20 th century, we became aware that

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habitat loss and fragmentation can prohibit species from migrating and colonising new areas in re-sponse to climate change (Lovejoy & Hannah 2005).

#### Biodiversity loss increases disease vulnerability

Matt and Gebser 11 – Florian and Ronny, citing Keesing et al. 2010, biologist at Bard College in Annandale, New York, “Biodiversity decline can increase the spread of infectious diseases like Hantavirus,” <http://www.eea.europa.eu/atlas/teeb/biodiversity-decline-can-increase-the/view>)//a-berg

What is the problem? Intuitively one might expect that higher overall biodiversity leads to greater diversity and abundance of

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the elimination of disease hotspots has the risk to “backfire” by resulting in pathogen transmission (Keesing et al. 2010).

#### Specifically, zoonotic diseases lead to extinction

Casadevall 12 – Prof @ Department of Microbiology and Immunology and the Division of Infectious Diseases of the Albert Einstein College of Medicine Arturo. (“The future of biological warfare,” Microbial Biotechnology, p. 584-5)

In considering the importance of biological warfare

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if some of these species acquired the capacity for pathogenicity as a consequence of natural evolution or bioengineering.

#### Thus the plan: The Republic of Kenya and the United Republic of Tanzania should establish a Marine Protected Zone forbidding resource extraction on all sovereign marine areas, including Lake Victoria and oceans within their EEZ.

#### Marine protected areas empirically worked in Kenya in the past – increase biodiversity and species density.

Arthur and McClanahan 01 [McClanahan, T. R., and R. Arthur. "The effect of marine reserves and habitat on populations of East African coral reef fishes." Ecological Applications 11.2 (2001): 559-569] AJ

The single-factor ANOVAs comparing differences among substratum and sea urchin measures for the different levels of protection from fishing indicate that fishing is important in predicting hard coral cover and sea urchin density and biomass, but not the other substratum categories(Table1).Hard coral is lowest in Kenya's unprotected fringing reefs, but more variable among the three other level-of-protection categories. Abundances of sea urchins are, however, highly predictable based on fishing intensity. Average sea urchin population densities range from 3.5 to118 individuals per10m2andincreasedpredictablyalongthegradient of increasing fishing intensity (Table1). Comparisons of population density, species richness, and rarity of fishes over the spectrum of fishing intensity indicates that fishing has had a marked influence on fish communities (Table2). Bray-Curtis similarity among the four management categories varied between 0.28 and0.39 (28%and39% similarity) for most comparisons, but there was a higher similarity, of 0.73, between fished Tanzanian reefs and the newly protected reefs. Fish density overall families shows recently protected reefs with the highest densities of fish, and older protected reefs with a much lower density (Fig. 2a). This is due to the high numbers of damselfish in Tanzanian patch reefs; a separate analysis, excluding the small-bodied families of damsels and wrasses, shows that total fish density declines sharply with increasing fishing pressure (F = 14.1, P < 0.01, Fig. 2b). Older and younger protected reefs harbor more species, per 2000 [meters squared] m2, than fished reefs (F = 16.1, P < 0.01, Fig. 2c). Species rarity, based on the fish species recorded on the transects, also shows that rare species contribute less to the overall species composition of fished reefs than in reefs protected from fishing(F=14.2,P< 0.01, Fig. 2d). Fishing is significant in predicting population density, species richness, and rarity for the studied families (Table2). Population densities of the different families showed similar trends; though pufferfish, wrasses, and damselfish population densities showed no significant differences. Significant differences were found in the species richness and rarity of all studied families, except for pufferfish, with parrotfish and surgeonfish hav- ing the highest significance values(Table2).The ANOVA indicates that surgeonfish, triggerfish, and par- rotfish populations are most influenced by fishing, with the lowest numbers in the most heavily fished site(Ta- ble 2). The average species similarity among patch reefs (0.29 + 0.14 SD, n = 45) and among fringing reefs (0.33 + 0.13 SD, n = 66) was not statisticallydifferent (ANOVA,F=2.30,P=0.13).Two-way ANOVA comparisons, to determinethe relative importanceof reef type and protectionin determiningfish commu- nities, indicate that bothtimesinceprotectionandreef structureinfluencedfish populations,but protection from fishing is the strongest factor (Table3). Species richness of the different fish families indicates that protected reefs have higher numbers of species than unprotected reefs, regardless of reef structure. The only exception is pufferfish,that showed reef type, but not protection,to be significantin predictingrichness (F = 5.0, P = 0.04, Table3). Parrotfishspecies richness indicates both reef type as well as protectionto be significant factors. The interactionof reef type with protectionfromfishingwassignificantinexplaining the species richness of wrasses. Analysis of the pop- ulation density of the studied families indicates that reef structureis importantin influencingthe popula- tions of butterflyfish,damselfish,and parrotfish.Sur- geonfish, triggerfish,butterflyfish,and parrotfishhad significantly higher populationdensities in protected reefs (Table 3). Of these, butterflyfishand parrotfish weresignificantlyinfluencedby bothreeftypeandage of protection,but the interactionterms were not sig- nificantfor any populationdensity comparison. Total species richness in protected and unprotected patch and fringing reefs indicates that protection from fishing is the overriding factor in determining species richness, with an average of 62 species recorded in our samples in protected reefs, as compared to an average of 41 species for unprotected reefs.Theinteractionof reef type with protectiondoes, however,produceno- ticeabledifferencesin species distribution(F = 4.8, P = 0.05,Table3).Reeftype,butnotprotection,ishighly significantin predictingtotalspeciesdensity.However, whenthesameanalysiswascarriedoutexcludingdam- selfishandwrasses,theANOVAshowsprotectionto significantlyinfluencethe combineddensity of the re- mainingfamilies(Table3). Speciesrarityis alsohighly predictablebased on protectionfrom fishing, but not for reef type, although the interactionterm between both factorsis significant(Table3).

