

# An Estimation of Compliance of the Fisheries of the USA with Article 7 (Fisheries Management) of the UN Code of Conduct for Responsible Fishing

by

Marcelo Vasconcellos, Daniela Kalikoski and Tony Pitcher

---

This evaluation of compliance with Article 7 (Fishery Management) of the UN Code of Conduct for Responsible Fishing (FAO 1995) is a 'living document' and may change with time. It is one of 53 such country evaluations covering the top 96% of the world fish catch. Using a wide range of cited source material, the document represents the best attempt by the authors at presenting a fair and objective evaluation of compliance using 44 questions derived from the Code. Questions are divided into six evaluation fields, (Management Objectives; Framework (data & procedures); Precautionary Approach; Stocks, Fleets and Gear; Social and Economic factors, and Monitoring, Control and Surveillance): the derivation of the 44 questions is described in Pitcher (1999). The first three fields cover intentions of a country's legislation to adhere to the Code; while the last three evaluation fields are intended to rate actual performance. Full details of the methods are published in Pitcher, Kalikoski and Pramod (2006). This evaluation has been subjected to several internal cross-checks and, where stated, has been validated by experts familiar with the country concerned. Uncertainty in assigning each score is shown explicitly. However, the authors are aware that omissions and errors of interpretation may still remain for some countries. An open protocol has therefore been adopted for all country compliance evaluations, and the team remains open at any time to comments, corrections or adjustments. Updated versions are made available online as necessary (<http://ftp.fisheries.ubc.ca/CodeConduct>).

FAO (1995) Code of Conduct for Responsible Fisheries. FAO, Rome, 41pp.

Pitcher, T.J. (1999) Rapfish, A Rapid Appraisal Technique For Fisheries, And Its Application To The Code Of Conduct For Responsible Fisheries. FAO Fisheries Circular No. 947: 47pp.

Pitcher, T.J., Kalikoski, D. and Pramod, G. (eds) (2006) Evaluations of Compliance with the UN Code of Conduct for Responsible Fisheries. Fisheries Centre Research Reports 14(2).

---

*Copy edited by Janice Doyle*

## General

Validated by Ray Hilborn (USA)

Ranked 5th in world catch 1999	4,690,860	tonnes (FAO)	
In own EEZ	3,642,300	77.6% (SAU)	*1,2078,472 km <sup>2</sup> = 0.3 t/km <sup>2</sup>
In others' EEZs	694,447	14.8% (SAU)	(Canada, Kiribati, France, Russia)
On High Seas	354,113	7.5% (SAU)	

Other countries estimated catch in USA EEZ 240,393 tonnes, 7% of domestic catch (SAU); mainly Canada, Japan, Korea, Taiwan, China

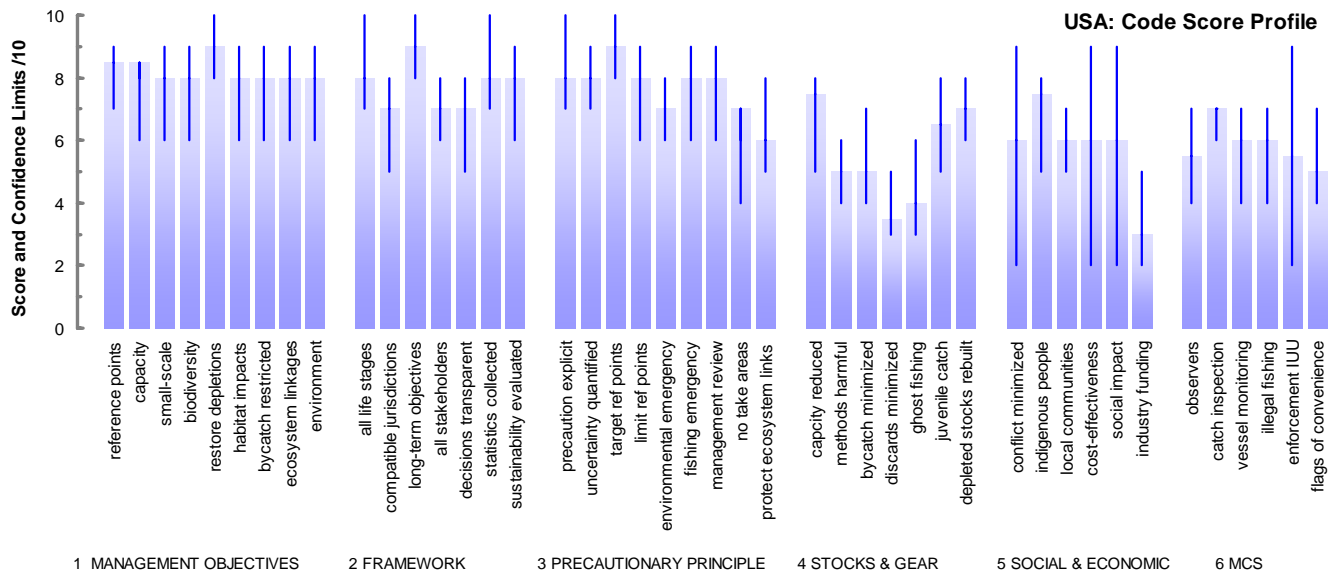
Scored 7.5/10 (range 6.9-8.0), ranked 17/145 in the 2004 corruption perception index (Transparency International 2004).

Fishery management quality index is 4/6 (McWhinnie 2004).

Harrington *et al.* (2005) estimate 28% for the USA overall.

International Treaties score = 78% of maximum possible (from SAU data)

Note: Hawaii and other Pacific Islands in USA overseas EEZ are included\*



Note: Scores for Q6.4 and Q6.6 have been flipped in the above figure to show fisheries compliance

## Field 1: Management Objectives

### 1. Are formal reference points for the fish stocks identified using best science available?

To a considerable extent = 8.5

Score Confidence Range = 7 - 9

According to FAO (2003), “management plans contain stock specific reference points. Target reference points have been established for many of the stocks, including the Northeast groundfish, Pacific Coast groundfish, Alaska groundfish, Alaska crab, Atlantic crab, Atlantic billfish and Atlantic tuna. Also, fishing mortality rate thresholds are used in the absence of biomass-based ones”.