### ---Econ

#### Ocean sustainability key to economic stability and warming.

Parrish and Boersma 99 [Boersma, P. Dee (Corresponding author), and Julia K. Parrish (Zoology Department, University of Washington). "Limiting abuse: marine protected areas, a limited solution." Ecological Economics 31.2 (1999): 287-304] AJ

Many human activities other than fishing depend, directly or indirectly, on the sea. Peterson and Lubchenco (1997) define five broad categories of ecosystem services the world’s oceans provide (other than the extractive value of the world’s fisheries), three of which are concentrated in con- tinental shelf environments: (1) transformation, detoxification, and sequestration of pollutants, (2) coastal ocean-based recreation, tourism, and retirement, and (3) coastal land development and valuation. Ironically, each of these services is dependent on the continued health of the relevant ecosystems we are using to the point of degradation. In fact, we are aware of these services be- cause they add value to our lifestyles, whether it be sewage removal or increased property value as a function of coastline view potential. Pressure on coastal environments, either di- rectly through habitat alteration or loss as a con- sequence of usurpation by humans, or indirectly as a consequence of the cumulative effects of dense human presence, is increasing. Bryant (1995) estimates that fully half of the world’s coastal ecosystems currently sustain a moderate to high risk of development-related threat. Highly developed regions, such as Europe, have an even higher percentage of threatened coastline (86% at moderate or high risk). Coastlines undergoing development are locally subject to habitat modification as wetlands are filled or dredged, river courses are channelized, tidelands are diked, beaches are armored, and jetties and seawalls are built. Other than the obvious habitat loss, these modifications can produce geographic ripples as the flow of water, sediment, and nutrients are altered. Of the 1108 coastal marine protected areas assessed by Bryant (1995), 59% occurred in areas currently sustaining a high risk of degrada- tion due to development-related activities. White (1986) compared features of reef habitat quality, including total coral, topographic relief, notice- able structural damage, and butterfly fish (an obligate coral feeder) species richness among Indo-Pacific reef sites of varying protection. Sites with no legal or field protection close to centers of human habitation suffered the most degradation, becoming unsuitable for sustaining healthy reef communities. As the human population continues to expand, this trend will not get better. In apparent contrast to the destructive pres- sures of habitat conversion and overextraction of natural resources, increasing economic value is being realized from ecosystem preservation in the form of tourist and amenity income. Surprisingly, ecotourism accounts for 5 – 15% of global tourist dollars and this sector of the economy is growing at approximately 30% per annum (Giannecchini, 1993; Miller, 1993). Tourism in various Caribbean nations accounted for 17 – 55% of gross national product (1977 US dollars, Beekhuis, 1981). In 1990, Caribbean tourism employed 350,000 peo- ple and generated 8.9 billion US dollars (Dixon et al., 1993). Preservation of coastal systems can also add to land values as retirees and vacationers are willing to pay more for the aesthetic experiences provided by a functioning, relatively undisturbed ecosys- tem. For instance, land bordering the Chesapeake Bay increased 5 – 25% in value following designa- tion of Maryland’s Chesapeake Bay critical area and New Jersey’s Pineland regulations (Beaton, 1988). Punta Tombo, Argentina houses the largest Magellanic penguin colony in the world (approxi- mately 250,000 breeding pairs). Although the re- gion derives its principle economic benefit from oil transport and fisheries, tourism has been grow- ing rapidly (Fundacion Patagonia Natural, 1996). The penguin colony is an important tourist desti- nation attracting approximately 50,000 visitors each year and generating millions of USD equiva- lents in primary and secondary income (Funda- cion Patagonia Natural, 1996). Between 1987 and 1997, the number of breeding pairs of penguins at Punta Tombo declined by 16% (Boersma, 1997) due to a combination of factors including chronic oil pollution and potential competition with coastal shelf hake and squid fisheries. Reserve designation of the colony and surrounding waters may help protect penguins and the ecosystem of which they are a part, providing a sustainable ecotourism input to the local economy.

#### Warming is real, anthropogenic, and causes extinction

Richard Schiffman 9/27/13, environmental writer @ The Atlantic citing the Fifth Intergovernmental Panel on Climate Change, “What Leading Scientists Want You to Know About Today's Frightening Climate Report,” The Atlantic, http://www.theatlantic.com/technology/archive/2013/09/leading-scientists-weigh-in-on-the-mother-of-all-climate-reports/280045/

The polar icecaps are melting

AND

the most chilling headline of all for the U.N. report: ¶ "We have five minutes before midnight."

### Pirates

#### Also results in massive piracy – counterfeit licenses, poverty, and patriotism

Schbley and Rosenau 11/29 [Ghassan, Research Analyst with CNA’s International Affairs Group, and William, Senior Analyst with CNA Strategic Studies’ Center for Stability and Development, 2013, “Piracy, Illegal Fishing, and Maritime Insecurity in Somalia, Kenya, and Tanzania,” http://www.cna.org/sites/default/files/research/IIM-2013-U-005731-Final3.pdf]

Somali waters, particularly off the coast of the semi-autonomous state of Puntland in the country’s northeast, contain some of the world’s most important stocks of tuna, anchovies, sharks, rays, lobsters, and shrimps.20 The extent of IUU fishing of the Somali coast is difficult to assess, although one study suggests that more than more than half of the total annual catch in the wider western Indian Ocean is illegal.21 Within Somali waters, possibly hundreds of vessels participate in this depredation. Exact numbers of IUU fishermen are impossible to glean, but there is credible evidence that foreign fishing occurred within 200 nautical miles of Somali coasts in the 1990s and early 2000s.22 As late as 2005, the UN Food and Agriculture Organization (FAO) estimated 700 foreign-owned vessels engaging in “unlicensed” fishing off the Somali coast.23 The reduction in catches by small-scale Somali artisanal fishers is almost certainly a byproduct of overfishing by commercial and industrial vessels from outside the region.24 (Technically, according to some authorities, no illegal fishing takes place in Somalia’s 200-nautical-mile Exclusive Economic Zone, or EEZ—the area next to and beyond the country’s 12-mile territorial waters—since the country has failed to declare an EEZ, despite the urging of some members of the international community.)25 Two types of non-Somali vessels conduct IUU fishing in Somali territorial waters: Regional vessels from countries such as Kenya, Iran, Saudi Arabia, the United Arab Emirates (UAE), and Yemen typically operate within Somalia’s 12-mile territorial sea. There, they are often visible from the Somali shoreline and they interact frequently with Somalis. Indeed, many of the vessels’ operators buy counterfeit fishing licenses issued by corrupt Somali officials, warlords, businessmen, fishermen, or even pirates.26 International vessels are mainly flagged in China, Taiwan, Thailand, Sri Lanka, India, France, Spain, Germany, Honduras, and Russia, and most fish within Somalia’s undeclared 200-nautical-mile EEZ waters.27 Fears about piracy appear to have kept down the number of such vessels.28 Tuna is particularly prized among the international IUU fleet. The international fishing boats are most active in Somali waters during the southwest monsoon period (June–September), when migration patterns bring tuna inside the 200-mile limit. As with the operators of regional vessels, some international operators acquire counterfeit Somali fishing licenses. Selling these bogus permits is a lucrative business: annual permits can cost as much as $150,000 per boat.29 IUU fishing has had several important negative effects on Somalia. It has deprived the government of badly needed license fees, tariffs, taxes, and other revenue. IUU fishing represents a further erosion of the state’s authority in its maritime domain. Although never a major source of protein for the Somali people as a whole, fish are vital to the survival of the country’s small population of artisanal fishers; as suggested above, overfishing is reducing their annual catches.30 Finally, IUU fishing in the form of bottom- trawling causes substantial damage to Somalia’s marine ecosystems, including the coral reefs that are home to many species.31 Somali narratives The explanations that Somalis offer to explain the post-1991 development of piracy fall into three general categories: the “coast guard” narrative, the “empty sea” narrative, and the “anger” narrative.32 These discourses are not mutually exclusive, and are in fact mutually supportive. According to the first narrative, piracy plays a state-like security role in protecting Somali lives and sovereignty against foreigners intent on stripping the country of its natural resources. Framed in this way, defending “our coasts,” “our sea,” and “our water” is a patriotic response that confers legitimacy on Somalis who attack outsiders intent on plunder.33 The “empty sea” narrative posits piracy as a reasonable response to overfishing, IUU activities, and economic underdevelopment. With the sea stripped of its riches by foreign exploiters, piracy is the only way for Somalis to earn a living. According to this narrative, kidnapping for ransom is not criminal; rather, it is “taxation” intended to compensate Somalis for the depredations caused by outsiders.34 The third narrative, “anger,” stresses the inevitable emotional responses of Somalis to the plundering of the country’s fish stocks, the destruction of the nets and boats of artisanal fishers, and the violation of Somalia’s national dignity.35 Assessing IUU fishing–piracy linkages Illegal fishing has been underway in Somali waters since the 1990s. According to the UN, local accounts described foreign-flagged industrial trawlers “frequently engaged in intentional collisions with local fishermen in Somali waters, leading to the destruction of fishing gear, injuries, and even deaths of local subsistence fishers.”36 Early instances of what would later be considered piracy did involve artisanal fishermen who had armed themselves, often with the assistance of local militias.37 Foreign fishing vessels were attacked, hijackings occurred, and ransom was paid, but the amounts were relatively small—on the order of $5,000–$10,000 per incident.38

### Fish Wars

#### Overfishing in the status quo is unsustainable – collapse comes within years and causes large-scale poverty and fish wars – empirics confirm

INIR 12 [INIR News, a service of the UN Office for the Coordination of Humanitarian Affairs. “KENYA: Vanishing fish income forces livelihood switch/correction 6/11/12. <http://www.irinnews.org/report/95617/kenya-vanishing-fish-income-forces-livelihood-switch-correction>] AJ

Experts say rising population and overfishing are deepening poverty for millions of residents around Lake Victoria, the world's second largest fresh water lake. "Population explosion around the lake means many people turn to the lake and also destroy the environment around it, and in just a matter of years these people will experience poverty and hunger on a large scale," warned Charles Mboya, a fisheries lecturer at Western Kenya's Maseno University. "International and local demand for fish and its products is on the increase against a backdrop of reducing fish stocks, which might lead to a vicious struggle for it. We might witness fish wars soon," he said. The ministry notes that cross-border fish and trade conflict is one of the industry's challenges; an estimated 3.5 million people depend on the lake for their livelihood, either directly or indirectly in Kenya, Tanzania and Uganda, the three countries that share the lake (Kenya’s share of the shoreline is 6 percent). In 2009 a diplomatic row broke out between Kenya and Uganda over fishing rights on the tiny disputed island of Migingo, which is near a rich breeding ground for Nile perch. In addition to overfishing, the effects of climate change - including prolonged droughts and increased lake salinity - are also contributing to the reduction in fish stocks. "The biggest threat to Lake Victoria is the unsustainable use of its waters and the resources in it; excessive fishing devoid of any measures to replenish what is being used has seen fish diminish very fast, and particularly Nile perch," said Mboya. Support for fish farming "It is important to have alternative ways to ensure that not all our fish resources come from the lakes, and for that reason the government is promoting fish farming as an alternative sources of food and income," said Okumu Makogola, an official at the Fisheries Ministry. The government has started a number of measures to boost fish production and provide employment to fishing communities; to date, 48,000 fish ponds have been constructed in 160 constituencies across the country, creating 120,000 jobs, according to government officials.

#### Fish wars in Kenya and Uganda

AP 09 [“Kenya, Uganda in Row Over Fishing Island.” 30 October 2009. Newsmax, © Associated Press. <http://www.newsmax.com/Africa/Kenya-Uganda-island-row/2009/10/30/id/452125>] AJ

MIGINGO ISLAND, Lake Victoria — As the morning sun spreads across the inky waters of Lake Victoria one speck of an island glints in the early dawn light. Migingo is the only inhabited place in this part of Africa’s largest lake, a blip on the horizon coated in corrugated tin. Around 500 fishermen, traders, police and prostitutes live on the island (see map below) that is less than an acre in size so almost every inch is covered in tin shacks. They are here for one reason: fish, in particular the huge, heavy, silver-scaled Nile perch that lives in the deep waters around Migingo. It is a valuable but diminishing resource, and one worth fighting for. A row between Kenya and Uganda over who owns the island led to threats of war this year as tiny contingents of armed security forces from each nation crowded onto Migingo claiming it as their own. Shots were never fired, although irate Kenyans did pull up a section of railway that links landlocked Uganda to the Indian Ocean. Instead of coming to blows the politicians came to an uneasy agreement: A joint border commission was to consult maps dating back to the 1920s and decide who owns the island and therefore the fish that swim around it. Months later the commission has not yet reported. Instead of clarity, there is an ominous silence. Old men say that there used to be plenty of fish in Lake Victoria but now, with greater numbers of fishermen desperate to bring in bigger catches, with climate change causing the lake level to drop at an alarming rate, and with mushrooming lakeside communities and industries polluting the waters, the Nile perch is harder to catch. The fishing is best where the water is deepest, which is where Migingo is located. Closer to the shore the waters are fished out: at night hundreds of long wooden canoes with gas lamps burning on their prows bob on the water like Chinese funeral lanterns. As a rooster crows its hoarse dawn call, John Obunge rubs sleepy eyes and swings his legs out of bed. The 34-year old Kenyan fisherman has lived on Migingo since 2004. “It is good fishing here because we save fuel and the tedious work of actually coming into the deep water to fish and then going back to the shore to deliver,” he explained. Instead he lands his fish and middleman traders come out to buy from him. Although the waters here are still rich Obunge said, “We find the fish reducing in number day by day.” Catches of up to 450 pounds used to be common, now boats are coming back with a quarter of that.

#### African conflicts cause great power war

Glick 7 (Caroline – senior Middle East fellow at the Center for Security Policy, Condi’s African holiday, p. http://www.centerforsecuritypolicy.org/home.aspx?sid=56&categoryid=56&subcategoryid=90&newsid=11568)

The Horn of Africa is a dangerous

AND

mounting a unified challenge to Egypt's colonial legacy of extraordinary rights to the waters of the Nile River which flows through all countries of the region.