The North Pacific Fishery Management Council prescribes in the Fishery Management Plan for the Bering Sea/Aleutian Island Groundfish the maximum allowable fishing rate through a set of six tiers of reference points to be used based on the level of information availability. Different determinants of catch levels are recognized: the maximum sustainable yield, the equilibrium yield (catch level that maintains on average stock at same abundance level), level of over-fishing, and the optimum yield.

NMFS reports annually the stock status for major species contained in Federal Fishery Management Plans, using for that two reference points: if over-fishing is occurring, i.e., if the current fishing mortality rate is above a pre-defined threshold; and if the stock is over-fished, i.e., if the biomass level is below a pre-defined threshold. The stock of pollock in the Bering Sea and Aleutian Islands is considered within safe biological levels; the stocks of Pacific cod in the Bering Sea/Aleutian Islands/Gulf of Alaska is considered within safe biological levels while the status of the stock in the west coast (PFMC) is unknown; the menhaden fisheries are managed by individual states with intrastate coordination handled through the Atlantic States Marine Fisheries Commission and the Gulf States Marine Fisheries Commission. Both Atlantic and Gulf menhaden stocks were considered fully utilized (in the report Our Living Oceans of 1995 – more recent estimates described in FAO (in press) confirms the fully-utilized status of Atlantic menhaden and Gulf Menhaden). The stock of Pacific hake or Pacific whiting is considered over-fished and under over-fishing, and a rebuilding program is under development.

### 2. Is present fleet capacity calculated and are there plans to reduce it?

Score: 7.5

Score Range: 6 - 8

A preliminary assessment of fishing capacity has commenced (FAO, 2003). The assessment of the fishing capacity and over-capacity of the US fisheries is expected to be finished by 2005-2006. A report prepared by NOAA Fisheries indicated that more than half of all the most important federally-managed fisheries exhibited indications of over-capacity. Among the main fisheries identified in this study, only the groundfish fisheries of Gulf of Alaska, Bering Sea/Aleutian Islands show qualitative evidence of over-capacity (NMFS, 2004). NOAA Fisheries recently issued a National Plan of Action for the Management of Fishing Capacity (NPOA/Capacity), consistent with an international obligation to the Food and Agriculture Organization. Over the long term, the NPOA/Capacity proposes the elimination or significant reduction of over-capacity in 25% of federally-managed fisheries by 2009, and in a substantial majority of fisheries in the following decade (NMFS, 2004).

### **3. Are small scale fishers considered in plan?**

Score: 8

Score Range: 6 - 9

According to FAO (2003), US fisheries management plans provide for stakeholders' participation in determining management decisions and address the interests of small-scale fishers. Regional Fishery Management Councils do include small-scale fisheries groups.

### **4. Impacts of fishery on biodiversity allowed for in plan?**

Score: 8

Score Range: 6 - 9

According to FAO (2003) fisheries management plans address the biodiversity of aquatic habitats and ecosystems, including the identification of essential fish habitats. Plans also address the protection of endangered species. In terms of US actions on IPOAs, the assessment of the status of shark stocks has been conducted and there is already a shark plan in place. "There is a national plan of action in place to reduce the incidental catches of seabirds, with mitigation measures including observer coverage, Tori streamers and other bird scaring devices, use of fully thawed baits, strategic dumping of offal, removal of hooks from discarded offal and mandatory handling and release requirements for birds that come aboard alive" (FAO, 2003).

Under the Endangered Species Act and Marine Mammal Protection Act, NMFS is required to develop action plans that mitigate the impacts of fisheries on endangered species and lead to the recovery of the species status (Buck, 1995). "Much of NMFS's recent ESA activities involve its duty to develop strategies for the conservation and survival of endangered and threatened species. In the area of marine mammals, the ESA and the Marine Mammal Protection Act (MMPA) offer similar management authority for endangered and threatened marine mammal species or stocks" (Buck, 1995).

### **5. Does the management plan aim to restore depleted stocks in this fishery?**

Score: 9

Score Range: 8 - 10

In general management plans contain measures to ensure the level of fishing is commensurate with the state of fisheries resources and measures to allow depleted stocks to recover (FAO, 2003).

Under the Endangered Species Act "once a species is listed, recovery plans are prepared which identify mitigation measures to be initiated to improve the species' status" (Buck,1995).

The North Pacific Fishery Management Council recently states in the Fishery Management Plan for the Bering Sea/Aleutian Island Groundfish that "in such circumstances when stocks have declined to a level below that capable of producing MSY, management measures promote rebuilding the stocks. In considering the rate of rebuilding, factors other than biological considerations have been taken into account".

Of the main stocks considered in this analysis, the Pacific hake is considered over-fished. According to the latest status report made available in the NMFS website, a rebuilding program is under development for these species. Pacific rockfish are also recognized as heavily depleted and management aims to rebuild them. Pacific halibut are slightly over-fished and management aims explicitly to rebuild if they pass target reference points of depletion.

**6. Are human impacts (pollution, waste) on the fishery habitat identified?**

Score: 8

Score Range: 6 - 9

There are many examples of attempts to account for human impacts on fisheries habitat in the legislation (Buck, 1995). The Anadromous Fish Conservation Act authorizes the Secretary of Commerce, along with the Secretary of the Interior, or both, to enter into cooperative agreements to protect anadromous and Great Lakes fishery resources. Pursuant to the agreements authorized under the Act, the Secretary may: (1) conduct investigations, engineering and biological surveys, and research; (2) carry out stream clearance activities; (3) undertake actions to facilitate the fishery resources and their free migration; (4) use fish hatcheries to accomplish the purposes of this Act; (5) study and make recommendations regarding the development and management of streams and other bodies of water consistent with the intent of the Act; (6) acquire lands or interest therein; (7) accept donations to be used for acquiring or managing lands or interests therein; and (8) administer such lands or interest therein in a manner consistent with the intent of this Act. Buck (1995): under the Endangered Species, concurrent with the listing decision of endangered species, critical habitat believed necessary for the continued survival of species is designated.