#### International policy in Africa confirms likelihood of war

Azikiwe 9/24 [(Abayomi, Editor, Pan-African News Wire) “US Wants to Stop China in Africa” The 4th Media 2013] AT

A political commentator says

AND

natural resources are “guiding US military policy towards the continent.”

### ---Terrorism

#### Poverty causes terrorism – provides recruits

Japan Times 10/7 [“Eradicating terrorism in Africa”] AT

Afour-day terrorist siege at the Westgate

AND

of chemical fertilizers so local farmers can boost their production of food and industrial crops to sell to urban areas.

#### African conflict and instability specifically in Kenya is also a link to global terrorism – provides money laundering and a safe haven

Dehez 5 [(Dustin, spokesmen on Defense of the CDU/CSU in the German parliament, Senior Research Fellow at the Düsseldorf Institute for Foreign and Security Policy and the Institute's Director for North-East African Studies, research focuses on the Horn of Africa, Military in Africa) “Why Africa matters: Terrorism in Africa - the forgotten continent once more?” World Security Network Foundation Dec 14] AT

One of the reasons why

AND

they have not yet allocated the necessary financial support nor have they increased their diplomatic activity.

#### Terrorism causes extinction

Barrett et al 13—PhD in Engineering and Public Policy from Carnegie Mellon University, Fellow in the RAND Stanton Nuclear Security Fellows Program, and Director of Research at Global Catastrophic Risk Institute—AND Seth Baum, PhD in Geography from Pennsylvania State University, Research Scientist at the Blue Marble Space Institute of Science, and Executive Director of Global Catastrophic Risk Institute—AND Kelly Hostetler, BS in Political Science from Columbia and Research Assistant at Global Catastrophic Risk Institute (Anthony, 24 June 2013, “Analyzing and Reducing the Risks of Inadvertent Nuclear War Between the United States and Russia,” Science & Global Security: The Technical Basis for Arms Control, Disarmament, and Nonproliferation Initiatives, Volume 21, Issue 2, Taylor & Francis)

War involving significant fractions

AND

making one or both nations more likely to misinterpret events as attacks. 16

### Systemic Impacts

#### MPAs improve health

Leisher 7 [(Craig Leisher, Pieter van Beukering, Lea M. Scherl) “Nature’s Investment Bank: How protected areas contribute to poverty reduction” This study was funded by The Nature Conservancy, the Australian Government Department of the Environment and Water Resources, and the Poverty Reduction and Environment Management Program at Vrije Universiteit in Amsterdam] AT

Benefits to health. Greater fish catches led to greater protein intake in Navakavu and Apo Island and a perceived improvement in children’s health in particular. Greater incomes from fishing and tourism in Apo Island led to more frequent visits from off-island doctors and funding for a resident midwife. In Bunaken, visitor entry fees funded water-supply tanks, public toilets, and washing places in several villages and thus improved public health. In three sites, the increased environmental awareness from the marine protected area operation translated into better understanding and acceptance of solutions to sanitation problems.

#### Empowers women

Leisher 7 [(Craig Leisher, Pieter van Beukering, Lea M. Scherl) “Nature’s Investment Bank: How protected areas contribute to poverty reduction” This study was funded by The Nature Conservancy, the Australian Government Department of the Environment and Water Resources, and the Poverty Reduction and Environment Management Program at Vrije Universiteit in Amsterdam] AT

Benefits to women. In all four sites, the marine protected area helped empower women economically and in some cases socially. Women are the reef gleaners in Navakavu and benefit financially by collecting and selling the shellfish just outside the marine protected area, which have greatly increased because of the protected area. In Bunaken and Apo Island, dive tourism created more high-income job opportunities for women, and residents noted an improvement in women’s lives because of the marine protected area. In the Arnavons, when women became involved in seaweed farming and the making of traditional clothes to earn income, they gained a stronger voice in community meetings.

# Frontlines

## T/Theory Frontlines

### Resource Conservation CI

Black’s Law no date [“What is ENVIRONMENTAL PROTECTION?” The Law Dictionary Featuring Black's Law Dictionary Free Online Legal Dictionary 2nd Ed.] AT

What is ENVIRONMENTAL PROTECTION? Environmental guardianship based on policies and procedures. Objectives are (1) the conserving of natural resources, (2) the preserving of the existing natural environment and, (3) where possible, repairing damage and reversing trends.

### A2 Must Conflict

#### Unsustainable fish extraction conflicts with environmental protection – the point of the aff is to resolve this conflict in favor of the environment

Shapiro [(Alan, Earth and Environmental Engineering Graduate Student, Columbia University; Ashley Schneider, Student at Northern Alberta Institute of Technology) “The Question of Environmental Accountability for Resource Extraction” Topic Paper, University of Alberta] AT

Resource extraction causes both environmental degradation and environmental pollution. Industries are responsible for approximately 39% of the greenhouse gases emitted. Extraction of non-renewable resources such as fossil fuels and minerals poses a large problem, with crude oil and natural gas exploration contributing to 60% of the total environmental impact. Biotic resource extraction including agriculture, wood harvesting, animal grazing, and to a smaller extent, hunting and biotic harvesting for pharmaceutical reasons have also had effects on the environment. Fish capture is the major aquatic resource extraction by humans resulting in over 93 million tons of fish being produced in 2005, with the majorities of extraction taking place in the ocean (FAO 2009). While biotic resource harvesting done at sustainable levels does not necessarily cause harm, over extraction can cause deforestation and soil erosion from over wood harvesting, soil nutrient depletion from agriculture and the collapse of fish stock from over fishing in certain areas. However the extraction itself may not be the biggest cause of environmental impact. Agriculture, while the harvesting itself may not cause a huge impact, uses 70% of global fresh water consumption (Hoekstra and Chapagain 2008; Koehler 2009) and according to the FAO database, also uses approximately 38% of the world‟s total land area. Toxic emissions are also a problem. Most toxic substances released from human actions are from the electrical, pulp, utilities, metal, and mining industries. This also has an adverse effect on the environment and the ecosystems in the immediate areas of these industries. There are two major points to address on this topic. The first is: “How can we balance environmental damage from different industries”? Should all industries be accountable to the same standard? Or should more vital industries be allowed higher „damage quotas‟? And if the latter is true, how do we assess the „necessity‟ of a particular industry? It is clear that different industries serve different roles in society, but it is still difficult to create an unbiased hierarchy while pleasing the majority of the parties involved. The second point is: “Should different nations have different allowances based on their development status”? It could be argued that developed nations have already exploited their rights and privileges, and it is unfair punishment for developing nations if they are not given the same opportunity. At the same time, this allows some „developing‟ countries like India and China, who lead the world in extraction and export of many resources, to continue to damage the environment without consequence. The better way perhaps is to monitor environmental damage from nation to nation and vary consequences accordingly, however this is difficult due to a lack of networks and standards in place at present. Either way, researching and developing more environmentally friendly methods of resource extraction and more efficient reclamation techniques are vital components of any solution.

### A2 T Resource Ex

#### I directly address the conflict of the resolution – hunting is a form of biotic resource extraction

Shapiro [(Alan, Earth and Environmental Engineering Graduate Student, Columbia University; Ashley Schneider, Student at Northern Alberta Institute of Technology) “The Question of Environmental Accountability for Resource Extraction” Topic Paper, University of Alberta] AT

Resource extraction causes both environmental degradation and environmental pollution. Industries are responsible for approximately 39% of the greenhouse gases emitted. Extraction of non-renewable resources such as fossil fuels and minerals poses a large problem, with crude oil and natural gas exploration contributing to 60% of the total environmental impact. Biotic resource extraction including agriculture, wood harvesting, animal grazing, and to a smaller extent, hunting and biotic harvesting for pharmaceutical reasons have also had effects on the environment. Fish capture is the major aquatic resource extraction by humans resulting in over 93 million tons of fish being produced in 2005, with the majorities of extraction taking place in the ocean (FAO 2009). While biotic resource harvesting done at sustainable levels does not necessarily cause harm, over extraction can cause deforestation and soil erosion from over wood harvesting, soil nutrient depletion from agriculture and the collapse of fish stock from over fishing in certain areas. However the extraction itself may not be the biggest cause of environmental impact. Agriculture, while the harvesting itself may not cause a huge impact, uses 70% of global fresh water consumption (Hoekstra and Chapagain 2008; Koehler 2009) and according to the FAO database, also uses approximately 38% of the world‟s total land area. Toxic emissions are also a problem. Most toxic substances released from human actions are from the electrical, pulp, utilities, metal, and mining industries. This also has an adverse effect on the environment and the ecosystems in the immediate areas of these industries. There are two major points to address on this topic. The first is: “How can we balance environmental damage from different industries”? Should all industries be accountable to the same standard? Or should more vital industries be allowed higher „damage quotas‟? And if the latter is true, how do we assess the „necessity‟ of a particular industry? It is clear that different industries serve different roles in society, but it is still difficult to create an unbiased hierarchy while pleasing the majority of the parties involved. The second point is: “Should different nations have different allowances based on their development status”? It could be argued that developed nations have already exploited their rights and privileges, and it is unfair punishment for developing nations if they are not given the same opportunity. At the same time, this allows some „developing‟ countries like India and China, who lead the world in extraction and export of many resources, to continue to damage the environment without consequence. The better way perhaps is to monitor environmental damage from nation to nation and vary consequences accordingly, however this is difficult due to a lack of networks and standards in place at present. Either way, researching and developing more environmentally friendly methods of resource extraction and more efficient reclamation techniques are vital components of any solution.

#### Standards

#### 1. accuracy – It identifies a distinct term of art “biotic resource extraction” as a subset of the resolutional conflict, which means their generics are not about the right lit base.

#### 2. specificity – this best applies to DCs - Hunting is the primary form of resource extraction – they overlimit

Traun 09 [Max Abensperg-Traun. Federal Ministry of Agriculture, Forestry, Environment and Water Management, Division for Nature Conservation and Species Protection, CITES Management Authority, Austria. “CITES, sustainable use of wild species and incentive-driven conservation in developing countries, with an emphasis on southern Africa.” Biological Conservation. 142 (2009) 948–963]

In the developing nations, use of wild-living natural resources by rural communities is rarely a choice but an economic impera- tive. Further, use can either be extractive or non-extractive. Extractive use may be lethal (e.g. through trophy hunting, logging, etc.) or through the collection of parts and derivatives without affecting the survival of the specimens involved (e.g. plant products). Non-extractive use refers to all varieties of nature-based tourism. Given the economic circumstances for affected rural communities, a dis- tinction between whether use of species is primarily subsistence or for primarily commercial purposes is largely inseparable and this paper

#### Their interp is impossible – if their interp forces the aff to regulate the pollution that results from resource extraction, they force the aff to be effects topical since an aff would not directly regulate resource extraction

Woodley and Kay 93 continue [Steven Woodley, Chief Scientist at Parks Canada and consultant. IUCN and co-Chair a World Commission on Protected Areas / Species Survival Commission Joint Task Force on Biodiversity and Protected Areas; James Kay Associate Professor of Environment and Resource Studies at the University of Waterloo. “[Ecological Integrity and the Management of Ecosystems” 1993]

“Resource Extraction refers to activities associate with agriculture, forestry, mineral extraction, mining, hunting, fishing, etc.”

### A2 Renewables T

#### I meet – advantages might be about a renewable resources but they do not determine the topicality of the plan itself – MPAs are also designed to protect endangered habitats.

### A2 T Pollution

#### Counter-Interp: Environmental production includes active prevention of ecosystem degradation.

OECD 3 [“ENVIRONMENTAL PROTECTION” CLASSIFICATION OF ENVIRONMENT PROTECTION ACTIVITIES, March 04, 2003] AT

Environmental protection refers to any activity to maintain or restore the quality of environmental media through preventing the emission of pollutants or reducing the presence of polluting substances in environmental media. It may consist of: (a) changes in characteristics of goods and services, (b) changes in consumption patterns, (c) changes in production techniques, (d) treatment or disposal of residuals in separate environmental protection facilities, (e) recycling, and (f) prevention of degradation of the landscape and ecosystems.

### A2 T LDCs

#### Often times the terms “developing countries” and “least developed countries (LDC)” are used synonymously, as well as the terms “developed countries” and “most developed countries (MDC)”. The United Nations, one of the most qualified sources for definitions, uses the terms LDC and MDC. Least developed countries are defined by these parameters:

UN 13 [“LDC information: The criteria for identifying least developed countries,” The United Nations Development Policy and Analysis Division. August 3, 2013. http://www.un.org/en/development/desa/policy/cdp/ldc/ldc\_criteria.shtml]

The criteria have been refined over the years to take into account new insights from research on economic development, updated information on structural impediments to development and improvements in the availability of internationally comparable data. Nonetheless, the underlying principle of identifying LDC as countries which face structural handicaps has essentially remained the same. Currently, the following criteria are used to classify countries as least developed: Gross national income per capita Human Assets Index Economic Vulnerability Index In addition, low income countries with population larger than 75 million inhabitants are not eligible to be considered for inclusion.