Title II of the Marine Protection, Research, and Sanctuaries Act (33 U.S.C. 1441-1445; Title II of Pub. L. 92-532, as amended) authorizes research and monitoring related to ocean dumping as well as research on possible effects of pollution, over-fishing, and human-induced changes in the ocean system. The Act provides for long-range research on the effects of human-induced changes to the marine environment and authorizes research and demonstration activities related to phasing out sewage and industrial waste dumping in the marine environment. The Department of Commerce, through NOM and NMFS, conducts comprehensive and continued monitoring and research programs on the possible long-range effects of pollution, over-fishing, and human-induced changes in ocean ecosystems, including the scientific assessment of natural resource damages from petroleum spills. NOAA also monitors the environmental conditions at certain dumping sites. The Act requires the Department of Commerce to present an annual report to Congress on these monitoring and research activities.

One of the most serious human impacts on coral reefs in the Northwestern Hawaiian Islands is marine debris, including fishing nets and gears from distant water fleets. NMFS is leading a four-year effort starting in 2001 to remove all major accumulated debris from reefs (NOAA Fisheries Coral Reef Conservation Program). NMFS (1999) has also carried out the identification of essential fish habitat and the non-fishing adverse impacts on? them for amendment to the Fishery Management Plan for the Groundfish Fishery of the Bering Sea and Aleutian Islands Area; Fishery Management Plan for Groundfish of the Gulf of Alaska; Fishery Management Plan for the King and Tanner crab fisheries in the BS/AI; Fishery Management Plan for scallop fisheries off Alaska; and Fishery Management Plan for salmon fisheries in EEZ off the coast of Alaska.

**7. Is fishing gear mandated by the management plan to avoid by-catch of non-target species, environmental and habitat damage?**

Score: 8

Score Range: 6 - 9

FAO (2003) identifies that management plans address selectivity of fishing gear and prohibit destructive fishing methods and practices. To limit by-catch and discards, the US requires, in addition to gear modification such as mesh size, other measures such as limits on fishing seasons, area closures, etc., the use of TED in all shrimp fisheries in which sea turtle interactions occur, the use of BRDs in the Gulf of Mexico shrimp fisheries, halibut

by-catch reduction measures in Alaska Pollock fisheries and blue-dyed bait to reduce seabird by-catch (FAO, 2003).

**8. Are ecosystem linkages with this fishery made explicit in the management plan?**

Score: 8

Score Range: 6 - 9

“Since 1995, the North Pacific Fishery Management Councils (NPFMC) Groundfish Plan Teams have prepared a separate Ecosystem Considerations section to the annual SAFE report. The intent of the Ecosystems Considerations section is to provide the Council with information about the effects of fishing from an ecosystem perspective, and the effects of environmental change on fish stocks” (Livingston, 2002). The Ecosystems Considerations chapter presents trends in ecosystem indicators, including descriptors of the status of the physical environment, habitat, zooplankton, chlorophyll and nutrients, forage fish, biomass and recruitment of harvested species, benthic communities and non-targeted fish species, marine mammals, seabirds, the by-catch and discard of target and non-target species, areas closed to bottom trawling, and effort spatial distribution of the main fisheries.

The North Pacific Fishery Management Council recognizes in the Fishery Management Plan for the Bering Sea/Aleutian Islands Groundfish the importance of understanding the complex relations among species and between the biota and the environment of the ecosystem being managed. However, it also recognizes that such understanding is still incomplete – marine ecosystem processes are beginning to be simulated and studied with quantitative models. It concludes that until new concepts and theories deriving from these studies supercede the old (single-species stock assessment) approach, the latter can still serve as a useful basis for deriving management decisions, “providing their limited and underlying assumptions are recognized and evaluated with the best available information”.

**9. Are environmental influences on this fishery made explicit in the management plan?**

Score: 8

Score Range: 6 - 9

The state of the marine environment is routinely monitored (FAO, 2003). The extensiveness of environmental monitoring varies but all NOAA Fisheries regions maintain physical oceanographic databases. There is no nation-wide oceanographic monitoring program. “To address key data gaps, some measures have been taken such as the release of new fisheries research vessels, development of stock assessment improvement plan and fellowships, fisheries and environment and fish and climate change initiative. The constraints faced are that research vessels spend insufficient days at sea, there are too few trained stock assessment scientists and insufficient observed coverage, and the lack of nation-wide marine environment monitoring programme limits the ability to make decadal forecasts” (FAO, 2003).

Under the Interjurisdictional Fisheries Act of 1986 funds were allocated for cost-sharing programs with States experiencing a commercial fishery failure or a serious disruption from a natural disaster. Grants to commercial fishermen for uninsured losses from specified natural disasters were authorized at \$65 million during FY92 under §4107(d). During 1994, \$12 million of those funds were designated for Northwest salmon disaster relief. This disaster relief will fund three programs: (1) a vessel permit buyout program (Washington Department of Fish and Wildlife); (2) a habitat restoration jobs program (Natural Resources Conservation Service of the U.S. Department of Agriculture); and (3) a data collection jobs program (Pacific States Marine Fisheries Commission). In addition to these disaster funds, the Dire Emergency Supplemental Act of 1992 (Pub. L. 102-368) appropriated \$8.5 million for disaster related work, of which \$5.1 million was used in 1993 for shellfish restoration activities to mitigate hurricane damage in California. During 1994, a disaster was also declared in the New England groundfish fishery and \$30 million was appropriated for relief efforts in that area.

## **Field 2: Framework (data & procedures)**

### **1. Are total & complete removals from this stock over the whole stock area and over whole life cycle accounted for in assessment?**

Score: 8

Score Range: 7 - 10

Complete and verified statistics are obtained on catch and fishing effort for those stocks under the US fishery management plans (FAO, 2003).

### **2. Are management measures compatible with those of other jurisdictions concerned with this stock?**

Score: 7

Score Range: 5 - 8

The Inter-jurisdictional Fisheries Act of 1986 (16 U.S.C. 4101-4107; Pub. L. 99-659, as amended) authorizes the “Secretary of Commerce to apportion money to the States to develop research programs to enhance the management of interjurisdictional fisheries.” “For general activities under the Act, \$3.156 million were authorized in 1994, with an additional \$3.7 million transferred to fund activities conducted under the authority of the Atlantic Coastal Fisheries Cooperative Management Act. With the funds for general activities under the Act, States have studied and monitored interjurisdictional species” (Buck, 1995). On the other hand, the Pacific salmon management in the USA has consistently failed to take interceptions of stocks of Canadian origin into account both in Alaska and in Washington State and the salmon fishery has been the subject of political football by both countries. On other hand, Pacific stocks of halibut, herring and hake have a good record of cooperative management between the US and Canada.