### A2 Solveny Advocates Thero

#### Counter-interp:

#### There are several solvency advocates – my author cites 5.

Arthur and McClanahan 01 [McClanahan, T. R., and R. Arthur. "The effect of marine reserves and habitat on populations of East African coral reef fishes." Ecological Applications 11.2 (2001): 559-569] AJ

Thus, the establishment and protection of marine protected areas is the single dominant factor in predicting abundance, numbers of species, and rarity of fishes on shallow East African reefs. Commercially im- portant species are most affected by fishing, with par- rotfish, surgeonfish, and triggerfish being the most sus- ceptible families. Damselfish and most small-bodied wrasses, on the other hand, are not heavily fished, and tend to dominate fished reefs in terms of population density. Fisheries management attempts to conserve fish populations by instituting restrictions on gear type, the size of fish, or the catch, or by closing waters to allow recuperation of fish populations. In general, these management options have proved difficult to imple- ment (McClanahan 1999) where reef-based fisheries are concentrated close to shore, are poorly monitored and policed, and the high level of resource dependence and poverty of fishers makes fisheries restrictions and regulations politically difficult to support or imple- ment. Marine protected areas which impose a complete ban on any resource gathering activities are frequently being suggested as an alternative, as this management is hypothesized to be simple and more logistically and politically feasible to implement (Roberts and Polunin 1991, 1993, Bohnsack 1993, 1996, Hastings and Bots- ford 1999). Despite good arguments in favor of MPAs for fisheries management, most coral reef MPAs have notdonewell in restrictingfishing(Kelleheret al.1995, Alder1996,McClanahan1999).ThesuccessofMPAs may depend on the size and placementof the parks suchthatlargenumbersof fishersarenotdisplacedand thetotalcatchis notreducedgreatly(McClanahanand Kaunda-Arara1996, McClanahanand Mangi 2000).

#### East African MPAs are a huge issue in international talks and the lit – prefer my study since it’s a review.

Francis et al 02 [Francis, Julius, Agneta Nilsson, and Dixon Waruinge. "Marine protected areas in the eastern African region: How successful are they?." AMBIO: A Journal of the Human Environment 31.7 (2002): 503-511] AJ

Marine Protected Areas(MPAs)are widely recognized as an important component of any management strategy for sustain- able developmentand protectionof the coastal and marineen- vironment(1).MPAs have been recommended in several international environmental conventions as a priority mechanismfor sustainabledevelopmentof the coastalandmarineenvironment, includingChapter17 of Agenda 21 of the United Nations Con- ferenceon DevelopmentandEnvironment;the Conventionon 30 40 50 60 Figure1. Mapof EasternAfricanregion. Biological Diversity; United Nations Conventions on the Law of the Sea; and the Conventionon the Protection,Management and Development of the Marine and Coastal Environment of the EasternAfricanRegion(NairobiConvention). For the purposesof this paper,MPAs are defined as coastal and sea areasenjoying some level of legal protectionnationally or locally, andthatareespecially dedicatedto the conservation, protectionandmaintenanceof biodiversity,and associatedcul- turalresources. A number of reviews of eastern African MPAs have covered broad issues, suchasconstraintsfortheestablishmentofMPAs andthedevelopmentorstrengtheningofasystemofMPAs(2) andthefutureofMPAsintermsoffinancialandconservation sustainability(3). This review is based on the informationfrom anumberofMPAsandprovidesanup-to-datestatusofMPAs in easternAfrica.

## CP

### A2 All CPs

#### Perm do the counterplan – the MPA approach is compatible

Agardy 3 [(TUNDI AGARDY, Sound Seas; PETER BRIDGEWATER, UNESCO Man and the Biosphere Program; MICHAEL P. CROSBY, National Oceanic and Atmospheric Administration; JON DAY, Great Barrier Reef Marine Park Authority; PAUL K. DAYTON, Scripps Institution of Oceanography; RICHARD KENCHINGTON, Maritime Policy Centre, University of Wollongong; DAN LAFFOLEY, English Nature, Peterborough; PATRICK McCONNEY, Caribbean Conservation Association; PETER A. MURRAY, Organization of Eastern Caribbean States, Environment and Sustainable Development Unit, Castries, Saint Lucia; JOHN E. PARKS, Biological Resources Program, World Resources Institute, Washington; and LELEI PEAU, Department of Commerce, Government of American Samoa, Pago Pago, American Samoa, USA) “Dangerous targets? Unresolved issues and ideological clashes around marine protected areas” AQUATIC CONSERVATION: MARINE AND FRESHWATER ECOSYSTEMS, Aquatic Conserv: Mar. Freshw. Ecosyst Jan 12] AT

Recent scientiﬁc consensus at the American Association for the Advancement of Science (AAAS) meetings of February 2001, as cited in the Scientiﬁc Consensus Statement on Marine Reserves and Marine Protected Areas (National Center for Ecological Analysis, 2001) inadvertently created a dichotomy for marine protection with regard to use of MPAs. The statement distinguishes between marine reserve and marine protected area, the former being exclusive of all ﬁshing, disruptive or extractive use (with the exception of scientiﬁc research), and the latter referring to multiple-use areas with mixed harvest, restricted harvest, and/or complete harvest prohibition areas. The NCEAS statement does refer to marine reserves as a special category of MPAs, but then proceeds to contrast the two by stating that MPAs do not provide the same beneﬁts as marine reserves. Yet, such distinctions are artiﬁcial given that many marine protected areas contain core areas in which all extractive uses are prohibited. MPAs should be conceived as areas of nested IUCN protected area categories (see Table 1 in IUCN, 1994) } which may change their boundaries both spatially and temporally. (The World Commission on Oceans discusses this in more detail (IWCO, 1998)). We believe that the broad-term MPA should be used to describe the full conﬁguration of protected areas in coastal areas and oceans, as we do in the remainder of this manuscript.

### A2 Community CP

#### It’s normal means and the plan solves all the advantages of the CP

Leisher 7 [(Craig Leisher, Pieter van Beukering, Lea M. Scherl) “Nature’s Investment Bank: How protected areas contribute to poverty reduction” This study was funded by The Nature Conservancy, the Australian Government Department of the Environment and Water Resources, and the Poverty Reduction and Environment Management Program at Vrije Universiteit in Amsterdam] AT

Better local governance. Marine protected areas need local communities just as local communities need marine protected areas. In all four study sites, new governance mechanisms were established for the management of the marine protected area, and all four involve communities in management decision-making. This made the marine protected areas more responsive to community needs, gave the communities a more united voice, and frequently reduced conflict within the communities and with neighboring communities. The marine protected area management committees also serve as forums for addressing other community issues. The overall result is better local governance, especially for the management of marine resources.

## A2 Poverty DA

### Fishing Turn

#### WE control uniqueness - Overfishing is unsustainable in the status quo – collapse comes within years and causes large-scale poverty and fish wars.