### **3. Does the management plan have clearly stated long-term objectives?**

Score: 9

Score Range: 8 -10

It can be observed that “42 marine fisheries management plans have been developed and implemented in the USA” (FAO, 2003).

Buck (1995) states that “under provisions of the Magnuson Fishery Conservation and Management Act, eight Regional Fishery Management Councils were established for the New England, Mid-Atlantic, South Atlantic, Caribbean, Gulf of Mexico, Pacific, Western Pacific, and North Pacific regions. Regulations relating to Regional Council activities and operations are published in 50 *C.F.R.* Parts 601 and 605. The eight Councils prepare fishery management plans (FMPs) for those fisheries, both commercial and recreational, which they determine to require active Federal management. Guidelines for preparation of FMPs in conformance with national standards (§1851 of the MFCMA) are published in 50 *C.F.R.* Part 602. An environmental assessment or environmental impact statement is prepared for every FMP submitted. After public hearings on these plans, revised FMPs and draft regulations are submitted to the Secretary of Commerce for approval. Regulations are published in the *Federal Register* to implement approved plans. Completed plans may be amended and revised through similar procedures. As of January 1, 1995, these Councils had implemented 34 FMPs for various fish and shellfish resources, with 11 additional plans in various stages of development. Some plans are created for individual or a few closely related species (*e.g.*, FMPs for red drum by the South Atlantic Council, northern anchovy by the Pacific Council, and for shrimp by the Gulf of Mexico Council). Others are developed for larger species assemblages inhabiting similar habitat (*e.g.*, FMPs for Gulf of Alaska groundfish by the North Pacific Council and for reef fish by the Gulf of Mexico Council). Many of the implemented plans have undergone subsequent amendment (one has been amended more than 30 times), and three plans have been developed and implemented jointly by two or more Councils. In addition, Pub. L. 101-627 amended the MFCMA to give the Secretary of Commerce the responsibility for preparing FMPs for Atlantic highly migratory species, such as sharks, billfish, and tuna. Regulations implementing individual FMPs are published in 50 *C.F.R.* Parts 625 through 685.”

The North Pacific Fishery Management Council has defined in the Fishery Management Plan for the Bering Sea/Aleutian Island Groundfish a set of objectives, which include: 1) promote conservation while providing for optimum yield from the region's groundfish resources; 2) promote, where possible, efficient use of the fishery resources but not solely for economic purposes; 3) promote fair and equitable allocation of identified available resources in a manner that no particular group acquires an excessive share of the privileges; 4) base the plan on the best scientific information available.

**4. Are all the stakeholders in this fishery resource identified and considered?**

Score: 7

Score Range: 6 - 8

The Regional Management Councils include most of the obvious stakeholders including native peoples and environmental groups. However, they have no decision-making power and NMFS reserves the right to take decisions advised by the councils, and there is some evidence of decision-making being influenced by lobby groups' interests under some US government regimes.

**5. Is data, management process and decision-making open and transparent, including any international aspects?**

Score: 7

Score Range: 5 - 8

Yes. Most fishery assessments of status in relation to both target and limit reference points, and reports of discussions in the Councils, are freely available on the web. However, the actual decision-making at the NMFS deputy level is less transparent,

**6. Are timely, complete and reliable statistics collected and verified?**

Score: 8

Score Range: 7 - 10

"Complete annual reliable statistics are obtained on catch and fishing effort for those stocks under the US fishery management plans" (FAO, 2003).

**7. Are social, economic and institutional factors related to sustainability evaluated with data?**

Score: 8

Score Range: 6 - 9

FAO (2003): "...as fisheries management evolves to ecosystem-based fisheries management significant increases in stock assessment, ecological research and resource economics personnel will be required, i.e., economists, social scientists, ecological researchers and stock assessment personnel."

**Field 3: Precautionary Approach**

**1. Is precaution explicitly enshrined in legislation, and is applied to management of this fishery stock?**

Score: 8

Score Range: 7 -10

According to FAO (2003), "the precautionary approach is being applied through reduced quotas in case of uncertainty and prohibition on landing rare species". For example, the North Pacific Fishery Management Council defines in the Fishery Management Plan for the Bering Sea/Aleutian Island Groundfish that "management measures should contain a margin of safety in recommending allowable biological catches when the quality of information concerning the resource and ecosystem is questionable".

**2. Is uncertainty, including lack of appropriate information, quantified and used to restrain fishing that might otherwise occur?**

Score: 8

Score Range: 7 -9

Yes. Most fishery assessments in the USA are highly quantitative and explicitly include the evaluation of uncertainty using Monte Carlo and sophisticated Bayesian techniques. Advice is generally presented to Councils in the form of explicit decision matrices, with estimated risks attached. On the other hand, a large number of less important stocks are evaluated in much less rigorous fashion on account of lack of survey data.

**3. Are stock-specific target reference points estimated and employed?**

Score: 9

Score Range: 8 - 10

FAO (2003) shows that management plans contain stock-specific reference points. “Target reference points have been established for many of the stocks, including the Northeast groundfish, Pacific Coast groundfish, Alaska groundfish, Alaska crab, Atlantic crab, Atlantic billfish and Atlantic tuna. Also, fishing mortality rate thresholds are used in the absence of biomass-based ones ... These target specific reference points have been in some cases exceeded and in some cases approached. Where exceeded actions have been taken such as quota reductions, limitations on fishing days at sea, trip limits, time/area closures, limited access and gear limitations” (FAO, 2003).

**4. Are stock-specific limit reference points estimated and employed?**

Score: 8

Score Range: 6 -9

Limit reference points are included as routine in the assessment of the status of most important stocks. In some cases (Pacific rockfish, for example), fisheries have been closed when they are triggered.

**5. Are there viable contingency plans to restrict fishing in the event of an environmental emergency?**

Score: 7

Score Range: 6 -8

Yes: subject usually to some inter-agency communication issues. For example fisheries have been closed because of endangered sea otters and sea lions, after major oil spills, and to cope with an outbreak of invading *Calurpa* algae in California.

**6. Are there viable contingency plans to restrict fishing in the event of an unforeseen emergency caused by excess fishing?**

Score: 8

Score Range: 6 - 9

Methods used to reduce capacity and to prevent excess fishing capacity include the application of Individual Transferable Quotas in four fisheries, increasingly restrictive limited entry, and vessel and permit buyouts (FAO, 2003).

**7. Are management instruments under continuous review?**

Score: 8

Score Range: 6 - 9

NMFS conducts annual reviews of stock status and management recommendations. According to FAO (2003), “reliable estimates have been obtained for 158 stock groups out of 203 that are Federally managed; they represent 78% of the total number of stocks important to American national fisheries.”

**8. Are no-take areas of sufficient size to work, established, policed and monitored as an insurance?**

Score: 7

Score Range: 5 - 7

According to the MPA listing prepared by Sea Around Us, the total marine area considered as MPAs in the US's EEZ (contiguous states, Alaska and Hawaii) sums to a total of 438,125 km<sup>2</sup>. With a total EEZ of 1,2078,472 km<sup>2</sup>, this means that about 3.7% of the EEZ under some type of protection. Of this total however, only 242 km<sup>2</sup>, or 0.1% can be considered no-take. Nevertheless, there have been significant large areas in the Bering Sea and New England that have been protected against bottom trawling and the score reflects these activities in managed fishery areas.

**9. Are plans in place to restrict fishing if species linked through the ecosystem to the target(s) of this fishery become threatened?**

Score: 6

Score Range: 5 - 8

Yes, partially,

**Field 4: Stocks, fleets and gear**

**1. Is excess fleet capacity being reduced?**

Score: 7.5

Score Range: 5 - 8

USA has had mixed success in implementing plans to reduce fishing capacity. Porter (2004) suggests that the Bering sea pollock fishery successfully reduced capacity by 10% by 1998; on the other hand, there has been no reduction in the Atlantic groundfish fishery. Examples of strategies used to reduce fishing capacity are described in NMFS (2004). They include:

- Strategies to limit entry, such as permit requirement, are recognized in the plan as one the simplest forms of management of fishing capacity. The Plan, however, recognizes the limitations of this strategy; one of the main limitations is that although this approach may restrict new entrants it does not constrain effort and investments by established participants. However, establishing some form of limited entry to a fishery is viewed as a way forward to control the excessive increase in fishing capacity. "Last year, the Gulf of Mexico Council approved a mandatory permit program in the shrimp fishery, paving the way for limited entry in one of the largest of the remaining purely "open access" federally managed fisheries."

- "Between 1990 to 1996, three IFQ [Individual Fishing Quotas – non-transferable] programs were established in federally managed fisheries: (1) the Surf Clam/Ocean Quahog IFQ (1990), (2) the South Atlantic wreckfish IFQ (1992), and (3) the Alaska halibut/sablefish IFQ (1995). In addition, a small IFQ had been created through Secretarial action pursuant to international agreement for five participants in the Atlantic purse seine fishery for bluefin tuna. Major reductions in participation and capacity have occurred in the surf clam/ocean quahog and South Atlantic wreckfish IFQs,17 and in the Alaska halibut/sablefish IFQ. On the other hand, the IFQ program for the purse seine fishery for Atlantic bluefin tuna has exhibited stability because it was established to effectively freeze U.S. participation of 5 quota holders. In the Atlantic bluefin tuna program, quota shares are transferable only among purse seine operators. Hence, the brief U.S. experience with four IFQs suggests that this form of management can be an effective way to manage capacity, with impacts on effort, investments and participation varying sharply according to the objectives and structure of the IFQ program."

- "Another type of exclusive quota program is a community quota. Special allocations to communities first appeared in western Alaska and were prompted by ongoing disputes over pollock allocations between onshore

and offshore interests. The North Pacific Fishery Management Council decided to allocate a share of eastern Bering Sea allocations to geographically and economically disadvantaged communities. These communities were physically adjacent to the resources, but in many cases their inhabitants fished salmon, herring and halibut rather than pollock. The Council's decision to give pollock allocations to these communities was explicitly intended to promote their economic development. This Community Development Quota (CDQ) program was established in 1992, including six groups formed from 56 communities, and they have the option of harvesting their share of the TAC or leasing it to other non-CDQ fishermen. The western Alaska CDQ program has by and large been successful in generating economic benefits for remotely located native Alaskan communities, and was not intended to reduce harvest capacity or participation in those fisheries. As a matter of fact, while many residents of western Alaska communities participated in the pre- CDQ fisheries as crew members, skippers, and even vessel owners, mainly in the salmon and herring fisheries, the overall level of harvesting capacity attributable to these communities was modest. In addition, CDQ groups are required in the western Alaskan program to reinvest most of the royalty revenues earned from the leasing of their quota shares to fishery-related projects. As a result, the western Alaska CDQ groups have probably not reduced overcapacity in the harvesting sector to any appreciable degree.”

- “[Cooperatives]: In the Bering Sea pollock fishery, the 1998 American Fisheries Act (AFA) allowed for the establishment of several distinct cooperatives for the shoreside, at-sea processor, and factory mothership fleet sectors. The same law also provided for a buyback of 9 Seattle-based at-sea processors. Harvest capacity in the Bering Sea pollock fishery has been substantially reduced by both the original AFA buyback and subsequent rationalization of operations. Based on late 2000 data, the Bering Sea pollock cooperatives included 129 eligible vessels, of which 31 (24 percent) sold their rights to participate in this fishery.”

- “Under section 312 (b) of the Magnuson-Stevens Conservation and Management Act NMFS has the authority to conduct a fishing capacity reduction program if funds are provided and it is determined that such program is necessary to prevent or end overfishing, rebuild stocks of fish, or achieve measurable or significant improvements in the conservations and management of the fishery. Under the authority of this section the Secretary may buy back vessels or fishing permits in order to obtain the maximum sustained reduction in fishing capacity at the least cost and in the minimum period of time” (information extracted from the Vessel and Permit Buyback Programs webpage, [www.nmfs.noass.gov/ocs/financial\\_services/buyback.htm](http://www.nmfs.noass.gov/ocs/financial_services/buyback.htm)).

On December 29, 2000, NMFS announced the implementation of the first stages of the fishing capacity reduction program for the Bering Sea/Aleutian Islands crab fisheries. “The first stage of the program limits vessel participation in the BSAI crab fisheries by requiring that vessels meet historic harvest qualifications.”(NMFS, Information Bulletin #00-106a, Sustainable Fisheries Division, December 29, 2000).