INIR 12 [INIR News, a service of the UN Office for the Coordination of Humanitarian Affairs. “KENYA: Vanishing fish income forces livelihood switch/correction 6/11/12. <http://www.irinnews.org/report/95617/kenya-vanishing-fish-income-forces-livelihood-switch-correction>] AJ

Experts say rising population and overfishing are deepening poverty for millions of residents around Lake Victoria, the world's second largest fresh water lake. "Population explosion around the lake means many people turn to the lake and also destroy the environment around it, and in just a matter of years these people will experience poverty and hunger on a large scale," warned Charles Mboya, a fisheries lecturer at Western Kenya's Maseno University. "International and local demand for fish and its products is on the increase against a backdrop of reducing fish stocks, which might lead to a vicious struggle for it. We might witness fish wars soon," he said. The ministry notes that cross-border fish and trade conflict is one of the industry's challenges; an estimated 3.5 million people depend on the lake for their livelihood, either directly or indirectly in Kenya, Tanzania and Uganda, the three countries that share the lake (Kenya’s share of the shoreline is 6 percent). In 2009 a diplomatic row broke out between Kenya and Uganda over fishing rights on the tiny disputed island of Migingo, which is near a rich breeding ground for Nile perch. In addition to overfishing, the effects of climate change - including prolonged droughts and increased lake salinity - are also contributing to the reduction in fish stocks. "The biggest threat to Lake Victoria is the unsustainable use of its waters and the resources in it; excessive fishing devoid of any measures to replenish what is being used has seen fish diminish very fast, and particularly Nile perch," said Mboya.

#### Turn – MPAs increase fishing catches

Leisher 7 [(Craig Leisher, Pieter van Beukering, Lea M. Scherl) “Nature’s Investment Bank: How Marine Protected Areas Contribute to Poverty Reduction” This study was funded by The Nature Conservancy, the Australian Government Department of the Environment and Water Resources, and the Poverty Reduction and Environment Management Program at Vrije Universiteit in Amsterdam] AT

Improved fish catches. Fish are now “spilling over” from the no-fishing zones of the four marine protected areas, and improved fish catches contributed greatly to poverty reduction at three of these sites. People in Navakavu fish just outside the marine protected area, and 80% of the people there say fish catches are better than before the marine protected area was established. The spillover effect is also strong in Apo Island but slightly less so in Bunaken. It is present as well in the Arnavons but with minimal impact. These findings support the increasingly well-documented perception of spillover effects from marine protected area s.

### Tourism

#### Turn – the plan increases tourism which reduces poverty

Leisher 7 [(Craig Leisher, Pieter van Beukering, Lea M. Scherl) “Nature’s Investment Bank: How protected areas contribute to poverty reduction” This study was funded by The Nature Conservancy, the Australian Government Department of the Environment and Water Resources, and the Poverty Reduction and Environment Management Program at Vrije Universiteit in Amsterdam] AT

New jobs mostly in tourism. The marine protected areas’ greatest boost to household incomes comes from new jobs, especially in tourism. In Bunaken and Apo Island, those who switched to a new occupation in the tourist industry earn approximately twice as much as before. Some of the people who switched were fishers originally: 16% in Bunaken and 52% in Apo Island. In both locations, tourism training for local people was done by private-sector tourism operators. A number of new alternative livelihoods promoted by the marine protected area authorities proved unsustainable, however. Seaweed farming and deep-sea grouper fishing in the Arnavons were both hit by, among other things, dropping commodity prices at the local level. Building clay stoves and making coconut charcoal in Bunaken were hurt by the rising cost of inputs, and mat weaving in Apo Island was hampered by the high cost of inputs and lower quality as compared to competitors. At least four of these activities produced income for several years before becoming financially unrewarding. One lesson learned is that changes in the price of inputs or outputs can quickly move an alternative income generating activity from success to failure. This suggests that most alternative income generating activities are better suited for offsetting income initially lost due to establishment of no-fishing areas rather than as long-term tools to improve incomes or move people away from fishing. It is the larger, capital-intensive investments in tourism that lead to long-term gains in non-fishing income.

## Solvency Frontlines

### A2 Solvency indicts

#### Aff is way ahead on solvency – the lit uses conservative estimates and individual studies are too narrow and short-term.

Selig and Bruno 10 [Selig, Elizabeth R., and John F. Bruno. "A global analysis of the effectiveness of marine protected areas in preventing coral loss." PLoS One 5.2 (2010): e9278] AJ

Several recent studies of individual reefs or groups of reefs at broader scales have failed to find a positive effect of MPA on coral cover [7], [15], [16], [17]. Indeed, previous research indicates that there can be substantial reef-to-reef heterogeneity at local scales [42], [43], which may make it difficult to detect an effect of protection. Relatively small sample sizes in some of these studies may have meant that there was too little power to detect positive effects on coral cover. Comparatively small annual effects and the short duration of most single MPA versus non-MPA comparisons may also have complicated efforts to find an MPA effect. Although we also found relatively subtle differences between the annual coral cover rates between MPA and non-MPAs area, the cumulative benefits over time could be quite substantial. For example, over 30 years, if coral reefs in the Indo-Pacific continued to decline at approximately 0.4% per year as they did in 2005 (Fig. 3), hypothetically an additional 12% coral cover would be lost whereas coral cover on protected reefs could remain relatively unchanged. Our results may even be a conservative estimate of MPA benefits because many tropical MPAs have poor enforcement of their regulations [44] and most MPAs have only recently been established [45]. Some of the reefs we categorized as being in MPAs are probably essentially unprotected. Levels of enforcement are rarely quantified or reported, so we could not exclude poorly managed MPAs from our analyses or include the degree of enforcement as a covariate in our statistical models. Almost 60% of the surveys in our analysis were from MPAs that were less than 15 years old (Figs. 4C and 4D). Since benefits may increase with MPA age, the general benefit of MPAs could be greater than our estimates. In addition, only 13.4% of reefs are currently protected in non-extractive or multi-use MPAs and only 1.4% are in no-take reserves [45]. Protecting a greater percentage of reefs could lead not only to increased coral cover, but also to positive, synergistic effects of having more connected populations protected. Regardless, assessing the capacity of the current MPA network to improve coral reef condition is important for galvanizing future efforts to tighten enforcement and expand the overall area of protected reefs.