In addition, the “North Pacific Fishery Management Council has developed several programs to address overcapacity in the Alaskan fisheries. For most groundfish and crab species and for scallops, management programs limit the number of harvesting vessels that may be deployed off Alaska. In contrast, Halibut and fixed gear sablefish fisheries are managed under an Individual Fishing Quota (IFQ) program, which, rather than limiting harvesting vessels, grants Quota Share holders the privilege of harvesting a specified percentage of the Total Allowable Catch (TAC) each year” (Livingston, 2002).

The National Plan of Action for the Management of Fishing Capacity (NMFS, 2004) prescribes that “NOAA Fisheries will work cooperatively with the Councils to identify fisheries in need of capacity reduction and to develop measures to achieve those reductions. Programs to manage capacity will typically include (1) limited entry and permit management programs, (2) exclusive quota programs, and (3) publicly and privately funded buybacks of permits and/or vessels.”

**2. Are fishing methods known to be harmful to habitats, to create by-catch problems, or whose high fishing capacity is difficult to control, being phased out?**

Score: 5

Score Range: 4 - 6

In order to limit by-catch and discards, the US requires in addition to gear modification such as mesh size and other measures such as limits on fishing seasons, area closures, the use of TED in all shrimp fisheries in which sea turtle interactions occur, the use of BRDs in the Gulf of Mexico shrimp fisheries, halibut by-catch reduction measures in Alaska Pollock fisheries and blue-dyed bait to reduce seabird by-catch (FAO, 2003). In addition, according to Rothwell (2001), the US has prohibited driftnet fishing in Territorial Sea and High Seas driftnet fishing by national ships. However, there remain considerable by-catch issues and high fishing capacity is not being phased out.

### **3. Is by-catch of non-target species minimised?**

Score: 5

Score Range: 4 -7

Since the early 1990s, a number of by-catch/discard characterization programs have been initiated in US using partial observer coverage of selected fleet elements (FAO, 2003). As a result, considerable improvement has occurred in the documentation of levels and quantities of discards. The most comprehensive of these programs is the documentation of discarding practices in the Northeast Pacific in the EEZ off Alaska. A significant improvement has also occurred in the characterization of by-catch in the Gulf of Mexico and along the southeast coast of the United States. Observer programs are also being conducted off the Northeast coast as well as along the coasts of Oregon and Washington.

“There is a national plan of action in place to reduce the incidental catches of seabirds. Mitigation measures already applied include: observer coverage, Tori streamers and other bird scaring devices, use of fully thawed baits, strategic dumping of offal, removal of hooks from discarded offal and mandatory handling and release requirements for birds that come aboard alive” (FAO, 2003).

### **4. Are discards minimised?**

Score: 3.5

Score Range: 3 - 5

Kelleher (2004) cites examples of fisheries that previously made significant contributions to the global volume of discards but have introduced measures that have reduced unwanted by-catch. The fisheries include: the US Northwest Pacific groundfish fisheries, especially those under the management of the North Pacific Fisheries Management Council, that introduced measures such as area and seasonal closures, by-catch quotas and TACs and economic measures; the US Gulf of Mexico and Atlantic shrimp fisheries where by-catch reduction devices and TEDs are obligatory in certain areas; the US Atlantic pelagic longline fisheries which experienced a reduction in discards of sharks with the implementation of area and time closures. According to Kelleher (in press) one important positive aspect of the management of by-catch and discards in US fisheries is the existence of Fisheries Management Plans for most of the Federal fisheries. Kelleher (2004) also refers to the conclusion of Alverson (1998) that “in general discard levels in the US have declined over the past several years due to...new technologies and management measures...decline in stocks...increased retention of fish previously discarded”.

However, the US has still many fisheries with undesirably high discard rates, including the trawl and dredge fisheries of the Gulf of Maine and the Northeastern USA, the shrimp trawl fishery in the South Atlantic and reef fish fishery in the Gulf of Mexico. In the Pacific very high discard rates have occurred in the multispecies groundfish trawl fishery off Washington, Oregon and California. To some extent high discards have been caused by the introduction of restrictive quota systems where some species caught cannot legally be landed by the vessel in question. This has to some extent been mitigated by complex area and species quota regulations, but it is still a problem in the Pacific fisheries.

Information from the North Pacific Management Council webpage on by-catch [no-discard policy] “*Improved Retention/Improved Utilization* - In 1998, Groundfish FMP Amendments 49/49 were implemented, requiring 100% retention of all pollock and Pacific cod in all fisheries, regardless of gear type. This provided incentive for

fishermen to avoid catching these species if they were not targeted, and also required that they be retained for processing if they were caught. Alternative retention measures for other Bering Sea groundfish have recently been adopted by the Council for implementation in 2005, pending NOAA Fisheries approval.”

Kelleher (2004) gives an average US discards figure of 21.7%, or about 930,000 tonnes. A more recent study (Harrington *et al.*, 2005) makes a more accurate assessment of 28%, or or about 1.1 million tonnes.

**5. Is gear designed to minimize ghost fishing if lost?**

Score: 4

Score Range: 3 -6

There have been a number of studies of ghost fishing (Poon 2005), and some lobster and crab fisheries have adopted pot designs to minimize it. On the other hand, USA crab fisheries in the southern Atlantic coastal states have earned a notorious record with ghost fishing leading to a loss of over 10 million blue crabs each year in Louisiana. Brown *et al.* (2005) reports that, “The US National Marine Fisheries Service estimates that 17? 0.06 per cent of driftnets are lost each time they are set, resulting in 12 miles of net lost each night of the season and 639 miles of net lost in the North Pacific Ocean alone each year.”

There are, however, several mitigating programs. For example, in Washington State (US) the Northwest Straits Commission (NWSC) in conjunction with the Washington Department of Fish and Wildlife (WDFW) started a program to identify and remove derelict fishing gear in 2001 (Brown *et al.*, 2005).

**6. Is the fishing of juveniles and spawners restricted to safe levels?**

Score: 6.5

Score Range: 5 -8

In general, quotas estimated for assessed stocks take this factor into account.

**7. Are depleted stocks being rebuilt?**

Score: 7

Score Range: 6 - 8

FAO (2003) states that “rebuilding programs have been set for most overfished stocks and biomass has increased for many of the overfished stocks”.

According to the latest NMFS report on stock status “4 major stocks were declared fully rebuilt - *Georges Bank winter flounder* in the Northeast, *Atlantic blacktip shark*, and South Atlantic and Gulf of Mexico stocks of *yellowtail snapper*. Although some stocks remain overfished, the general biological trend in biomass of the nation’s stocks continues to be positive. In 2003, the nation’s fish stocks continued the progress begun in 1999 after SFA’s strengthened management tools were more fully implemented” (NMFS, 2003).

**Field 5: Social & Economic**

**1. Is the fishery managed so as to minimize conflict among different sectors?**

Score: 6

Score Range: 2 - 9

According to FAO (2003): “strong conflicts are reported between gear types operating in the coastal area. There are different mechanisms to resolve such conflicts”.

**2. Are Indigenous Peoples rights and needs being met?**

Score: 7.5

Score Range: 5-8

Constitutional and legislative rights have been implemented widely for native peoples in the US, and this has included access to traditionally-harvested marine resources, (including whales for the Makah of Washington State). However, there are still frequent legal and other conflicts between fishery management agencies and native peoples, probably because the traditional aboriginal aspiration to unfettered hunting is not compatible with the contemporary need for multiple access to the resources. In remote parts of Hawaii, some native groups practice traditional marine tenure almost unknown to the official management agency.

**3. Are the needs of local fishing communities being met? No (0); identified and partially met (1); almost completely met (2)**

Score: 6

Score Range: 5 -7

To some extent, through the local management Councils. In Alaska, local community quotas have proved a successful initiative.

**4. When a change to the management of the fishery are made, is its cost-effectiveness evaluated?**

Score: 6

Score Range: 2 - 9

The North Pacific Fishery Management Council states in the Fishery Management Plan for the Bering Sea/Aleutian Island Groundfish that “management measures, while promoting efficiency where practicable, are designed to avoid disruption of existing social and economic structures where fisheries appear to be operating in reasonable conformance with the Act and have evolved over a period of years as reflected in community characteristics, processing capability, fleet size and distribution”.

“The National Marine Fisheries Service (NMFS) prepares a Regulatory Impact Review (RIR), which includes an analysis of the economic effects of the preferred and alternative actions. One of the purposes of the RIR is to comply with the requirements of E.O. 12866, except for the periodic review of significant regulations. The RIR is intended to assist the Councils and NMFS in selecting the regulatory approach that maximizes net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach”(NOAA Fisheries, 2000).

**5. When a change to the management of the fishery is made, is its social impact evaluated?**

Score: 6

Score Range: 2 - 9

The National Marine Fisheries Service (NMFS) of the National Oceanic and Atmospheric Administration (NOAA) has provided operational guidance relative to social and community impacts to Regional Fishery Management Councils since 1991.

**6. Is funding for the research and the MCS programme obtained by cost recovery from the industry?**

Score: 3

Score Range: 2 -5

In the North Pacific the fishing industry bears the cost of the observer program (see item 6.1). But this is one of the few cost recovery programs in the US, and it is estimated that less than 5% of MCS overall in the USA is cost-recovered (Anon., pers. comm.). (In comparison, in NZ it is almost 100%, in Australia greater than 50%).

**Field 6: Monitoring, Control & Surveillance (MCS)**

**1. On a ten point scale, how effective is the observer scheme?**

Score: 5.5

Score Range: 4 -7

Information from the North Pacific Management Council webpage on Observer Program (url?): “At the core of the North Pacific monitoring system is a comprehensive, industry-funded, on-board observer program, coupled with requirements for total weight measurement of most fish harvested. Except for small vessels less than 60 feet and halibut vessels, all vessels fishing for groundfish in federal waters are required to carry observers, at their own expense, for at least a portion of their fishing time. The largest vessels, those over 125 feet, are generally required to carry observers 100% of the time, with multiple observers required on catcher/processors and in certain fisheries.” However, in the rest of the USA fishery observer coverage is much less good (Anon?, pers. comm.).

**2. On a ten point scale, how effective is the catch inspection scheme?**

Score: 7

Score Range: 6 -7

Fairly effective. There are loopholes under NAFTA for Canadian vessels landing their catch in USA ports, especially on the west coast.

**3. On a ten point scale, how effective is the vessel monitoring scheme?**

Score: 6

Score Range: 4 - 7

According to FAO (2003) “a portion of the fleet is subjected to a vessel monitoring system and it is expected to implement a VMS for the remainder of the fleet where necessary”. In Alaska Vessel Monitoring Systems (VMS) are required to be operated on all vessels permitted for directed fisheries for pollock, Pacific cod, and Atka mackerel during those times when these fisheries are open. The only exemption is for vessels using jig gear (info from NMFS webpage).

**4. Are vessels fishing illegally in the area of this fishery?**

Score: 4

Score Range: 3 - 6

FAO (2003) reports that for the US, “IUU fishing has not been identified as a problem”. However, there are reported cases of suspected vessels fishing illegally off Alaska. For instance, in 1999 a vessel was seized for illegal use of high seas drift nets to catch salmon in the western North Pacific. A report of the enforcement agency for the year 2003 indicates the following cases of illegal fishing (NMFS, 2003), “cases were initiated against five U.S. crab vessels for fishing in Russian waters; observers have written 164 affidavits. This is nearly double the number of affidavits compared to the same time period last year. This increase is primarily due to enhanced regulatory awareness of Observer Program staff. The most significant increase has been in safety, marine pollution, and marine casualty affidavits (69 in 2002 versus 54 to date in 2003); cases of Steller Sea lions harassment and suspected illegal takes; rockery incursions; interference with observer sampling procedures; fraudulent IFQ reports; no foreign fishing vessels have been seized in 2003.” A scorecard evaluation for IUU fishing in the areas covered by each of the regional management Councils has been developed by J. Sutinen at the University of Rhode Island. Sutinen estimates that the overall percentage of unreported catch in the US is about 10% (pers. comm., 2005).