### A2 Impact Unpredictable

#### Even if effects are unpredictable we can still act

Agardy 3 [(TUNDI AGARDY, Sound Seas; PETER BRIDGEWATER, UNESCO Man and the Biosphere Program; MICHAEL P. CROSBY, National Oceanic and Atmospheric Administration; JON DAY, Great Barrier Reef Marine Park Authority; PAUL K. DAYTON, Scripps Institution of Oceanography; RICHARD KENCHINGTON, Maritime Policy Centre, University of Wollongong; DAN LAFFOLEY, English Nature, Peterborough; PATRICK McCONNEY, Caribbean Conservation Association; PETER A. MURRAY, Organization of Eastern Caribbean States, Environment and Sustainable Development Unit, Castries, Saint Lucia; JOHN E. PARKS, Biological Resources Program, World Resources Institute, Washington; and LELEI PEAU, Department of Commerce, Government of American Samoa, Pago Pago, American Samoa, USA) “Dangerous targets? Unresolved issues and ideological clashes around marine protected areas” AQUATIC CONSERVATION: MARINE AND FRESHWATER ECOSYSTEMS, Aquatic Conserv: Mar. Freshw. Ecosyst Jan 12] AT

A positive aspect of this debate is that new paradigms and approaches are emerging that provide MPA planners, scientists, and decision makers with guidance on how to proceed in the face of scientific uncertainty. For example, the US non-governmental organization Environmental Defense has proposed utilizing the statistical uncertainty of biomass and fishing mortality to determine no-take MPA size (Kripke and Fujita, 1999). Their approach is to ensure that at least the difference between the estimated and actual remaining biomass levels of a commercially harvested species is protected within the marine reserve habitat (see Table 1). However, few if any marine ecosystems are well enough understood (in terms of ecological or socio-economic variables) to allow accurate predictions (at a statistical level of significance even approaching 95% certainty) to be made about the quantitative outcomes of any management action, whether it is over a season, or over 5, 10 or 50 years. Indeed, none of the changes now seen in New Zealand’s no-take MPAs (Towns and Ballantine, 1993; Babcock et al., 1999; Kelly et al., 2000; Willis et al., 2000) were or could be predicted at the outset of their program. What is known is that spatial management, including restrictions on certain forms of destructive fishing and habitat alteration, have a high probability of improving ecosystem health and productivity } not just inside the boundaries of areas specified as no- take, but surrounding areas as well. However, the minimum proportion of an ecosystem, and specific protection levels, that must be implemented to derive these benefits is far from certain (as previous section on 20% minimum areas for no-take MPAs illustrated). This is not to say that we do not currently know enough to take strong action now. Greater use of well-designed and managed MPAs will undoubtedly benefit coastal and marine ecosystems, and their human components, if they are designed to be flexible and adaptive. In the tradition of true adaptive management, we can and should use MPAs to derive better information about effective design criteria, including minimum sizes and the extent to which some areas within MPAs should be deemed off-limits to extractive uses, i.e. no-take areas (Agardy, 1999b). In fact, without setting up such natural experiments, we will likely never know how effective we can be in marine resource management and conservation (Parma et al., 1998).

### A2 Area is too large/costly

#### Not necessary – only enforcement in a few key areas will affect biodiversity.

Richardson et al 09 [Anthony Richardson (School of Physical Sciences, University of Queensland) et al. "Pelagic protected areas: the missing dimension in ocean conservation." Trends in ecology & evolution 24.7 (2009): 360-369] AJ

Even where pelagic MPAs are recognized as a poten- tially useful tool, the high mobility of pelagic species leads to the common perception that the area required for ad- equate protection is so large that socioeconomic costs of closure would be prohibitive [1,43]. Although a politically important criticism, as it highlights the potential impact of closed areas on fisheries and other extractive industries such as oil and gas, there is substantial evidence to the contrary. As discussed above, protection can be directed to a few critical areas, such that the area required to protect many pelagic species and processes represents only a small proportion of the total seascape and is comparable to the proportion of area required in near-shore or terrestrial systems [29,44,45]. For example, Alpine and Hobday [45] show that it would require just 13% of the pelagic area off eastern Australia to protect 20% of the annual distribution of 40 important pelagic species and major physical processes such frontal systems and upwelling areas. Additionally, extractive industries in the pelagic ocean tend to target small areas of high productivity, such that total area protected and financial impact are not likely to be well correlated. It is, however, possible to explicitly minimize the impact that pelagic MPAs have on industries such as fishing, by considering the spatial and temporal distribution of their effort and income during the design process [45].

### A2 Can’t protect mobile species

#### First, aff internal links are about stationary species like sea urchins and coral.

#### Also, it’s still effective – mobile species use key sites for reproduction and foraging.

Richardson et al 09 [Anthony Richardson (School of Physical Sciences, University of Queensland) et al. "Pelagic protected areas: the missing dimension in ocean conservation." Trends in ecology & evolution 24.7 (2009): 360-369] AJ

Although the protection of far-ranging species presents a major challenge for spatial management, there are good reasons to believe MPAs can be effective tools for the conservation of many pelagic species. Species are not equally vulnerable over their entire range. Often they exhibit increased vulnerability in a small number of demo- graphically critical areas, such as breeding or foraging areas [30] or migration routes [31]. In other cases, there is only limited overlap between the range of a species and that of serious threatening processes [32,33]. In just the same way as small protected areas help conserve migratory bird species [34], MPAs encompassing critical habitat, or in places that will minimize area-specific threats, have the potential to dramatically reduce overall mortality even though they might protect only a tiny proportion of a species’s range. For example, Hyrenbach et al. [35] report that relatively small MPAs off the coast of California could effectively protect the foraging grounds, and substantially reduce overall mortality, of the black- footed albatross, a species that breeds 4500 km away. Rapid advances in satellite tagging technology have improved our ability to determine the location of these critical areas [24,31,33,36]. There have also been similarly large improvements in our ability to model and map the distribution of threats in the open ocean [37,38].

### A2 No enforcement

#### Information sharing and new networks like VMS are widely used and solve.

Richardson et al 09 [Anthony Richardson (School of Physical Sciences, University of Queensland) et al. "Pelagic protected areas: the missing dimension in ocean conservation." Trends in ecology & evolution 24.7 (2009): 360-369] AJ

Regardless of the legal support for protected areas, the pernicious influence of illegal, unreported and unregulated (IUU) fishing in the high seas and national waters of both developing and developed countries remains a major challenge for pelagic MPAs. In national waters, the pro- blem hinges on a lack of technical capacity to monitor remote vessel activities and enforce MPA violations. New information-sharing networks such as the voluntary International Monitoring, Surveillance and Control Net- work of enforcement professionals (http://www.imcsne- t.org) and improved technical tools (e.g. remote sensing, synthetic-aperture radar and vessel-monitoring systems [VMS]) provide hope that these challenges will soon be overcome. As well as assisting enforcement, VMS can aid compliance by including boundaries of pelagic MPAs and issuing automatic warnings to vessels when these bound- aries are approached. VMS technology is currently used successfully in many fisheries, such as in the Southern Ocean to monitor exploitation of distant stocks of Patago- nian toothfish. Because of the real potential to detect violations remotely, ensuring widespread compliance with spatial restrictions might be easier than catch or gear restrictions [29].