MRAG (2005) reports, “The Seattle-based Unimak Fisheries company, pled guilty to having concealed and discarded halibut bycatch while fishing for sole and other species in the Gulf of Alaska and Bering Sea in the year 2000. The crew of the 185-foot Unimak reportedly hid halibut bycatch, which regulators use to determine the closing of the fishery, from a federal fisheries observer logging catches aboard the vessel...The National Marine Fisheries Service (NMFS) accused Seattle-based Icicle Seafoods company of drastically out-stepping the

brown king crab quota, hauling in an excess of USD 13.2 million worth of shellfish in a two-year period. Between February 2002 and February 2004, the federal government claims Icicle exceeded its 221,000 pound annual quota of Aleutian brown crab by having its two Adak-based companies (which were not subject to the same processing limits) process over 4.4 million pounds of crab (about a third of the overall fishery's annual limit)."

MRAG (2005) identifies the USA as being involved in about 7% of the world illegal abalone trade: "The US abalone fishery was closed indefinitely in 1997, illegal catches however continued to rise to over 120 t/year." A number of other incidents are also documented by MRAG (2005); illegal US tuna purse seiners have been arrested in Papua New Guinea; Canadian border officials are reported as trying to reduce cross-border illegal fishing by US vessels, both for salmon on the west coast and swordfish on the east coast.

#### **5. On a ten point scale, how effective is control of access in stopping illegal fishing?**

Score: 5.5

Score Range: 5 - 7

To ensure that only authorized fishing operations are conducted, the recommended fisheries management plans are applied, fisheries law enforcement procedures are conducted by US Coast Guard and NMFS, and offenders are prosecuted (FAO, 2003). FAO (2003) identifies that, "a plan of action to combat IUU fishing is being elaborated. Measures already taken to combat IUU fishing include: the implementation of RFMO (Regional Fisheries Management Organization) measures to combat IUU fishing, the use of US authority to support the conservation and management regimes of foreign countries and the implementation of the Compliance Agreement."

#### **6. Are vessels that really derive from this jurisdiction reflagged in states of convenience, generally to avoid reporting or other fishery regulations.**

Score: 5

Score Range: 3-6

"To ensure that American-flagged vessels fish in a responsible manner in international waters or waters of another state and are reported and monitored the US has implemented the Compliance Agreement, implemented the South Pacific Treaty, developed VMS programmes, implemented the CCAMLR Toothfish Catch Documentation Scheme and implemented ICCAT obligations" (FAO, 2003).

Reflagged American-owned fishing vessels are thought to be a decreasing, small, but finite issue. However, Gianni and Simpson (2005) report, "In 2003 the American company Seaport Management Services LLC purchased the former IUU toothfish vessels Caroline Glacial and the Cristina Glacial. According to the application for US documentation for these vessels, Seaport Management Services consisted of the California based fish trading company Pac-Fish, Inc. and New World Investments. Several media and NGO sources have linked Pac-Fish to IUU activities and to the Vidal Armadores group.<sup>1</sup> The 2003 COLTO report 'Rogues Gallery', on Vidal Armadores and the 'Galician Syndicate' states: "the two newest boats in the group have yet to fish, but have been registered and flagged to the USA and have applied to fish in CCAMLR waters in 2003/04."<sup>2</sup> These two vessels were the Seaport Management Services LLC owned America No. 1 and the American Warrior. A 2003 article in the Boston Globe newspaper in the US mentioned that Pac-Fish Inc. was investigated by US authorities (NOAA) in Boston for importing 33 tonnes of toothfish from the IUU fishing vessel Arvisa I – a vessel with a wellknown history of IUU fishing subsequently arrested by French authorities for illegal fishing in the Kerguelen Island EEZ." Moreover, the US is listed as 10th out of a list of the top 20 nations with serious fishery-related FOC issues by Gianni and Simpson (2005), and owned 2/26 named toothfish IUU vessels.

#### **References**

Buck, E.H. (1995) Summaries of Major Laws Implemented by the National Marine Fisheries Service. CRS Report for Congress. March 24, 1995 (<http://www.nmfs.noaa.gov>).

- FAO (2003) Country Synopses - USA.
- Harrington, J.M., Myers, R.A. and Rosenberg, A.A. (2005) Wasted fishery resources: discarded by-catch in the USA. *Fish and Fisheries* 6: 350–361.
- Gianni, M. and Simpson, W. (2005) The Changing Nature of High Seas Fishing: how flags of convenience provide cover for illegal, unreported and unregulated fishing. Australian Department of Agriculture, Fisheries and Forestry, International Transport Workers' Federation, and WWF International. 83pp.
- Kelleher, K. (2004) Collateral damage: Discards in the world's marine fisheries. An update. FAO Technical Report 470: 131pp.
- Livingston, P. (ed.) (2002) Appendix C. Ecosystem considerations for 2003. Reviewed by The Plan Teams for the Groundfish Fisheries of the Bering Sea, Aleutian Islands, and Gulf of Alaska. November 2002 North Pacific Fishery Management Council. 230 pp.
- MRAG (2005) Review of Impacts of Illegal, Unreported and Unregulated Fishing on Developing Countries. Marine Resources Assessment Group, London, UK, 180pp.
- NMFS (2003) Alaska Enforcement Division Enforcement Report. January 01, 2003 – June 04, 2003. Juneau, Alaska.
- NMFS (2004) United States National Plan of Action for the Management of Fishing Capacity. Department of Commerce, National Oceanic and Atmospheric Administration, August 2004. 28 pp.
- NMFS (2004) Sustaining and Rebuilding. National Marine Fisheries Service 2003. Report to Congress. The Status of U.S. Fisheries. U.S. Department of Commerce. National Oceanic and Atmospheric Administration. National Marine Fisheries Service. Office of Sustainable Fisheries. May 2004. 28 pp.
- NOAA Fisheries (2000) Guidelines for economic analysis of fishery management actions. Office of Sustainable Fisheries. NMFS. Silver Spring, Maryland. Version Revised August 16, 2000.
- Porter, G. (2004) Analyzing the Resource Impact of Fisheries Subsidies: A Matrix Approach. Geneva: United Nations Development Programme. 55pp.
- Transparency International (2004) Corruption Perceptions Index. [www.transparency.org/cpi](http://www.transparency.org/cpi)
- 

*Validator's comments: "This is an interesting document and I would certainly like to see the world wide picture when it is available. Given my knowledge this looks pretty good. I would note that you seem to rely on the North Pacific council and its documentation pretty heavily, and it is generally the best council and region, so you are perhaps overscoring the US as a whole by relying on the N. Pacific so much." [Please note that this comment was taken account of in revision.]*